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(54) Title: *CHLAMYDIA PNEUMONIAE* GENOMIC SEQUENCE AND POLYPEPTIDES, FRAGMENTS THEREOF AND USES THEREOF, IN PARTICULAR FOR THE DIAGNOSIS, PREVENTION AND TREATMENT OF INFECTION

(57) Abstract

The subject of the invention is the genomic sequence and the nucleotide sequences encoding polypeptides of *Chlamydia pneumoniae*, such as cellular envelope polypeptides, which are secreted or specific, or which are involved in metabolism, in the replication process or in virulence, polypeptides encoded by such sequences, as well as vectors including the said sequences and cells or animals transformed with these vectors. The invention also relates to transcriptional gene products of the *Chlamydia pneumoniae* genome, such as, for example, antisense and ribozyme molecules, which can be used to control growth of the microorganism. The invention also relates to methods of detecting these nucleic acids or polypeptides and kits for diagnosing *Chlamydia pneumoniae* infection. The invention also relates to a method of selecting compounds capable of modulating bacterial infection and a method for the biosynthesis or biodegradation of molecules of interest using the said nucleotide sequences or the said polypeptides. The invention finally comprises, pharmaceutical, in particular vaccine, compositions for the prevention and/or treatment of bacterial, in particular *Chlamydia pneumoniae*, infections.

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CHLAMYDIA PNEUMONIAE GENOMIC SEQUENCE AND POLYPEPTIDES,
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The subject of the invention is the genomic sequence and the nucleotide sequences encoding polypeptides of *Chlamydia pneumoniae*, such as cellular envelope polypeptides, which are secreted or specific, or which are involved in metabolism, in the replication process or in virulence, polypeptides encoded by such sequences, as well as vectors including the said sequences and cells or animals transformed with these vectors. The invention also relates to transcriptional gene products of the *Chlamydia pneumoniae* genome, such as, for example, antisense and ribozyme molecules, which can be used to control growth of the microorganism. The invention also relates to methods of detecting these nucleic acids or polypeptides and kits for diagnosing *Chlamydia pneumoniae* infection.

15 The invention also relates to a method of selecting compounds capable of modulating bacterial infection and a method for the biosynthesis or biodegradation of molecules of interest using the said nucleotide sequences or the said polypeptides. The invention finally comprises, pharmaceutical, in particular vaccine, compositions for the prevention and/or treatment of bacterial, in particular *Chlamydia pneumoniae*, infections.

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Comparative analysis of the sequence of the gene encoding the ribosomal 16S RNA has been widely used for the phylogenetic study of prokaryotes. This approach has made it possible to classify the Chlamydiae among the eubacteria, among which they represent a well-isolated group, with, nevertheless, a very weak link with the planctomyces. The Chlamydiae thus exhibit some unique characteristics within the eubacteria, in particular their development cycle and the structure of their membranes. They have a unique two-phase cell cycle: the elementary body, a small extracellular form, attaches to the host and is phagocytosed; in the phagosome, it is converted to the replicative intracellular form, the reticulate body. The Chlamydiae are obligate intracellular bacteria which multiply in eukaryotic cells at the expense of their energy reserves and nucleotide pools; they are responsible for a wide variety of diseases in mammals and birds. The Chlamydiae are the only members of the order Chlamydiales, of the family Chlamydiaceae and of the genus *Chlamydia*. Within the genus *Chlamydia*, four species are currently described: *Chlamydia trachomatis*, *Chlamydia psittaci*, *Chlamydia pneumoniae* and *Chlamydia pecorum*. These bacteria are grouped together and share biological and biochemical properties. Among them, only the first three infect humans, *Chlamydia pecorum* being a pathogen of ruminants.

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The species *Chlamydia psittaci* infects many animals, in particular birds, and is transmissible to humans. It is responsible for atypical pneumonia, for hepatic and renal dysfunction, for endocarditis and for conjunctivitis.

The species *Chlamydia trachomatis* is the best characterized. Besides a murine strain, it is divided into two groups which are distinguishable by the nature of the diseases for which they are responsible: trachoma, genital attack and venereal lymphogranulomatosis. There are fifteen human serotypes of *Chlamydia trachomatis* (A, K) and LGV (L1, L2, L3). Strains A to C are mainly found in eye infections, whereas strains D to K and LGV are essentially responsible for genital entry infections. It should be mentioned that the LGV strains are responsible for systemic diseases. Historically, it was in 1906 that Halberstaeder and Von Provaseck discovered, in trachoma patients, the presence of inclusions in the cytoplasm of the cells derived from conjunctival scrapings. In 1940, Rake and Jones described these same inclusions in certain cells obtained by puncturing the ganglia from a patient suffering from venereal granulomatosis. Characterization of the *Chlamydia trachomatis* microorganism was only successfully carried out in 1957, after a series of isolations in cell cultures.

It was in 1983 that *Chlamydia pneumoniae* was recognized as a human pathogen (Grayston JT et al., 1986); since then, special attention has been paid to this bacterium and it is estimated (Gaydos CA et al., 1994) that 10% of pneumonias, and 5% of bronchitides and sinusites are attributable to *Chlamydia pneumoniae* (Aldous MB et al., 1992). More recently, the association of this bacterium with the pathogenesis of asthmatic disease and of cardiovascular impairments is increasingly of interest.

Serological studies have made it possible to observe that *Chlamydia pneumoniae* infection is common in children between 5 and 16 years of age. Before this age, it is rare to find antibodies; the increase in the number of individuals carrying antibodies is then correlated with age up to 20 years. Accordingly, 50% of adults are carriers of antibodies, it being possible for this prevalence to be as high as 75%. These figures are all the more striking since a first infection induces antibody levels of which the persistence over time is limited to 3 or at most 5 years, which suggests frequent reinfection during the entire lifespan. The annual seroconversion rate is about 8% between 8 and 12 years and about 6% between 12 and 16 years (Haidl et al., 1994). Before the age of 15 years, the seroprevalence of the disease is identical between both sexes. After this age, men are more frequently infected than women; this is true in all regions worldwide where such studies have been carried out.

These infections are geographically highly widespread, as shown by numerous studies carried out throughout the world (Kanamoto Y et al., 1991; Tong CY et al., 1993). Developed countries of the north such as Canada, Denmark and Norway have the lowest infection rates; conversely, the highest prevalence rates are found in the less developed countries of tropical regions where the infection may occur before the age of 5 years.

Humans are the only known reservoir for *Chlamydia pneumoniae* and it is probable that the infection is caused by direct transmission, respiratory secretions probably being responsible for this low-yield transmission (Aldous et al., 1992). The chain of transmission may also appear to be indirect (Kleemola M et al., 1988), suggesting that the infection is caused by an effective transmission, but also that asymptomatic carriers exist, which could explain the high prevalence of the disease.

Other studies (Mordhorst CH et al., 1992) show that the efficiency of the transmission varies according to the individuals and list cases of infection affecting all or the majority of members of one family or of a group of families. The period of incubation is several weeks, significantly longer in this regard than that of many other respiratory pathogenic agents. Although under conditions of high relative humidity the infectivity of *Chlamydia pneumoniae* in the open air decreases rapidly, suggesting a direct mode of transmission under these conditions, it is probable that the transmission occurs in some cases indirectly since the microorganism can survive for up to 30 hours in a hostile environment (Falsey et al., 1993).

Clinical manifestations due to *Chlamydia pneumoniae* are essentially respiratory diseases. Pneumonia and bronchitis are the most frequent because they are clinically patent: since etiological diagnosis is evoked in this case, the infectious agent is identified. The asymptomatic diseases are probably numerous (Grayston JT et al., 1992; Grayston JT et al., 1986; Thom DH et al., 1990). The disease then progresses via bronchitis or pneumonia; fever is absent at the time of examination but is sometimes reported by the patient. The degree of seriousness of the disease is variable and in hospitalized patients, it is common to observe pleural effusion; a generalized infection may also be observed and, in severe cases, anatomicopathological examination shows *Chlamydia pneumoniae* diseases.

Other syndromes such as sinusitis (Hashiguchi K et al., 1992), purulent otitis media (Ogawa H et al., 1992), or pharyngitis (Huovinen P et al., 1989) have been described, as well as infections with respiratory impairments similar to asthma (Hahn DL et al., 1991). *Chlamydia pneumoniae* has also been associated with sarcoidosis, with erythema nodosum (Sundelof et al., 1993) and one case of Guillain-Barré syndrome has even been described (Haidl et al., 1992). The involvement of *Chlamydia pneumoniae* in Reiter's syndrome has also been evaluated (Braun J et al., 1994).

The association of *Chlamydia pneumoniae* with coronary diseases and with myocardial infarction was first suspected from the observation of the high antibody level in 71% of patients having a heart disease (Shor A et al., 1992; Kuo CC et al., 1993; Puolakkainen M et al., 1993; Thomas GN et al., 1997). Studies carried out in several countries have shown similar results in patients with atheromatous impairments (Shor A et al., 1992; Kuo CC et al., 1993; Puolakkainen M et al., 1993; Grayston JT et al., 1996; Casas-Ciria J et al., 1996; Thomas GN et al., 1997; Jackson LA et al., 1997) and in patients with carotid impairments. Anatomicopathological and microbiological studies have detected *Chlamydia pneumoniae* in the vessels. The electron microscope has made it possible to visualize the bacterium (Ladany S et al., 1989), which has in fact been demonstrated by other techniques such as PCR (Campbell LA et al., 1992; Kuo CC et al., 1993; Kuo CC et al., 1988). It also appears that the bacterium is more frequently found in old atheromatous lesions. Other studies carried out on young subjects from 15 to 35 years have given the opportunity to study the coronary arteries of people without atherosclerosis, this observation not being possible in older subjects (the

onset of the atheromatous disease is early). In these young subjects, the PCR studies did not find *Chlamydia pneumoniae* in subjects free of atheromatous disease, but revealed the presence of *Chlamydia pneumoniae* in two of the eleven subjects who showed early lesions and in six of the seven subjects who developed atheroma plaques. These studies therefore show that the atheroma plaque is
 5 very strongly correlated with the presence of *Chlamydia pneumoniae*, but the role played by the bacterium in vascular pathology is not yet defined.

The data relating to controlled clinical studies analysing the effect of treatments in *Chlamydia pneumoniae* infections are limited in number. Unlike penicillin, ampicillin or the sulphamides, erythromycin, tetracycline or doxycycline show an antibiotic activity *in vitro* against
 10 *Chlamydia pneumoniae*. However, a treatment at high doses should be continued for several weeks in order to avoid a recurrence of the infection. Accordingly, the use of two new macrolides, clarithromycin and azithromycin, whose diffusion, bioavailability and half-life allow shorter and better tolerated cures, is nowadays preferred. In the absence of definitive proof based on the results of clinical studies, an effective, without recurrences, and well-tolerated treatment of *Chlamydia*
 15 *pneumoniae* infections therefore remains desirable.

An even more important need up until now relates to a specific and sensitive diagnosis, which can be carried out conveniently and rapidly, allowing early screening for the infection. Methods based on *Chlamydia pneumoniae* culture are slow and require a considerable know-how because of the difficulty involved in the collection, preservation and storage of the strain under appropriate
 20 conditions. Methods based on antigen detection (EIA, DFA) or on nucleic acid amplification (PCR) provide tests which are more suitable for laboratory practice. A reliable, sensitive and convenient test, which allows distinction between serogroups and a fortiori between *Chlamydia pneumoniae* species is therefore highly desirable.

This is all the more important since the symptoms of *Chlamydia pneumoniae* infection
 25 appear slowly, since all the pathologies associated with these infections have not yet been identified, and since, as has been mentioned above, an association is suspected between these infections and serious chronic infections, asthma or atherosclerosis.

No vaccine is yet available against *Chlamydia pneumoniae*: this is due to the labile nature of the antigens specific to the strain, which has so far prevented their specific identification.

30 Although the number of studies and of animal models developed is high, the antigens used have not induced sufficient protective immunity to lead to the development of human vaccines. In the case of *Chlamydia pneumoniae*, the role of the immune defense in the physiology and pathology of the disease should probably be understood in order to develop satisfactory vaccines.

More detailed information relating to the biology of these strains, their interactions with
 35 their hosts, the associated phenomena of infectivity and those of escaping the immune defenses of the host in particular, and finally their involvement in the development of the these associated pathologies, will allow a better understanding of these mechanisms. In the light of the preceding text which shows

in particular the limitations of the means of controlling *Chlamydia pneumoniae* infection, it is therefore at present essential, on the one hand, to develop molecular tools, in particular from a better genetic knowledge of *Chlamydia pneumoniae*, but also to develop new preventive and therapeutic treatments, new diagnostic methods and new vaccine strategies which are specific, effective and tolerated. This is precisely the object of the present invention.

The subject of the present invention is the nucleotide sequence having the sequence SEQ ID No. 1 of the *Chlamydia pneumoniae* genome. However, the invention is not limited to SEQ ID No. 1, but encompasses genomes and nucleotides encoding polypeptides of strain variants, polymorphisms, allelic variants, and mutants.

Thus, the subject of the present invention encompasses nucleotide sequences characterized in that they are chosen from:

a) the nucleotide sequence of SEQ ID No. 1, a nucleotide sequence exhibiting at least 99.9% identity with the sequence SEQ ID No. 1, the nucleotide sequence of the genomic DNA contained within ATCC Deposit No. ___, the nucleotide sequence of a clone insert within ATCC Deposit No. ___;

b) a nucleotide sequence homologous to the sequence SEQ ID No. 1;

c) a polynucleotide sequence that hybridizes to the nucleotide sequence of a) under conditions of high or intermediate stringency as described below:

(i) By way of example and not limitation, procedures using conditions of high stringency are as follows: Prehybridization of filters containing DNA is carried out for 8 h to overnight at 65EC in buffer composed of 6X SSC, 50 mM Tris-HCl (pH 7.5), 1 mM EDTA, 0.02% PVP, 0.02% Ficoll, 0.02% BSA, and 500 µg/ml denatured salmon sperm DNA. Filters are hybridized for 48 h at 65EC, the preferred hybridization temperature, in prehybridization mixture containing 100 µg/ml denatured salmon sperm DNA and 5-20 X 10⁶ cpm of ³²P-labeled probe. Alternatively, the hybridization step can be performed at 65EC in the presence of SSC buffer, 1 x SSC corresponding to 0.15M NaCl and 0.05 M Na citrate. Subsequently, filter washes can be done at 37EC for 1 h in a solution containing 2X SSC, 0.01% PVP, 0.01% Ficoll, and 0.01% BSA, followed by a wash in 0.1X SSC at 50EC for 45 min. Alternatively, filter washes can be performed in a solution containing 2 x SSC and 0.1% SDS, or 0.5 x SSC and 0.1% SDS, or 0.1 x SSC and 0.1% SDS at 68EC for 15 minute intervals. Following the wash steps, the hybridized probes are detectable by autoradiography. Other conditions of high stringency which may be used are well known in the art and as cited in Sambrook et al., 1989, Molecular Cloning, A Laboratory Manual, Second Edition, Cold Spring Harbor Press, N.Y., pp. 9.47-9.57; and Ausubel et al., 1989, Current Protocols in Molecular Biology, Green Publishing Associates and Wiley Interscience, N.Y. are incorporated herein in their entirety.

(ii) By way of example and not limitation, procedures using conditions of intermediate stringency are as follows: Filters containing DNA are prehybridized, and then hybridized at a

temperature of 60EC in the presence of a 5 x SSC buffer and labeled probe. Subsequently, filters washes are performed in a solution containing 2x SSC at 50EC and the hybridized probes are detectable by autoradiography. Other conditions of intermediate stringency which may be used are well known in the art and as cited in Sambrook et al., 1989, Molecular Cloning, A Laboratory Manual, Second Edition, Cold Spring Harbor Press, N.Y., pp. 9.47-9.57; and Ausubel et al., 1989, Current Protocols in Molecular Biology, Green Publishing Associates and Wiley Interscience, N.Y. are incorporated herein in their entirety.

- d) a nucleotide sequence complementary to the sequence SEQ ID No. 1 or complementary to a nucleotide sequence as defined in a), b) or c) and a nucleotide sequence of their corresponding RNA;
- e) a nucleotide sequence of a representative fragment of the sequence SEQ ID No. 1, or of a representative fragment of the nucleotide sequence as defined in a), b), c) or d);
- f) a nucleotide sequence comprising a sequence as defined in a), b), c), d) or e);
- g) a nucleotide sequence capable of being obtained from a nucleotide sequence as defined in a), b), c), d), e) or f); and
- h) a modified nucleotide sequence of a nucleotide sequence as defined in a), b), c), d), e), f) or g).

Nucleotide sequence, polynucleotide or nucleic acid are understood to mean, according to the present invention, either a double-stranded DNA, a single-stranded DNA or products of transcription of the said DNAs.

It should be understood that the present invention does not relate to the genomic nucleotide sequences of *Chlamydia pneumoniae* taken in their natural environment, that is to say in the natural state. They are sequences which may have been isolated, purified or partially purified, by separation methods such as, for example, ion-exchange chromatography, molecular size exclusion chromatography or affinity chromatography, or alternatively fractionation techniques based on solubility in various solvents, or by genetic engineering methods such as amplification, cloning or subcloning, it being possible for the sequences of the invention to be carried by vectors.

The nucleotide sequence SEQ ID No. 1 was obtained by sequencing the *Chlamydia pneumoniae* genome by the method of directed sequencing after fluorescent automated sequencing of the inserts of clones and assembling of these sequences of nucleotide fragments (inserts) by means of softwares (cf. Examples). In spite of the high precision of the sequence SEQ ID No. 1, it is possible that it does not perfectly, 100% represent the nucleotide sequence of the *Chlamydia pneumoniae* genome and that a few rare sequencing errors or uncertainties still remain in the sequence SEQ ID No. 1. In the present invention, the presence of an uncertainty for an amino acid is designated by "Xaa" and that for a nucleotide is designated by "N" in the sequence listing below. These few rare errors or uncertainties could be easily detected and corrected by persons skilled in the art using the entire chromosome and/or its representative fragments according to the invention and standard

amplification, cloning and sequencing methods, it being possible for the sequences obtained to be easily compared, in particular by means of a computer software and using computer-readable media for recording the sequences according to the invention as described, for example, below. After correcting these possible rare errors or uncertainties, the corrected nucleotide sequence obtained would still exhibit at least 99.9% identity with the sequence SEQ ID No. 1. Such rare sequencing uncertainties are not present within the DNA contained within ATCC Deposit No. ___ or ___, and whatever rare sequence uncertainties that exist within SEQ ID No. 1 can routinely be corrected utilizing the DNA of the ATCC deposits.

Homologous nucleotide sequence for the purposes of the present invention is understood to mean a nucleotide sequence having a percentage identity with the bases of the nucleotide sequence SEQ ID No. 1 of at least 80%, preferably 90% and 95%, this percentage being purely statistical and it being possible for the differences between the two nucleotide sequences to be distributed randomly and over their entire length. The said homologous sequences exhibiting a percentage identity with the bases of the nucleotide sequence SEQ ID No. 1 of at least 80%, preferably 90% and 95%, may comprise, for example, the sequences corresponding to the genomic sequence or to the sequences of its representative fragments of a bacterium belonging to the Chlamydia family, including the species *Chlamydia trachomatis*, *Chlamydia psittaci* and *Chlamydia pecorum* mentioned above, as well as the sequences corresponding to the genomic sequence or to the sequences of its representative fragments of a bacterium belonging to the variants of the species *Chlamydia pneumoniae*. In the present invention, the terms family and genus are mutually interchangeable, the terms variant, serotype, strain and subspecies are also mutually interchangeable. These homologous sequences may thus correspond to variations linked to mutations within the same species or between species and may correspond in particular to truncations, substitutions, deletions and/or additions of at least one nucleotide. The said homologous sequences may also correspond to variations linked to the degeneracy of the genetic code or to a bias in the genetic code which is specific to the family, to the species or to the variant and which are likely to be present in *Chlamydia*.

Protein and/or nucleic acid sequence homologies may be evaluated using any of the variety of sequence comparison algorithms and programs known in the art. Such algorithms and programs include, but are by no means limited to, TBLASTN, BLASTP, FASTA, TFASTA, and CLUSTALW (Pearson and Lipman, 1988, *Proc. Natl. Acad. Sci. USA* 85(8):2444-2448; Altschul *et al.*, 1990, *J. Mol. Biol.* 215(3):403-410; Thompson *et al.*, 1994, *Nucleic Acids Res.* 22(2):4673-4680; Higgins *et al.*, 1996, *Methods Enzymol.* 266:383-402; Altschul *et al.*, 1990, *J. Mol. Biol.* 215(3):403-410; Altschul *et al.*, 1993, *Nature Genetics* 3:266-272).

In a particularly preferred embodiment, protein and nucleic acid sequence homologies are evaluated using the Basic Local Alignment Search Tool ("BLAST") which is well known in the art (see, *e.g.*, Karlin and Altschul, 1990, *Proc. Natl. Acad. Sci. USA* 87:2267-2268; Altschul *et al.*, 1990, *J. Mol. Biol.* 215:403-410; Altschul *et al.*, 1993, *Nature Genetics* 3:266-272; Altschul *et al.*, 1997,

Nuc. Acids Res. 25:3389-3402). In particular, five specific BLAST programs are used to perform the following task:

- (1)BLASTP and BLAST3 compare an amino acid query sequence against a protein sequence database;
- 5 (2)BLASTN compares a nucleotide query sequence against a nucleotide sequence database;
- (3)BLASTX compares the six-frame conceptual translation products of a query nucleotide sequence (both strands) against a protein sequence database;
- (4)TBLASTN compares a query protein sequence against a nucleotide sequence database
- 10 translated in all six reading frames (both strands); and
- (5)TBLASTX compares the six-frame translations of a nucleotide query sequence against the six-frame translations of a nucleotide sequence database.

The BLAST programs identify homologous sequences by identifying similar segments, which are referred to herein as "high-scoring segment pairs," between a query amino or nucleic acid sequence

15 and a test sequence which is preferably obtained from a protein or nucleic acid sequence database. High-scoring segment pairs are preferably identified (*i.e.*, aligned) by means of a scoring matrix, many of which are known in the art. Preferably, the scoring matrix used is the BLOSUM62 matrix (Gonnet *et al.*, 1992, *Science* 256:1443-1445; Henikoff and Henikoff, 1993, *Proteins* 17:49-61). Less preferably, the PAM or PAM250 matrices may also be used (see, *e.g.*, Schwartz and Dayhoff, eds.,

20 1978, *Matrices for Detecting Distance Relationships: Atlas of Protein Sequence and Structure*, Washington: National Biomedical Research Foundation)

The BLAST programs evaluate the statistical significance of all high-scoring segment pairs identified, and preferably selects those segments which satisfy a user-specified threshold of significance, such as a user-specified percent homology. Preferably, the statistical significance of a

25 high-scoring segment pair is evaluated using the statistical significance formula of Karlin (see, *e.g.*, Karlin and Altschul, 1990, *Proc. Natl. Acad. Sci. USA* 87:2267-2268).

Nucleotide sequence complementary to a sequence of the invention is understood to mean any DNA whose nucleotides are complementary to those of the sequence of the invention, and whose orientation is reversed (antiparallel sequence).

30 The present invention further comprises fragments of the sequences of a) through f), above. Representative fragments of the sequences according to the invention will be understood to mean any nucleotide fragment having at least 8 successive nucleotides, preferably at least 12 successive nucleotides, and still more preferably at least 15 or at least 20 successive nucleotides of the sequence from which it is derived. It is understood that such fragments refer only to portions of SEQ

35 ID No. 1 that are not currently listed in a publicly available database.

Among these representative fragments, those capable of hybridizing under stringent conditions with a nucleotide sequence according to the invention are preferred. Hybridization under

stringent conditions means that the temperature and ionic strength conditions are chosen such that they allow hybridization to be maintained between two complementary DNA fragments.

By way of illustration, high stringency conditions for the hybridization step for the purposes of defining the nucleotide fragments described above, are advantageously the following.

5 The hybridization is carried out at a preferred temperature of 65EC in the presence of SSC buffer, 1 × SSC corresponding to 0.15 M NaCl and 0.05 M Na citrate. The washing steps may be, for example, the following:

2 × SSC, 0.1% SDS at room temperature followed by three washes with 1 × SSC, 0.1% SDS; 0.5 × SSC, 0.1% SDS; 0.1 × SSC, 0.1% SDS at 68EC for 15 minutes.

10 Intermediate stringency conditions, using, for example, a temperature of 60EC in the presence of a 5 × SSC buffer, or of low stringency, for example a temperature of 50EC in the presence of a 5 × SSC buffer, respectively require a lower overall complementarity for the hybridization between the two sequences.

The stringent hybridization conditions described above for a polynucleotide of about 15 300 bases in size will be adapted by persons skilled in the art for larger- or smaller-sized oligonucleotides, according to the teaching of Sambrook et al., 1989.

Among the representative fragments according to the invention, those which can be used as primer or probe in methods which make it possible to obtain homologous sequences or their representative fragments according to the invention, or to reconstitute a genomic fragment found to be 20 incomplete in the sequence SEQ ID No. 1 or carrying an error or an uncertainty, are also preferred, these methods, such as the polymerase chain reaction (PCR), cloning and sequencing of nucleic acid being well known to persons skilled in the art. These homologous nucleotide sequences corresponding to mutations or to inter- or intra-species variations, as well as the complete genomic sequence or one of its representative fragments capable of being reconstituted, of course form part of 25 the invention.

Among the said representative fragments, those which can be used as primer or probe in methods allowing diagnosis of the presence of *Chlamydia pneumoniae* or one of its associated microorganisms as defined below are also preferred.

The representative fragments capable of modulating, regulating, inhibiting or inducing 30 the expression of a gene of *Chlamydia pneumoniae* or one of its associated microorganisms, and/or capable of modulating the replication cycle of *Chlamydia pneumoniae* or one of its associated microorganisms in the host cell and/or organism, are also preferred. Replication cycle is intended to designate invasion, multiplication, intracellular localization, in particular retention in the vacuole and inhibition of the process of fusion to the lysosome, and propagation of *Chlamydia pneumoniae* or one 35 of its associated microorganisms from host cells to host cells.

Among the said representative fragments, those corresponding to nucleotide sequences corresponding to open reading frames, called ORF sequences (ORF for open reading frame), and

encoding polypeptides, such as for example, but without being limited thereto, the ORF sequences which will be later described, are finally preferred.

The representative fragments according to the invention may be obtained, for example, by specific amplification, such as PCR, or after digestion, with appropriate restriction enzymes, of nucleotide sequences according to the invention; these methods are in particular described in the manual by Sambrook et al., 1989. The said representative fragments may also be obtained by chemical synthesis when they are not too large in size and according to methods well known to persons skilled in the art. For example, such fragments can be obtained by isolating fragments of the genomic DNA of ATCC Deposit No. ____ or a clone insert present at this ATCC Deposit No. ____.

The representative fragments according to the invention may be used, for example, as primer, to reconstitute some of the said representative fragments, in particular those in which a portion of the sequence is likely to be missing or imperfect, by methods well known to persons skilled in the art such as amplification, cloning or sequencing techniques.

Modified nucleotide sequence will be understood to mean any nucleotide sequence obtained by mutagenesis according to techniques well known to persons skilled in the art, and exhibiting modifications in relation to the normal sequences, for example mutations in the regulatory and/or promoter sequences for the expression of a polypeptide, in particular leading to a modification of the level of expression of the said polypeptide or to a modulation of the replicative cycle.

Modified nucleotide sequence will also be understood to mean any nucleotide sequence encoding a modified polypeptide as defined below.

The subject of the present invention also includes *Chlamydia pneumoniae* nucleotide sequences characterized in that they are chosen from a nucleotide sequence of an open reading frame (ORF), that is, the ORF2 to ORF1297 sequences.

The ORF2 to ORF1297 nucleotide sequences are defined in Tables 1 and 2, *infra*, by their position on the sequence SEQ ID No. 1. For example, the ORF2 sequence is defined by the nucleotide sequence between the nucleotides at position 42 and 794 on the sequence SEQ ID No. 1, ends included. ORF2 to ORF1297 have been identified via homology analyses as well as via analyses of potential ORF start sites, as discussed in the examples below. It is to be understood that each identified ORF of the invention comprises a nucleotide sequence that spans the contiguous nucleotide sequence from the ORF stop codon immediately 3' to the stop codon of the preceding ORF and through the 5' codon to the next stop codon of SEQ ID No. 1 in-frame to the ORF nucleotide sequence. Table 2, *infra*, lists the beginning, end and potential start site of each of ORFs 1-1297. In one embodiment, the ORF comprises the contiguous nucleotide sequence spanning from the potential ORF start site downstream (that is, 3') to the ORF stop codon (or the ORF codon immediately adjacent to and upstream of the ORF stop codon). ORF2 to ORF1297 encode the polypeptides of SEQ ID No. 2 to SEQ ID No. 1291 and of SEQ ID No. 6844 to SEQ ID No. 6849, respectively.

Upon introduction of minor frameshifts, certain individual ORFs can comprise larger

"combined" ORFs. A list of such putative "combined" ORFs is shown in Table 3, below. For example, a combined ORF can comprise ORF 25, ORF 26 and ORF 27, including intervening in-frame, nucleotide sequences. The order of ORFs (5' to 3'), within each "combined" ORF is as listed. It is to be understood that when ORF2 to ORF1297 are referred to herein, such reference is also meant to include "combined" ORFs. Polypeptide sequences encoded by such "combined" ORFs are also part of the present invention.

Table 3

- ORF 25, ORF 26, ORF 27;
- 10 ORF 28, ORF 29, ORF 30;
- ORF 31, ORF 32;
- ORF 33, ORF 35;
- ORF 466, ORF 467;
- ORF 468, ORF 469;
- 15 ORF 477, ORF 476, ORF 474;
- ORF 480, ORF 482;
- ORF 483, ORF 485, ORF 486, ORF 500;
- ORF 503, ORF 504, ORF 505;
- ORF 506, ORF 507;
- 20 ORF 1211, ORF 647;
- ORF 1286, ORF 1039;
- ORF 691, ORF 690;
- ORF 105, ORF 106;
- ORF 170, ORF 171; ORF 394, ORF 393;
- 25 ORF 453, ORF 452, ORF 451;
- ORF 526, ORF 525;
- ORF 757, ORF 756, ORF 755;
- ORF 856, ORF 855;
- ORF 958, ORF 957;
- 30 ORF 915, ORF 914, ORF 913;
- ORF 543, ORF 544;
- ORF 1266, ORF 380;
- ORF 745, ORF 744;
- ORF 777, ORF 776;
- 35 ORF 343, ORF 1297, and representative fragments.

polypeptides encoded by each of the ORFs to sequences present in public published databases. It is understood that those polypeptides listed in Table 1 as exhibiting greater than about 95% identity to a polypeptide present in a publicly disclosed database are not considered part of the present invention; likewise in this embodiment, those nucleotide sequences encoding such polypeptides are not considered part of the invention. In another embodiment, it is understood that those polypeptides listed in Table 1 as exhibiting greater than about 99% identity to a polypeptide present in a publicly disclosed database are not considered part of the invention; likewise, in this embodiment, those nucleotide sequences encoding such polypeptides are not considered part of the invention.

The invention also relates to the nucleotide sequences characterized in that they comprise a nucleotide sequence chosen from:

- a) an ORF2 to ORF1297, a "combined" ORF nucleotide sequence, the nucleotide sequence of the genomic DNA contained within ATCC Deposit No. _____ or the nucleotide sequence of a clone insert in ATCC Deposit No. _____ according to the invention;
- b) a homologous nucleotide sequence exhibiting at least 80% identity across an entire ORF2 to ORF1297 nucleotide sequence according to the invention or as defined in a);
- c) a polynucleotide sequence that hybridizes to ORF2 to ORF1297 under conditions of high or intermediate stringency as described below:

(i) By way of example and not limitation, procedures using conditions of high stringency are as follows: Prehybridization of filters containing DNA is carried out for 8 h to overnight at 65EC in buffer composed of 6X SSC, 50 mM Tris-HCl (pH 7.5), 1 mM EDTA, 0.02% PVP, 0.02% Ficoll, 0.02% BSA, and 500 µg/ml denatured salmon sperm DNA. Filters are hybridized for 48 h at 65EC, the preferred hybridization temperature, in prehybridization mixture containing 100 µg/ml denatured salmon sperm DNA and 5-20 X 10⁶ cpm of ³²P-labeled probe. Alternatively, the hybridization step can be performed at 65EC in the presence of SSC buffer, 1 x SSC corresponding to 0.15M NaCl and 0.05 M Na citrate. Subsequently, filter washes can be done at 37EC for 1 h in a solution containing 2X SSC, 0.01% PVP, 0.01% Ficoll, and 0.01% BSA, followed by a wash in 0.1X SSC at 50EC for 45 min. Alternatively, filter washes can be performed in a solution containing 2 x SSC and 0.1% SDS, or 0.5 x SSC and 0.1% SDS, or 0.1 x SSC and 0.1% SDS at 68EC for 15 minute intervals. Following the wash steps, the hybridized probes are detectable by autoradiography. Other conditions of high stringency which may be used are well known in the art and as cited in Sambrook et al., 1989, Molecular Cloning, A Laboratory Manual, Second Edition, Cold Spring Harbor Press, N.Y., pp. 9.47-9.57; and Ausubel et al., 1989, Current Protocols in Molecular Biology, Green Publishing Associates and Wiley-Interscience, N.Y., are incorporated herein in their entirety. Preferably, such sequences encode a homolog of a polypeptide encoded by one of ORF2 to ORF1297. In one embodiment, such sequences encode a *Chlamydia pneumoniae* polypeptide.

(ii) By way of example and not limitation, procedures using conditions of intermediate

stringency are as follows: Filters containing DNA are prehybridized, and then hybridized at a temperature of 60°C in the presence of a 5 x SSC buffer and labeled probe. Subsequently, filter washes are performed in a solution containing 2x SSC at 50°C and the hybridized probes are detectable by autoradiography. Other conditions of intermediate stringency which may be used are well known in the art and as cited in Sambrook et al., 1989, Molecular Cloning, A Laboratory Manual, Second Edition, Cold Spring Harbor Press, N.Y., pp. 9.47-9.57; and Ausubel et al., 1989, Current Protocols in Molecular Biology, Green Publishing Associates and Wiley Interscience, N.Y. are incorporated herein in their entirety. Preferably, such sequences encode a homolog of a polypeptide encoded by one of ORF2 to ORF1297. In one embodiment, such sequences encode a *Chlamydia pneumoniae* polypeptide.

- d) complementary or RNA nucleotide sequence corresponding to an ORF2 to ORF1297 sequence according to the invention or as defined in a), b) or c);
- e) a nucleotide sequence of a representative fragment of an ORF2 to ORF1297 sequence according to the invention or of a sequence as defined in a), b), c) or d);
- 15 f) a nucleotide sequence capable of being obtained from an ORF2 to ORF1297 sequence according to the invention or as defined in a), b), c), d) or e); and
- g) a modified nucleotide sequence of an ORF2 to ORF1297 sequence according to the invention or as defined in a), b), c), d), e) or f);

As regards the homology with the ORF2 to ORF1297 nucleotide sequences, the homologous sequences exhibiting a percentage identity with the bases of one of the ORF2 to ORF1297 nucleotide sequences of at least 80%, preferably 90% and 95%, are preferred. Such homologous sequences are identified routinely via, for example, the algorithms described above and in the examples below. The said homologous sequences correspond to the homologous sequences as defined above and may comprise, for example, the sequences corresponding to the ORF sequences of a bacterium belonging to the *Chlamydia* family, including the species *Chlamydia trachomatis*, *Chlamydia psittaci* and *Chlamydia pecorum* mentioned above, as well as the sequences corresponding to the ORF sequences of a bacterium belonging to the variants of the species *Chlamydia pneumoniae*. These homologous sequences may likewise correspond to variations linked to mutations within the same species or between species and may correspond in particular to truncations, substitutions, deletions and/or additions of at least one nucleotide. The said homologous sequences may also correspond to variations linked to the degeneracy of the genetic code or to a bias in the genetic code which is specific to the family, to the species or to the variant and which are likely to be present in *Chlamydia*.

The invention comprises polypeptides encoded by a nucleotide sequence according to the invention, preferably by a representative fragment of the sequence SEQ ID No. 1 and corresponding to an ORF sequence, in particular the *Chlamydia pneumoniae* polypeptides, characterized in that they are chosen from the sequences SEQ ID No. 2 to SEQ ID No. 1291 or SEQ ID No. 6844 to SEQ ID No.

6849 and representative fragments thereof. However, the invention is not limited to polypeptides encoded by ORFs in SEQ ID No. 1 and its corresponding ORF sequences, but encompasses polypeptides of strain variants, polymorphisms, allelic variants, and mutants.

Thus, the invention also comprises the polypeptides characterized in that they comprise a
5 polypeptide chosen from:

- a) a polypeptide encoded by a polynucleotide sequence in SEQ ID No. 1 (e.g., any polypeptide encoded by a polynucleotide sequence corresponding to ORF2 to ORF1297 and/or representative fragments thereof) according to the invention;
- b) a polypeptide homologous to a polypeptide according to the invention, or as defined in a);
- 10 c) a polypeptide encoded by a polynucleotide sequence that hybridizes to SEQ ID No. 1 or ORF2 to ORF1297 under high or intermediate stringency as described below:

(i) By way of example and not limitation, procedures using conditions of high stringency are as follows: Prehybridization of filters containing DNA is carried out for 8 h to overnight at 65EC in buffer composed of 6X SSC, 50 mM Tris-HCl (pH 7.5), 1 mM EDTA, 0.02% PVP, 0.02% Ficoll,
15 0.02% BSA, and 500 µg/ml denatured salmon sperm DNA. Filters are hybridized for 48 h at 65EC, the preferred hybridization temperature, in prehybridization mixture containing 100 µg/ml denatured salmon sperm DNA and 5-20 X 10⁶ cpm of ³²P-labeled probe. Alternatively, the hybridization step can be performed at 65EC in the presence of SSC buffer, 1 x SSC corresponding to 0.15M NaCl and 0.05 M Na citrate. Subsequently, filter washes can be done at 37EC for 1 h in a solution containing
20 2X SSC, 0.01% PVP, 0.01% Ficoll, and 0.01% BSA, followed by a wash in 0.1X SSC at 50EC for 45 min. Alternatively, filter washes can be performed in a solution containing 2 x SSC and 0.1% SDS, or 0.5 x SSC and 0.1% SDS, or 0.1 x SSC and 0.1% SDS at 68EC for 15 minute intervals. Following the wash steps, the hybridized probes are detectable by autoradiography. Other conditions of high stringency which may be used are well known in the art and as cited in Sambrook et al., 1989,
25 Molecular Cloning, A Laboratory Manual, Second Edition, Cold Spring Harbor Press, N.Y., pp. 9.47-9.57; and Ausubel et al., 1989, Current Protocols in Molecular Biology, Green Publishing Associates and Wiley Interscience, N.Y. are incorporated herein in their entirety. Preferably such polypeptide represents a homolog of a polypeptide encoded by ORF2 to ORF1297. Preferably, such sequences encode a homolog of a polypeptide encoded by one of ORF2 to ORF1297. In one embodiment, such
30 sequences encode a *Chlamydia pneumoniae* polypeptide.

(ii) By way of example and not limitation, procedures using conditions of intermediate stringency are as follows: Filters containing DNA are prehybridized, and then hybridized at a
temperature of 60EC in the presence of a 5-x-SSC-buffer and labeled probe. Subsequently, filters
washes are performed in a solution containing 2x SSC at 50EC and the hybridized probes are
35 detectable by autoradiography. Other conditions of intermediate stringency which may be used are well known in the art and as cited in Sambrook et al., 1989, Molecular Cloning, A Laboratory Manual,

- Second Edition, Cold Spring Harbor Press, N.Y., pp. 9.47-9.57; and Ausubel et al., 1989, Current Protocols in Molecular Biology, Green Publishing Associates and Wiley Interscience, N.Y. are incorporated herein in their entirety. Preferably, such sequences encode a homolog of a polypeptide encoded by one of ORF2 to ORF1297. In one embodiment, such sequences encode a *Chlamydia pneumoniae* polypeptide.
- d) a fragment of at least 5 amino acids of a polypeptide according to the invention, or as defined in a), b) or c);
 - e) a biologically active fragment of a polypeptide according to the invention, or as defined in a), b), c) or d); and
 - 10 f) a modified polypeptide of a polypeptide according to the invention, as defined in a), b), c), d) or e).

In the present description, the terms polypeptide, peptide and protein are interchangeable.

It should be understood that the invention does not relate to the polypeptides in natural form, that is to say that they are not taken in their natural environment but that they may have been isolated or obtained by purification from natural sources, or alternatively obtained by genetic recombination, or else by chemical synthesis and that they may, in this case, comprise nonnatural amino acids, as will be described below.

Homologous polypeptide will be understood to designate the polypeptides exhibiting, in relation to the natural polypeptide, certain modifications such as in particular a deletion, addition or substitution of at least one amino acid, a truncation, an extension, a chimeric fusion, and/or a mutation, or polypeptides exhibiting post-translational modifications. Among the homologous polypeptides, those whose amino acid sequence exhibits at least 80%, preferably 90%, homology or identity with the amino acid sequences of the polypeptides according to the invention are preferred. In the case of a substitution, one or more consecutive or nonconsecutive amino acids are replaced by "equivalent" amino acids. The expression "equivalent" amino acid is intended here to designate any amino acid capable of being substituted for one of the amino acids in the basic structure without, however, essentially modifying the biological activities of the corresponding peptides and as will be defined later.

Protein and/or nucleic acid sequence homologies may be evaluated using any of the variety of sequence comparison algorithms and programs known in the art. Such algorithms and programs include, but are by no means limited to, TBLASTN, BLASTP, FASTA, TFASTA, and CLUSTALW (Pearson and Lipman, 1988, *Proc. Natl. Acad. Sci. USA* 85(8):2444-2448; Altschul et al., 1990, *J. Mol. Biol.* 215(3):403-410; Thompson et al., 1994, *Nucleic Acids Res.* 22(2):4673-4680; Higgins et al., 1996, *Methods Enzymol.* 266:383-402; Altschul et al., 1990, *J. Mol. Biol.* 215(3):403-410; Altschul et al., 1993, *Nature Genetics* 3:266-272).

In a particularly preferred embodiment, protein and nucleic acid sequence homologies are evaluated using the Basic Local Alignment Search Tool ("BLAST") which is well known in the art (see,

e.g., Karlin and Altschul, 1990, *Proc. Natl. Acad. Sci. USA* 87:2267-2268; Altschul *et al.*, 1990, *J. Mol. Biol.* 215:403-410; Altschul *et al.*, 1993, *Nature Genetics* 3:266-272; Altschul *et al.*, 1997, *Nuc. Acids Res.* 25:3389-3402). In particular, five specific BLAST programs are used to perform the following task:

- 5 (1)BLASTP and BLAST3 compare an amino acid query sequence against a protein sequence database;
 - (2)BLASTN compares a nucleotide query sequence against a nucleotide sequence database;
 - (3)BLASTX compares the six-frame conceptual translation products of a query
10 nucleotide sequence (both strands) against a protein sequence database;
 - (4)TBLASTN compares a query protein sequence against a nucleotide sequence database translated in all six reading frames (both strands); and
 - (5)TBLASTX compares the six-frame translations of a nucleotide query sequence against the six-frame translations of a nucleotide sequence database.
- 15 The BLAST programs identify homologous sequences by identifying similar segments, which are referred to herein as "high-scoring segment pairs," between a query amino or nucleic acid sequence and a test sequence which is preferably obtained from a protein or nucleic acid sequence database. High-scoring segment pairs are preferably identified (*i.e.*, aligned) by means of a scoring matrix, many of which are known in the art. Preferably, the scoring matrix used is the BLOSUM62 matrix (Gonnet
20 *et al.*, 1992, *Science* 256:1443-1445; Henikoff and Henikoff, 1993, *Proteins* 17:49-61). Less preferably, the PAM or PAM250 matrices may also be used (see, *e.g.*, Schwartz and Dayhoff, eds., 1978, *Matrices for Detecting Distance Relationships: Atlas of Protein Sequence and Structure*, Washington: National Biomedical Research Foundation)

The BLAST programs evaluate the statistical significance of all high-scoring segment
25 pairs identified, and preferably selects those segments which satisfy a user-specified threshold of significance, such as a user-specified percent homology. Preferably, the statistical significance of a high-scoring segment pair is evaluated using the statistical significance formula of Karlin (see, *e.g.*, Karlin and Altschul, 1990, *Proc. Natl. Acad. Sci. USA* 87:2267-2268).

Equivalent amino acids may be determined either based on their structural homology
30 with the amino acids for which they are substituted, or on results of comparative tests of biological activity between the various polypeptides which may be carried out.

By way of example, there may be mentioned the possibilities of substitutions which may be carried out without resulting in a substantial modification of the biological activity of the corresponding modified polypeptides; the replacements, for example, of leucine with valine or
35 isoleucine, of aspartic acid with glutamic acid, of glutamine with asparagine, of arginine with lysine, and the like, the reverse substitutions naturally being feasible under the same conditions.

The homologous polypeptides also correspond to the polypeptides encoded by the

homologous nucleotide sequences as defined above and thus comprise in the present definition the mutated polypeptides or polypeptides corresponding to inter- or intra-species variations which may exist in *Chlamydia*, and which correspond in particular to truncations, substitutions, deletions and/or additions of at least one amino acid residue.

5 Biologically active fragment of a polypeptide according to the invention will be understood to designate in particular a polypeptide fragment, as defined below, exhibiting at least one of the characteristics of the polypeptides according to the invention, in particular in that it is:

- capable of eliciting an immune response directed against *Chlamydia pneumoniae*; and/or
- capable of being recognized by an antibody specific for a polypeptide according to the invention;

10 and/or

- capable of binding to a polypeptide or to a nucleotide sequence of *Chlamydia pneumoniae*; and/or
- capable of modulating, regulating, inducing or inhibiting the expression of a gene of *Chlamydia pneumoniae* or one of its associated microorganisms, and/or capable of modulating the replication cycle of *Chlamydia pneumoniae* or one of its associated microorganisms in the

15 host cell and/or organism; and/or

- capable of generally exerting an even partial physiological activity, such as for example a structural activity (cellular envelope, ribosome), an enzymatic (metabolic) activity, a transport activity, an activity in the secretion or in the virulence.

A polypeptide fragment according to the invention is understood to designate a
20 polypeptide comprising a minimum of 5 amino acids, preferably 10 amino acids or preferably 15 amino acids. It is to be understood that such fragments refer only to portions of polypeptides encoded by ORF2 to ORF1297 that are not currently listed in a publicly available database.

The polypeptide fragments according to the invention may correspond to isolated or purified fragments which are naturally present in *Chlamydia pneumoniae* or which are secreted by
25 *Chlamydia pneumoniae*, or may correspond to fragments capable of being obtained by cleaving the said polypeptide with a proteolytic enzyme, such as trypsin or chymotrypsin or collagenase, or with a chemical reagent, such as cyanogen bromide (CNBr) or alternatively by placing the said polypeptide in a highly acidic environment, for example at pH 2.5. Such polypeptide fragments may be equally well prepared by chemical synthesis, using hosts transformed with an expression vector according to
30 the invention containing a nucleic acid allowing the expression of the said fragments, placed under the control of appropriate elements for regulation and/or expression.

"Modified polypeptide" of a polypeptide according to the invention is understood to designate a polypeptide obtained by genetic recombination or by chemical synthesis as will be described below, exhibiting at least one modification in relation to the normal sequence. These
35 modifications may in particular affect amino acids responsible for a specificity or for the efficiency of the activity, or responsible for the structural conformation, for the charge or for the hydrophobicity, and for the capacity for multimerization and for membrane insertion of the polypeptide according to

the invention. It is thus possible to create polypeptides with an equivalent, an increased or a reduced activity, and with an equivalent, a narrower or a broader specificity. Among the modified polypeptides, there may be mentioned the polypeptides in which up to 5 amino acids may be modified, truncated at the N- or C-terminal end, or alternatively deleted, or else added.

- 5 As is indicated, the modifications of the polypeptide may have in particular the objective:
- of making it capable of modulating, regulating, inhibiting or inducing the expression of a gene of *Chlamydia*, in particular of *Chlamydia pneumoniae* and its variants, or one of its associated microorganisms, and/or capable of modulating the replication cycle of *Chlamydia*, in particular of *Chlamydia pneumoniae* and its variants, or one of its associated microorganisms,
 - 10 in the host cell and/or organism,
 - of allowing its use in methods of biosynthesis or of biodegradation, or its incorporation into vaccine compositions,
 - of modifying its bioavailability as a compound for therapeutic use.

The said modified polypeptides may also be used on any cell or microorganism for which

15 the said modified polypeptides will be capable of modulating, regulating, inhibiting or inducing gene expression, or of modulating the growth or the replication cycle of the said cell or of the said microorganism. The methods allowing demonstration of the said modulations on eukaryotic or prokaryotic cells are well known to persons skilled in the art. The said cells or microorganisms will be chosen, in particular, from tumour cells or infectious microorganisms and the said modified

20 polypeptides may be used for the prevention or treatment of pathologies linked to the presence of the said cells or of the said microorganisms. It is also clearly understood that the nucleotide sequences encoding the said modified polypeptides may be used for the said modulations, for example by the intermediacy of vectors according to the invention and which are described below, so as to prevent or to treat the said pathologies.

25 The above modified polypeptides may be obtained using combinatory chemistry, in which it is possible to systematically vary portions of the polypeptide before testing them on models, cell cultures or microorganisms for example, so as to select the compounds which are the most active or which exhibit the desired properties.

Chemical synthesis also has the advantage of being able to use:

- 30
- nonnatural amino acids, or
 - nonpeptide bonds.

Accordingly, in order to extend the life of the polypeptides according to the invention, it may be advantageous to use nonnatural amino acids, for example in the D form, or alternatively amino acid analogues, in particular sulphur-containing forms for example.

35 Finally, the structure of the polypeptides according to the invention, its homologous or modified forms, as well as the corresponding fragments may be integrated into chemical structures of the polypeptide type and the like. Accordingly, it may be advantageous to provide at the N- and C-

terminal ends compounds which are not recognized by proteases.

Also forming part of the invention are the nucleotide sequences encoding a polypeptide according to the invention. Described below are ORF nucleotide sequences encoding polypeptides exhibiting particularly preferable characteristics. For each group of preferred ORFS described below, it is to be understood that in addition to the individual ORFs listed, in instances wherein such ORFS are present as part of "combined" ORFs, the "combined" ORFs are also to be included within the preferred group.

More particularly, the subject of the invention is nucleotide sequences, characterized in that they encode a polypeptide of the cellular envelope, preferably of the outer cellular envelope of *Chlamydia pneumoniae* or one of its representative fragments, such as for example the predominant proteins of the outer membrane, the adhesion proteins or the proteins entering into the composition of the Chlamydia wall. Among these sequences, the sequences comprising a nucleotide sequence chosen from the following sequences are most preferred:

ORF15; ORF25; ORF26; ORF27; ORF28; ORF29; ORF30; ORF31; ORF32; ORF33; ORF35;
ORF68; ORF124; ORF275; ORF291; ORF294; ORF327; ORF342; ORF364; ORF374; ORF380;
ORF414; ORF439; ORF466; ORF467; ORF468; ORF469; ORF470; ORF472; ORF474; ORF476;
ORF477; ORF478; ORF479; ORF480; ORF482; ORF485; ORF500; ORF501; ORF503; ORF504;
ORF505; ORF506; ORF520; ORF578; ORF580; ORF581; ORF595; ORF596; ORF597; ORF737;
ORF830; ORF834; ORF836; ORF893; ORF917; ORF932; ORF976; ORF1035; ORF1045; ORF1090
and one of their representative fragments.

The structure of the cytoplasmic membranes and of the wall of bacteria is dependent on the associated proteins. The structure of the cytoplasmic membrane makes it impermeable to water, to water-soluble substances and to small-sized molecules (ions, small inorganic molecules, peptides or proteins). To enter into or to interfere with a cell or a bacterium, a ligand must establish a special relationship with a protein anchored in the cytoplasmic membrane (the receptor). These proteins which are anchored on the membrane play an important role in metabolism since they control the exchanges in the bacterium. These exchanges apply to molecules of interest for the bacterium (small molecules such as sugars and small peptides) as well as undesirable molecules for the bacterium such as antibiotics or heavy metals.

The double lipid layer structure of the membrane requires the proteins which are inserted therein to have hydrophobic domains of about twenty amino acids forming an alpha helix. Predominantly hydrophobic and potentially transmembrane regions may be predicted from the primary sequence of the proteins, itself deduced from the nucleotide sequence. The presence of one or more putative transmembrane domains raises the possibility for a protein to be associated with the cytoplasmic membrane and to be able to play an important metabolic role therein or alternatively for the protein thus exposed to be able to exhibit potentially protective epitopes.

If the proteins inserted into the membrane exhibit several transmembrane domains

capable of interacting with one another via electrostatic bonds, it then becomes possible for these proteins to form pores which go across the membrane which becomes permeable for a number of substances. It should be noted that proteins which do not have transmembrane domains may also be anchored by the intermediacy of fatty acids in the cytoplasmic membrane, it being possible for the
5 breaking of the bond between the protein and its anchor in some cases to be responsible for the release of the peptide outside the bacterium.

Preferably, the invention relates to the nucleotide sequences according to the invention, characterized in that they encode a *Chlamydia pneumoniae* transmembrane polypeptide or one of its representative fragments, having between 1 and 3 transmembrane domains and in that they comprise a
10 nucleotide sequence chosen from the following sequences:

ORF2; ORF3; ORF6; ORF9; ORF10; ORF11; ORF13; ORF14; ORF16; ORF18; ORF19; ORF20;
ORF21; ORF22; ORF25; ORF27; ORF28; ORF29; ORF30; ORF31; ORF32; ORF33; ORF34;
ORF35; ORF37; ORF39; ORF41; ORF42; ORF44; ORF45; ORF46; ORF47; ORF48; ORF49;
ORF50; ORF53; ORF54; ORF56; ORF57; ORF59; ORF60; ORF61; ORF62; ORF63; ORF64;
15 ORF65; ORF66; ORF69; ORF72; ORF73; ORF74; ORF76; ORF77; ORF78; ORF79; ORF80;
ORF82; ORF84; ORF85; ORF86; ORF88; ORF89; ORF90; ORF91; ORF92; ORF93; ORF95;
ORF96; ORF98; ORF99; ORF100; ORF101; ORF102; ORF103; ORF104; ORF105; ORF106;
ORF107; ORF108; ORF114; ORF117; ORF118; ORF122; ORF123; ORF124; ORF125; ORF129;
ORF130; ORF131; ORF132; ORF133; ORF134; ORF135; ORF137; ORF138; ORF139; ORF140;
20 ORF141; ORF142; ORF143; ORF145; ORF146; ORF147; ORF150; ORF151; ORF152; ORF156;
ORF157; ORF158; ORF159; ORF160; ORF161; ORF162; ORF164; ORF166; ORF167; ORF170;
ORF173; ORF175; ORF176; ORF178; ORF179; ORF180; ORF182; ORF183; ORF184; ORF185;
ORF186; ORF187; ORF188; ORF189; ORF190; ORF191; ORF192; ORF194; ORF195; ORF196;
ORF197; ORF198; ORF199; ORF200; ORF201; ORF202; ORF205; ORF207; ORF208; ORF209;
25 ORF210; ORF212; ORF215; ORF219; ORF220; ORF224; ORF226; ORF227; ORF228; ORF231;
ORF232; ORF233; ORF234; ORF235; ORF236; ORF238; ORF239; ORF240; ORF241; ORF242;
ORF244; ORF247; ORF251; ORF252; ORF253; ORF255; ORF256; ORF257; ORF258; ORF260;
ORF262; ORF263; ORF266; ORF267; ORF268; ORF269; ORF270; ORF273; ORF274; ORF276;
ORF278; ORF279; ORF280; ORF281; ORF282; ORF283; ORF284; ORF286; ORF287; ORF289;
30 ORF290; ORF291; ORF293; ORF294; ORF297; ORF304; ORF305; ORF307; ORF308; ORF309;
ORF310; ORF311; ORF313; ORF314; ORF315; ORF316; ORF318; ORF319; ORF320; ORF321;
ORF322; ORF323; ORF324; ORF325; ORF326; ORF331; ORF332; ORF336; ORF338; ORF339;
ORF341; ORF344; ORF345; ORF346; ORF350; ORF352; ORF353; ORF356; ORF357; ORF358;
ORF359; ORF360; ORF362; ORF365; ORF366; ORF367; ORF370; ORF372; ORF373; ORF376;
35 ORF377; ORF378; ORF379; ORF381; ORF382; ORF383; ORF384; ORF385; ORF386; ORF387;
ORF390; ORF392; ORF393; ORF394; ORF396; ORF398; ORF399; ORF400; ORF404; ORF408;
ORF410; ORF411; ORF413; ORF416; ORF417; ORF418; ORF420; ORF422; ORF424; ORF427;

- ORF428; ORF429; ORF430; ORF431; ORF433; ORF434; ORF437; ORF440; ORF441; ORF442;
ORF443; ORF444; ORF445; ORF447; ORF450; ORF451; ORF452; ORF455; ORF456; ORF459;
ORF460; ORF461; ORF462; ORF463; ORF464; ORF465; ORF467; ORF469; ORF471; ORF474;
ORF475; ORF476; ORF477; ORF479; ORF482; ORF483; ORF484; ORF485; ORF486; ORF487;
5 ORF488; ORF491; ORF493; ORF494; ORF497; ORF498; ORF499; ORF503; ORF508; ORF509;
ORF510; ORF512; ORF514; ORF515; ORF516; ORF517; ORF518; ORF520; ORF521; ORF523;
ORF525; ORF527; ORF528; ORF529; ORF530; ORF531; ORF533; ORF534; ORF535; ORF536;
ORF537; ORF540; ORF541; ORF543; ORF544; ORF545; ORF546; ORF548; ORF549; ORF551;
ORF553; ORF554; ORF555; ORF556; ORF557; ORF558; ORF559; ORF560; ORF562; ORF563;
10 ORF564; ORF565; ORF566; ORF569; ORF571; ORF573; ORF576; ORF577; ORF581; ORF583;
ORF584; ORF585; ORF586; ORF588; ORF591; ORF592; ORF594; ORF595; ORF596; ORF597;
ORF599; ORF600; ORF603; ORF605; ORF608; ORF614; ORF615; ORF620; ORF621; ORF622;
ORF623; ORF624; ORF625; ORF629; ORF630; ORF631; ORF633; ORF634; ORF637; ORF642;
ORF644; ORF645; ORF647; ORF648; ORF652; ORF654; ORF655; ORF657; ORF658; ORF659;
15 ORF660; ORF661; ORF664; ORF665; ORF666; ORF667; ORF670; ORF671; ORF672; ORF673;
ORF674; ORF676; ORF679; ORF681; ORF684; ORF687; ORF688; ORF689; ORF690; ORF693;
ORF694; ORF695; ORF696; ORF697; ORF698; ORF699; ORF700; ORF701; ORF703; ORF705;
ORF706; ORF707; ORF708; ORF710; ORF712; ORF715; ORF716; ORF717; ORF718; ORF719;
ORF721; ORF722; ORF723; ORF725; ORF726; ORF727; ORF728; ORF729; ORF730; ORF731;
20 ORF733; ORF736; ORF737; ORF738; ORF740; ORF741; ORF742; ORF743; ORF747; ORF748;
ORF750; ORF752; ORF754; ORF755; ORF756; ORF757; ORF759; ORF760; ORF761; ORF762;
ORF763; ORF764; ORF765; ORF766; ORF767; ORF768; ORF772; ORF774; ORF775; ORF777;
ORF781; ORF783; ORF788; ORF791; ORF792; ORF793; ORF794; ORF795; ORF796; ORF797;
ORF798; ORF799; ORF802; ORF803; ORF806; ORF807; ORF808; ORF809; ORF810; ORF811;
25 ORF813; ORF814; ORF815; ORF816; ORF817; ORF819; ORF820; ORF821; ORF823; ORF824;
ORF827; ORF829; ORF830; ORF831; ORF833; ORF834; ORF835; ORF837; ORF844; ORF845;
ORF846; ORF847; ORF848; ORF849; ORF850; ORF851; ORF852; ORF854; ORF855; ORF856;
ORF857; ORF859; ORF860; ORF862; ORF865; ORF866; ORF868; ORF869; ORF870; ORF871;
ORF872; ORF874; ORF877; ORF878; ORF879; ORF880; ORF881; ORF882; ORF884; ORF885;
30 ORF888; ORF889; ORF890; ORF891; ORF892; ORF894; ORF895; ORF896; ORF897; ORF899;
ORF900; ORF902; ORF903; ORF904; ORF905; ORF909; ORF910; ORF912; ORF913; ORF914;
ORF915; ORF917; ORF918; ORF919; ORF921; ORF923; ORF924; ORF926; ORF927; ORF928;
ORF929; ORF930; ORF931; ORF937; ORF938; ORF939; ORF941; ORF943; ORF948; ORF951;
ORF952; ORF953; ORF958; ORF960; ORF963; ORF964; ORF965; ORF968; ORF970; ORF974;
35 ORF975; ORF977; ORF979; ORF980; ORF981; ORF983; ORF984; ORF985; ORF987; ORF989;
ORF992; ORF993; ORF997; ORF998; ORF999; ORF1001; ORF1002; ORF1004; ORF1005;
ORF1009; ORF1013; ORF1014; ORF1015; ORF1016; ORF1019; ORF1021; ORF1023; ORF1024;

ORF1029; ORF1031; ORF1033; ORF1034; ORF1039; ORF1041; ORF1042; ORF1045;
ORF1047; ORF1049; ORF1051; ORF1052; ORF1053; ORF1054; ORF1056; ORF1059; ORF1061;
ORF1062; ORF1063; ORF1064; ORF1065; ORF1067; ORF1075; ORF1077; ORF1078; ORF1079;
ORF1080; ORF1081; ORF1089; ORF1095; ORF1097; ORF1098; ORF1099; ORF1101; ORF1102;
5 ORF1103; ORF1106; ORF1107; ORF1108; ORF1109; ORF1110; ORF1113; ORF1116; ORF1118;
ORF1119; ORF1121; ORF1123; ORF1124; ORF1126; ORF1128; ORF1130; ORF1131; ORF1133;
ORF1134; ORF1136; ORF1137 and one of their representative fragments.

Preferably, the invention relates to the nucleotide sequences according to the invention,
characterized in that they encode a *Chlamydia pneumoniae* transmembrane polypeptide or one of its
10 representative fragments, having between 4 and 6 transmembrane domains and in that they comprise a
nucleotide sequence chosen from the following sequences:

ORF5; ORF7; ORF8; ORF15; ORF36; ORF38; ORF51; ORF55; ORF58; ORF67; ORF70; ORF81;
ORF97; ORF110; ORF111; ORF115; ORF119; ORF126; ORF128; ORF148; ORF155; ORF163;
ORF165; ORF168; ORF169; ORF171; ORF172; ORF174; ORF177; ORF181; ORF193; ORF203;
15 ORF213; ORF214; ORF216; ORF217; ORF221; ORF222; ORF225; ORF229; ORF243; ORF246;
ORF248; ORF254; ORF261; ORF285; ORF288; ORF292; ORF296; ORF298; ORF299; ORF301;
ORF303; ORF317; ORF328; ORF329; ORF351; ORF354; ORF355; ORF364; ORF371; ORF374;
ORF375; ORF391; ORF395; ORF401; ORF403; ORF405; ORF409; ORF414; ORF419; ORF421;
ORF423; ORF425; ORF438; ORF448; ORF453; ORF458; ORF466; ORF468; ORF470; ORF480;
20 ORF489; ORF490; ORF496; ORF501; ORF504; ORF505; ORF506; ORF511; ORF513; ORF519;
ORF526; ORF532; ORF538; ORF539; ORF547; ORF550; ORF561; ORF568; ORF570; ORF574;
ORF578; ORF579; ORF580; ORF582; ORF589; ORF593; ORF598; ORF601; ORF604; ORF610;
ORF613; ORF617; ORF626; ORF632; ORF635; ORF638; ORF640; ORF641; ORF646; ORF649;
ORF650; ORF651; ORF686; ORF711; ORF724; ORF732; ORF734; ORF744; ORF745; ORF749;
25 ORF751; ORF769; ORF770; ORF771; ORF773; ORF776; ORF779; ORF780; ORF785; ORF787;
ORF789; ORF801; ORF805; ORF812; ORF822; ORF825; ORF826; ORF839; ORF841; ORF843;
ORF853; ORF861; ORF875; ORF876; ORF886; ORF893; ORF898; ORF906; ORF907; ORF908;
ORF920; ORF922; ORF925; ORF933; ORF935; ORF936; ORF944; ORF946; ORF947; ORF954;
ORF959; ORF961; ORF966; ORF967; ORF972; ORF978; ORF995; ORF996; ORF1000; ORF1003;
30 ORF1010; ORF1011; ORF1012; ORF1017; ORF1020; ORF1030; ORF1036; ORF1038; ORF1043;
ORF1046; ORF1048; ORF1050; ORF1058; ORF1071; ORF1073; ORF1084; ORF1085; ORF1086;
ORF1087; ORF1091; ORF1092; ORF1094; ORF1096; ORF1100; ORF1104; ORF1111; ORF1112;
ORF1114; ORF1117; ORF1122; ORF1125 and one of their representative fragments.

Preferably, the invention also relates to the nucleotide sequences according to the
35 invention, characterized in that they encode a *Chlamydia pneumoniae* transmembrane polypeptide or
one of its representative fragments, having at least 7 transmembrane domains and in that they
comprise a nucleotide sequence chosen from the following sequences:

ORF17; ORF52; ORF68; ORF83; ORF87; ORF109; ORF112; ORF113; ORF120; ORF121;
 ORF127; ORF153; ORF204; ORF211; ORF218; ORF223; ORF275; ORF277; ORF295; ORF300;
 ORF302; ORF306; ORF327; ORF335; ORF342; ORF343; ORF347; ORF349; ORF361; ORF363;
 ORF369; ORF380; ORF388; ORF389; ORF397; ORF415; ORF432; ORF439; ORF446; ORF449;
 5 ORF472; ORF478; ORF500; ORF522; ORF524; ORF567; ORF575; ORF602; ORF606; ORF609;
 ORF636; ORF639; ORF643; ORF653; ORF668; ORF692; ORF702; ORF704; ORF713; ORF720;
 ORF778; ORF784; ORF800; ORF836; ORF838; ORF842; ORF864; ORF867; ORF883; ORF901;
 ORF916; ORF932; ORF934; ORF940; ORF942; ORF950; ORF956; ORF971; ORF973; ORF976;
 ORF988; ORF994; ORF1018; ORF1028; ORF1035; ORF1037; ORF1044; ORF1055; ORF1057;
 10 ORF1068; ORF1069; ORF1070; ORF1072; ORF1082; ORF1088; ORF1105; ORF1132; ORF1135
 and one of their representative fragments.

Preferably, the invention relates to the nucleotide sequences according to the invention,
 characterized in that they encode a *Chlamydia pneumoniae* surface exposed polypeptide (e.g., an outer
 membrane protein) or one of its representative fragments, said nucleotide sequences comprising a
 15 nucleotide sequence chosen from the following sequences:

ORF 15, ORF 25, ORF 26, ORF 27, ORF 28, ORF 29, ORF 30, ORF 31, ORF 32, ORF 33, ORF 35,
 ORF 36, ORF 1257, ORF 280, ORF 291, ORF 314, ORF 354, ORF 380, ORF 1266, ORF 466, ORF
 467, ORF 468, ORF 469, ORF 470, ORF 472, ORF 474, ORF 476, ORF 477, ORF 478, ORF 479,
 ORF 480, ORF 482, ORF 483, ORF 485, ORF 486, ORF 500, ORF 501, ORF 503, ORF 504, ORF
 20 505, ORF 506, ORF 507, ORF 1268, ORF 1269, ORF 543, ORF 544, ORF 578, ORF 579, ORF 580,
 ORF 581, ORF 595, ORF 596, ORF 597, ORF 1271, ORF 633, ORF 637, ORF 699, ORF 706, ORF
 737, ORF 744, ORF 1273, ORF 751, ORF 775, ORF 776, ORF 777, ORF 793, ORF 815, ORF 830,
 ORF 1221, ORF 849, ORF 851, ORF 852, ORF 874, ORF 891, ORF 922, ORF 940, ORF 1231, ORF
 1281, ORF 1035, ORF 1079, ORF 1087, ORF 1108, and one of their representative fragments.

25 Preferably, the invention relates to the nucleotide sequences according to the invention,
 characterized in that they encode a *Chlamydia pneumoniae* lipoprotein or one of its representative
 fragments, said nucleotide sequences comprising a nucleotide sequence chosen from the following
 sequences:

ORF 3, ORF 10, ORF 11, ORF 16, ORF 1254, ORF 1255, ORF 38, ORF 1256, ORF 62, ORF 85,
 30 ORF 1258, ORF 115, ORF 1151, ORF 151, ORF 1259, ORF 173, ORF 1261, ORF 186, ORF 194,
 ORF 205, ORF 214, ORF 216, ORF 217, ORF 238, ORF 1177, ORF 280, ORF 291, ORF 317, ORF
 327, ORF 354, ORF 364, ORF 367, ORF 414, ORF 432, ORF 1192, ORF 460, ORF 1267, ORF 1268,
 ORF 520, ORF 536, ORF 1270, ORF 576, ORF 597, ORF 603, ORF 609, ORF 637, ORF 1272, ORF
 652, ORF 1213, ORF 699, ORF 705, ORF 706, ORF 708, ORF 711, ORF 727, ORF 1274, ORF 800,
 35 ORF 814, ORF 825, ORF 829, ORF 830, ORF 831, ORF 844, ORF 849, ORF 1275, ORF 1276, ORF
 1277, ORF 872, ORF 878, ORF 880, ORF 891, ORF 892, ORF 1278, ORF 1279, ORF 1280, ORF
 941, ORF 942, ORF 1282, ORF 1283, ORF 952, ORF 988, ORF 998, ORF 1009, ORF 1285, ORF

1235, ORF 1028, ORF 1056, ORF 1070, ORF 1287, ORF 1087, ORF 1288, ORF 1289, ORF 1098, ORF 1246, ORF 1291, ORF 1108, ORF 1109, ORF 1112, ORF 1133, and one of their representative fragments.

Preferably, the invention relates to the nucleotide sequences according to the invention, characterized in that they encode a *Chlamydia pneumoniae* polypeptide involved in lipopolysaccharide (LPS) biosynthesis, said nucleotide sequences comprising a nucleotide sequence chosen from the following sequences: ORF 316, ORF 564, ORF 610, ORF 647, ORF 1211, ORF 688, ORF 924, and one of their representative fragments.

Preferably the invention relates to additional LPS-related nucleotide sequences according to the invention, characterized in that they encode:

(a) a *Chlamydia pneumoniae* KDO (3-deoxy-D-manno-octulosonic acid)-related polypeptide or one of its representative fragments, said nucleotide sequences comprising a nucleotide sequence chosen from the following sequences: ORF 177, ORF 1156, ORF 245, ORF 767, and one of their representative fragments;

(b) a *Chlamydia pneumoniae* phosphomannomutase-related polypeptide or one of its representative fragments, said nucleotide sequences comprising a nucleotide sequence chosen from the following sequences: ORF 74, and one of its representative fragments;

(c) a *Chlamydia pneumoniae* phosphoglucomutase-related polypeptide or one of its representative fragments, said nucleotide sequences comprising a nucleotide sequence chosen from the following sequences: ORF 1286, ORF 1039, and one of their representative fragments; and

(d) a *Chlamydia pneumoniae* lipid A component-related polypeptide or one of its representative fragments, said nucleotide sequences comprising a nucleotide sequence chosen from the following sequences: ORF 689, ORF 690, ORF 691, ORF 1037, and one of their representative fragments.

Preferably, the invention relates to the nucleotide sequences according to the invention, characterized in that they encode a *Chlamydia pneumoniae* polypeptide containing RGD (Arg-Gly-Asp) attachment sites or one of its representative fragments.

(a) RGD-containing proteins that are outer membrane proteins, are more likely to play a role in cell attachment. ORFs that encoded a protein containing an RGD sequence and also were classified as outer membrane proteins are ORF 468 and its representative fragments.

(b) An RGD-encoding ORF that showed homology to *cds1*, *cds2*, and *copN* type III virulence loci in *Chlamydia psittaci* (Hsia, R. et al. (1997), Type III secretion genes identify a putative virulence locus of *Chlamydia*. *Molecular Microbiology* 25:351-359) is ORF 350; and its representative fragments.

(c) The outer membrane of *Chlamydia* is made of cysteine-rich proteins that form a network of both intra and inter molecular disulfide links. This contributes to the integrity of the membrane since *Chlamydia* lacks the peptidoglycan layer that other gram-negative bacteria have. Cysteine-rich proteins that have the RGD sequence are also considered to be potential vaccine candidates. Cysteine-rich proteins were defined as proteins that had more than 3.0% cysteine in their primary amino acid sequence, above the mean genomic ORF cysteine content. The corresponding ORFs are: ORF 1290, ORF 1294, ORF 1296, and one of their representative fragments.

(d) The outer membrane of *Chlamydia* may also contain small proteins that have cysteines in their N- and C-terminus that may contribute to the network formed by disulfide linkages. These proteins may be anchored in the outer membrane via their N-terminus and may have their C-terminus exposed, which then can interact with the host cells. Alternatively, these proteins may be anchored in the outer membrane via both N-and C-terminus and may have regions in the middle that may be exposed which can in turn interact with the host cells. ORFs encoding polypeptides that contain cysteines in their first 30 amino acids and also contain an RGD sequence are: ORF 105, ORF 106, ORF 114, ORF 170, ORF 171, ORF 1264, ORF 268, ORF 1265, ORF 350, ORF 393, ORF 394, ORF 451, ORF 452, ORF 453, ORF 473, ORF 499, ORF 515, ORF 519, ORF 525, ORF 526, ORF 538, ORF 611, ORF 645, ORF 686, ORF 700, ORF 746, ORF 755, ORF 756, ORF 757, ORF 789, ORF 814, ORF 855, ORF 856, ORF 878, ORF 957, ORF 958, ORF 989, ORF 1290, and one of their representative fragments.

(e) RGD-containing ORFs homologous to RGD-containing ORFs from *Chlamydia trachomatis* are:

ORF 114, ORF 468, ORF 755, ORF 756, ORF 757, ORF 855, ORF 856, ORF 905, ORF 913, ORF 914, ORF 915, and one of their representative fragments.

Preferably, the invention relates to the nucleotide sequences according to the invention, characterized in that they encode a *Chlamydia pneumoniae* Type III or other, non-type III secreted polypeptide or one of its representative fragments, said nucleotide sequences comprising a nucleotide sequence chosen from the following sequences:

ORF 25, ORF 28, ORF 29, ORF 33, ORF 308, ORF 309, ORF 343, ORF 344, ORF 345, ORF 367, ORF 414, ORF 415, ORF 480, ORF 550, ORF 579, ORF 580, ORF 581, ORF 597, ORF 699, ORF 744, ORF 751, ORF 776, ORF 866, ORF 874, ORF 883, ORF 884, ORF 888, ORF 891, ORF 1293,

and one of their representative fragments.

Preferably, the invention relates to the nucleotide sequences according to the invention, characterized in that they encode a *Chlamydia pneumoniae* cell wall anchored surface polypeptide or one of its representative fragments, said nucleotide sequences comprising a nucleotide sequence
5 chosen from the following sequences: ORF 267, ORF 271, ORF 419, ORF 590, ORF 932, ORF 1292, ORF 1295, and one of their representative fragments.

Preferably, the invention relates to the nucleotide sequences according to the invention, characterized in that they encode *Chlamydia pneumoniae* polypeptides not found in *Chlamydia trachomatis* (Blastp. $P > e^{-10}$), said nucleotide sequences comprising a nucleotide sequence chosen from
10 the following sequences: ORF 7, ORF 8, ORF 9, ORF 16, ORF 17, ORF 18, ORF 19, ORF 20, ORF 21, ORF 22, ORF 1254, ORF 23, ORF 1255, ORF 24, ORF 1139, ORF 1140, ORF 46, ORF 47, ORF 51, ORF 60, ORF 1256, ORF 61, ORF 62, ORF 63, ORF 64, ORF 1257, ORF 65, ORF 66, ORF 67, ORF 68, ORF 1143, ORF 1145, ORF 83, ORF 84, ORF 1146, ORF 85, ORF 86, ORF 87, ORF 1258, ORF 116, ORF 117, ORF 125, ORF 1148, ORF 143, ORF 1150, ORF 1151, ORF 144, ORF 145, ORF
15 147, ORF 148, ORF 149, ORF 150, ORF 152, ORF 1259, ORF 162, ORF 166, ORF 1154, ORF 167, ORF 1261, ORF 1156, ORF 1157, ORF 178, ORF 179, ORF 1158, ORF 182, ORF 183, ORF 184, ORF 185, ORF 1159, ORF 186, ORF 1160, ORF 187, ORF 188, ORF 189, ORF 190, ORF 1161, ORF 1162, ORF 191, ORF 192, ORF 194, ORF 195, ORF 1163, ORF 196, ORF 201, ORF 202, ORF 209, ORF 212, ORF 221, ORF 224, ORF 1167, ORF 226, ORF 227, ORF 228, ORF 229, ORF 230, ORF
20 231, ORF 232, ORF 1169, ORF 1170, ORF 1171, ORF 234, ORF 235, ORF 236, ORF 1172, ORF 243, ORF 251, ORF 252, ORF 1176, ORF 253, ORF 255, ORF 254, ORF 256, ORF 1177, ORF 1178, ORF 262, ORF 263, ORF 1264, ORF 278, ORF 279, ORF 1180, ORF 280, ORF 290, ORF 291, ORF 292, ORF 296, ORF 1181, ORF 297, ORF 298, ORF 300, ORF 1265, ORF 322, ORF 324, ORF 325, ORF 370, ORF 1186, ORF 371, ORF 372, ORF 1187, ORF 373, ORF 378, ORF 1266, ORF 382, ORF
25 383, ORF 384, ORF 385, ORF 386, ORF 1188, ORF 1189, ORF 391, ORF 392, ORF 398, ORF 400, ORF 403, ORF 1191, ORF 423, ORF 435, ORF 445, ORF 450, ORF 1193, ORF 456, ORF 460, ORF 461, ORF 465, ORF 1196, ORF 471, ORF 473, ORF 475, ORF 481, ORF 484, ORF 487, ORF 488, ORF 489, ORF 490, ORF 491, ORF 492, ORF 493, ORF 494, ORF 495, ORF 496, ORF 497, ORF 498, ORF 499, ORF 502, ORF 1267, ORF 1268, ORF 508, ORF 510, ORF 509, ORF 512, ORF 515,
30 ORF 519, ORF 1197, ORF 521, ORF 1198, ORF 522, ORF 524, ORF 528, ORF 534, ORF 537, ORF 1269, ORF 1270, ORF 548, ORF 551, ORF 557, ORF 1201, ORF 1203, ORF 562, ORF 566, ORF 593, ORF 595, ORF 600, ORF 1271, ORF 604, ORF 611, ORF 612, ORF 614, ORF 616, ORF 625, ORF 627, ORF 628, ORF 629, ORF 631, ORF 641, ORF 1272, ORF 648, ORF 1212, ORF 663, ORF
685, ORF 707, ORF 714, ORF 715, ORF 716, ORF 717, ORF 722, ORF 746, ORF 1273, ORF 761,
35 ORF 764, ORF 770, ORF 1217, ORF 783, ORF 1274, ORF 803, ORF 815, ORF 1220, ORF 835, ORF 1221, ORF 844, ORF 845, ORF 846, ORF 847, ORF 848, ORF 849, ORF 850, ORF 851, ORF 1275, ORF 852, ORF 862, ORF 1276, ORF 1277, ORF 873, ORF 1223, ORF 892, ORF 919, ORF 1225,

ORF 1278, ORF 926, ORF 1228, ORF 1229, ORF 1230, ORF 1279, ORF 1281, ORF 1282, ORF 1283, ORF 948, ORF 950, ORF 949, ORF 951, ORF 980, ORF 982, ORF 1233, ORF 999, ORF 1000, ORF 1001, ORF 1002, ORF 1008, ORF 1285, ORF 1235, ORF 1016, ORF 1019, ORF 1027, ORF 1036, ORF 1241, ORF 1048, ORF 1049, ORF 1050, ORF 1053, ORF 1054, ORF 1064, ORF 1076, ORF 1091, ORF 1288, ORF 1093, ORF 1289, ORF 1101, ORF 1103, ORF 1245, ORF 1246, ORF 1247, ORF 1290, ORF 1291, ORF 1115, ORF 1116, ORF 1118, ORF 1120, ORF 1249, ORF 1121, ORF 1250, ORF 1126, ORF 1251, ORF 1127, ORF 1128, ORF 1130, ORF 1129, ORF 1131, ORF 1136, ORF 1253, ORF 1292, ORF 1294, ORF 1295, ORF 1296, and one of their representative fragments.

10 Preferably, the invention also relates to the nucleotide sequences according to the invention, characterized in that they encode a *Chlamydia pneumoniae* polypeptide or one of its representative fragments which is involved in the intermediate metabolism, in particular in the metabolism of sugars and/or of cofactors, such as for example triose phosphate isomerase or pyruvate kinase, and in that they comprise a nucleotide sequence chosen from the following sequences:

15 ORF2; ORF55; ORF56; ORF69; ORF75; ORF80; ORF100; ORF110; ORF114; ORF120; ORF121; ORF157; ORF160; ORF161; ORF172; ORF180; ORF181; ORF198; ORF200; ORF225; ORF248; ORF249; ORF276; ORF277; ORF318; ORF319; ORF320; ORF323; ORF331; ORF347; ORF375; ORF376; ORF381; ORF393; ORF394; ORF395; ORF396; ORF409; ORF446; ORF447; ORF448; ORF449; ORF513; ORF516; ORF571; ORF647; ORF662; ORF697; ORF718; ORF793; ORF794; 20 ORF808; ORF809; ORF838; ORF839; ORF840; ORF853; ORF854; ORF918; ORF923; ORF929; ORF931; ORF938; ORF939; ORF958; ORF959; ORF960; ORF966; ORF995; ORF1021; ORF1040; ORF1041; ORF1042; ORF1085; ORF1100; ORF1102; ORF1117; ORF1118; ORF1119; ORF1120; ORF1135 and one of their representative fragments.

25 Preferably, the invention also relates to the nucleotide sequences according to the invention, characterized in that they encode a *Chlamydia pneumoniae* polypeptide or one of its representative fragments which is involved in the intermediate metabolism of nucleotides or nucleic acids, such as for example CTP synthetase or GMP synthetase, and in that they comprise a nucleotide sequence chosen from the following sequences:

ORF77; ORF78; ORF138; ORF189; ORF190; ORF233; ORF246; ORF338; ORF412; ORF421; 30 ORF438; ORF607; ORF648; ORF657; ORF740; ORF783; ORF967; ORF989; ORF990; ORF992; ORF1011; ORF1058; ORF1059; ORF1073; ORF1074 and one of their representative fragments.

35 Preferably, the invention also relates to the nucleotide sequences according to the invention, characterized in that they encode a *Chlamydia pneumoniae* polypeptide or one of its representative fragments which is involved in the metabolism of nucleic acids, such as for example DNA polymerases or DNA topoisomerases, and in that they comprise a nucleotide sequence chosen from the following sequences:

ORF14; ORF59; ORF70; ORF71; ORF97; ORF113; ORF137; ORF141; ORF169; ORF285; ORF287;

ORF288; ORF313; ORF326; ORF358; ORF411; ORF443; ORF548; ORF569; ORF601; ORF651;
ORF654; ORF658; ORF659; ORF664; ORF665; ORF694; ORF698; ORF704; ORF760; ORF762;
ORF763; ORF786; ORF787; ORF788; ORF801; ORF802; ORF812; ORF819; ORF822; ORF870;
ORF897; ORF898; ORF902; ORF908; ORF916; ORF954; ORF955; ORF961; ORF983; ORF996;
5 ORF1007; ORF1012; ORF1013; ORF1014; ORF1015; ORF1038; ORF1137 and one of their
representative fragments.

Preferably, the invention also relates to the nucleotide sequences according to the
invention, characterized in that they encode a *Chlamydia pneumoniae* polypeptide or one of its
representative fragments which is involved in the metabolism of amino acids or polypeptides, such as
10 for example serine hydroxymethyl transferase or the proteins which load amino acids onto transfer
RNAs, and in that they comprise a nucleotide sequence chosen from the following sequences:
ORF99; ORF111; ORF127; ORF134; ORF140; ORF174; ORF175; ORF176; ORF353; ORF377;
ORF404; ORF523; ORF539; ORF559; ORF561; ORF586; ORF598; ORF609; ORF636; ORF687;
ORF700; ORF701; ORF759; ORF790; ORF857; ORF861; ORF904; ORF936; ORF952; ORF962;
15 ORF963; ORF964; ORF965; ORF991; ORF1003; ORF1004; ORF1005; ORF1018; ORF1067;
ORF1110; ORF1111; ORF1112; ORF1114; ORF1121; ORF1122; ORF1123; ORF1124; ORF1125
and one of their representative fragments.

Preferably, the invention also relates to the nucleotide sequences according to the
invention, characterized in that they encode a *Chlamydia pneumoniae* polypeptide or one of its
20 representative fragments which is involved in the metabolism of polypeptides, such as for example
protein kinases or proteases, and in that they comprise a nucleotide sequence chosen from the
following sequences:
ORF4; ORF44; ORF45; ORF48; ORF54; ORF112; ORF130; ORF155; ORF163; ORF212; ORF257;
ORF307; ORF343; ORF405; ORF416; ORF458; ORF540; ORF541; ORF542; ORF543; ORF544;
25 ORF560; ORF594; ORF652; ORF699; ORF723; ORF747; ORF817; ORF827; ORF871; ORF909;
ORF910; ORF911; ORF912; ORF1023; ORF1051; ORF1052; ORF1081 and one of their
representative fragments.

Preferably, the invention also relates to the nucleotide sequences according to the
invention, characterized in that they encode a *Chlamydia pneumoniae* polypeptide or one of its
30 representative fragments which is involved in the metabolism of fatty acids, such as for example
succinyl-CoA-synthesizing proteins or phosphatidylserine synthetase, and in that they comprise a
nucleotide sequence chosen from the following sequences:
ORF76; ORF284; ORF308; ORF309; ORF310; ORF311; ORF312; ORF425; ORF433; ORF565;
ORF688; ORF690; ORF691; ORF767; ORF797; ORF894; ORF895; ORF994; ORF1020; ORF1030;
35 ORF1033; ORF1034; ORF1046; ORF1047; ORF1057 and one of their representative fragments.

Preferably, the invention also relates to the nucleotide sequences according to the
invention, characterized in that they encode a *Chlamydia pneumoniae* polypeptide or one of its

representative fragments which is involved in the synthesis of the wall, such as for example KDO transferase, and the proteins responsible for the attachment of certain sugars onto the exposed proteins, and in that they comprise a nucleotide sequence chosen from the following sequences:

ORF49; ORF50; ORF177; ORF178; ORF245; ORF610; ORF972; ORF974; ORF978; ORF1037 and

5 one of their representative fragments.

Preferably, the invention also relates to the nucleotide sequences according to the invention, characterized in that they encode a *Chlamydia pneumoniae* polypeptide or one of its representative fragments which is involved in the transcription, translation and/or maturation process, such as for example initiation factors, RNA polymerases or certain chaperone proteins, and in that

10 they comprise a nucleotide sequence chosen from the following sequences:

ORF90; ORF92; ORF131; ORF151; ORF199; ORF333; ORF334; ORF336; ORF379; ORF589; ORF590; ORF619; ORF630; ORF649; ORF739; ORF741; ORF806; ORF821; ORF843; ORF968; ORF971; ORF1061 and one of their representative fragments.

Preferably, the invention also relates to the nucleotide sequences according to the invention, characterized in that they encode a *Chlamydia pneumoniae* ribosomal polypeptide or one of its representative fragments, such as for example the ribosomal proteins L21, L27 and S10, and in that they comprise a nucleotide sequence chosen from the following sequences:

ORF93; ORF94; ORF95; ORF136; ORF259; ORF332; ORF348; ORF583; ORF584; ORF588; ORF591; ORF592; ORF663; ORF666; ORF667; ORF669; ORF670; ORF671; ORF672; ORF673; 20 ORF674; ORF675; ORF676; ORF677; ORF678; ORF679; ORF680; ORF681; ORF683; ORF684; ORF738; ORF781; ORF1008; ORF1024; ORF1025; ORF1066 and one of their representative fragments.

Preferably, the invention also relates to the nucleotide sequences according to the invention, characterized in that they encode a *Chlamydia pneumoniae* transport polypeptide or one of its representative fragments, such as for example the proteins for transporting amino acids, sugars and certain oligopeptides, and in that they comprise a nucleotide sequence chosen from the following sequences:

ORF40; ORF41; ORF52; ORF105; ORF106; ORF107; ORF109; ORF133; ORF210; ORF211; ORF214; ORF215; ORF216; ORF217; ORF218; ORF219; ORF220; ORF223; ORF242; ORF260; 30 ORF293; ORF299; ORF366; ORF369; ORF575; ORF602; ORF638; ORF639; ORF640; ORF643; ORF653; ORF702; ORF703; ORF724; ORF732; ORF855; ORF856; ORF901; ORF906; ORF933; ORF942; ORF1043; ORF1086; ORF1105 and one of their representative fragments.

Preferably, the invention also relates to the nucleotide sequences according to the invention, characterized in that they encode a *Chlamydia pneumoniae* polypeptide or one of its representative fragments which is involved in the virulence process, such as for example the proteins analogous to the *Escherichia coli* vacB protein, and in that they comprise a nucleotide sequence chosen from the following sequences:

ORF546; ORF550; ORF778; ORF779; ORF886 and one of their representative fragments.

Preferably, the invention also relates to the nucleotide sequences according to the invention, characterized in that they encode a *Chlamydia pneumoniae* polypeptide or one of its representative fragments which is involved in the secretory system and/or which is secreted, such as
5 for example proteins homologous to proteins in the secretory system of certain bacteria such as the Salmonellae or the Yersiniae, and in that they comprise a nucleotide sequence chosen from the following sequences:

ORF751; ORF874; ORF875; ORF876; ORF883; ORF884; ORF885 and one of their representative fragments.

10 Preferably, the invention also relates to a nucleotide sequence according to the invention, characterized in that they encode a polypeptide specific to *Chlamydia pneumoniae* or one of its representative fragments (with a Blast E value of $>10^{-5}$), and in that they comprise a nucleotide sequence chosen from the following sequences:

ORF7; ORF8; ORF17; ORF18; ORF19; ORF20; ORF22; ORF23; ORF24; ORF51; ORF60; ORF63;
15 ORF65; ORF66; ORF67; ORF83; ORF84; ORF86; ORF87; ORF125; ORF143; ORF144; ORF179;
ORF182; ORF184; ORF185; ORF187; ORF221; ORF252; ORF254;; ORF278; ORF279; ORF387;
ORF388; ORF397; ORF1048; ORF1049; ORF1050; ORF1128; ORF1130; ORF1131 and one of their representative fragments.

Also forming part of the invention are polypeptides encoded by the polynucleotides of
20 the invention, as well as fusion polypeptides comprising such polypeptides. In one embodiment, the polypeptides and fusion polypeptides immunoreact with seropositive serum of an individual infected with *Chlamydia pneumoniae*. For example, described below, are polypeptide sequences exhibiting particularly preferable characteristics. For each group of preferred polypeptides described below, it is to be understood that in addition to the individual polypeptides listed, in instances wherein such
25 polypeptides are encoded as part of "combined" ORFs, such "combined" polypeptides are also to be included within the preferred group.

The subject of the invention is also a polypeptide according to the invention, characterized in that it is a polypeptide of the cellular envelope, preferably of the outer cellular envelope, of *Chlamydia pneumoniae* or one of its representative fragments. According to the
30 invention, the said polypeptide is preferably chosen from the polypeptides having the following sequences:

SEQ ID No. 15; SEQ ID No. 25; SEQ ID No. 26; SEQ ID No. 27; SEQ ID No. 28; SEQ ID No. 29;
SEQ ID No. 30; SEQ ID No. 31; SEQ ID No. 32; SEQ ID No. 33; SEQ ID No. 35; SEQ ID No. 68;
SEQ ID No. 124; SEQ ID No. 275; SEQ ID No. 291; SEQ ID No. 294; SEQ ID No. 327; SEQ ID
35 No. 342; SEQ ID No. 364; SEQ ID No. 374; SEQ ID No. 380; SEQ ID No. 414; SEQ ID No. 439;
SEQ ID No. 466; SEQ ID No. 467; SEQ ID No. 468; SEQ ID No. 469; SEQ ID No. 470; SEQ ID
No. 472; SEQ ID No. 474; SEQ ID No. 476; SEQ ID No. 477; SEQ ID No. 478; SEQ ID No. 479;

SEQ ID No. 480; SEQ ID No. 482; SEQ ID No. 485; SEQ ID No. 500; SEQ ID No. 501;
 SEQ ID No. 503; SEQ ID No. 504; SEQ ID No. 505; SEQ ID No. 506; SEQ ID No. 520; SEQ ID
 No. 578; SEQ ID No. 580; SEQ ID No. 581; SEQ ID No. 595; SEQ ID No. 596; SEQ ID No. 597;
 SEQ ID No. 737; SEQ ID No. 830; SEQ ID No. 834; SEQ ID No. 836; SEQ ID No. 893; SEQ ID
 5 No. 917; SEQ ID No. 932; SEQ ID No. 976; SEQ ID No. 1035; SEQ ID No. 1045; SEQ ID No. 1090
 and one of their representative fragments.

Preferably, the invention relates to a polypeptide according to the invention,
 characterized in that it is a *Chlamydia pneumoniae* transmembrane polypeptide or one of its
 representative fragments, having between 1 and 3 transmembrane domains, and in that it is chosen
 10 from the polypeptides having the following sequences:
 SEQ ID No. 2; SEQ ID No. 3; SEQ ID No. 6; SEQ ID No. 9; SEQ ID No. 10; SEQ ID No. 11;
 SEQ ID No. 13; SEQ ID No. 14; SEQ ID No. 16; SEQ ID No. 18; SEQ ID No. 19; SEQ ID No. 20;
 SEQ ID No. 21; SEQ ID No. 22; SEQ ID No. 25; SEQ ID No. 27; SEQ ID No. 28; SEQ ID
 No. 29; SEQ ID No. 30; SEQ ID No. 31; SEQ ID No. 32; SEQ ID No. 33; SEQ ID No. 34;
 15 SEQ ID No. 35; SEQ ID No. 37; SEQ ID No. 39; SEQ ID No. 41; SEQ ID No. 42; SEQ ID
 No. 44; SEQ ID No. 45; SEQ ID No. 46; SEQ ID No. 47; SEQ ID No. 48; SEQ ID No. 49;
 SEQ ID No. 50; SEQ ID No. 53; SEQ ID No. 54; SEQ ID No. 56; SEQ ID No. 57; SEQ ID
 No. 59; SEQ ID No. 60; SEQ ID No. 61; SEQ ID No. 62; SEQ ID No. 63; SEQ ID No. 64;
 SEQ ID No. 65; SEQ ID No. 66; SEQ ID No. 69; SEQ ID No. 72; SEQ ID No. 73; SEQ ID
 20 No. 74; SEQ ID No. 76; SEQ ID No. 77; SEQ ID No. 78; SEQ ID No. 79; SEQ ID No. 80;
 SEQ ID No. 82; SEQ ID No. 84; SEQ ID No. 85; SEQ ID No. 86; SEQ ID No. 88; SEQ ID
 No. 89; SEQ ID No. 90; SEQ ID No. 91; SEQ ID No. 92; SEQ ID No. 93; SEQ ID No. 95;
 SEQ ID No. 96; SEQ ID No. 98; SEQ ID No. 99; SEQ ID No. 100; SEQ ID No. 101; SEQ ID
 No. 102; SEQ ID No. 103; SEQ ID No. 104; SEQ ID No. 105; SEQ ID No. 106; SEQ ID No. 107;
 25 SEQ ID No. 108; SEQ ID No. 114; SEQ ID No. 117; SEQ ID No. 118; SEQ ID No. 122; SEQ ID
 No. 123; SEQ ID No. 124; SEQ ID No. 125; SEQ ID No. 129; SEQ ID No. 130; SEQ ID No. 131;
 SEQ ID No. 132; SEQ ID No. 133; SEQ ID No. 134; SEQ ID No. 135; SEQ ID No. 137; SEQ ID
 No. 138; SEQ ID No. 139; SEQ ID No. 140; SEQ ID No. 141; SEQ ID No. 142; SEQ ID No. 143;
 SEQ ID No. 145; SEQ ID No. 146; SEQ ID No. 147; SEQ ID No. 150; SEQ ID No. 151; SEQ ID
 30 No. 152; SEQ ID No. 156; SEQ ID No. 157; SEQ ID No. 158; SEQ ID No. 159; SEQ ID No. 160;
 SEQ ID No. 161; SEQ ID No. 162; SEQ ID No. 164; SEQ ID No. 166; SEQ ID No. 167; SEQ ID
 No. 170; SEQ ID No. 173; SEQ ID No. 175; SEQ ID No. 176; SEQ ID No. 178; SEQ ID No. 179;
 SEQ ID No. 180; SEQ ID No. 182; SEQ ID No. 183; SEQ ID No. 184; SEQ ID No. 185; SEQ ID
 No. 186; SEQ ID No. 187; SEQ ID No. 188; SEQ ID No. 189; SEQ ID No. 190; SEQ ID No. 191;
 35 SEQ ID No. 192; SEQ ID No. 194; SEQ ID No. 195; SEQ ID No. 196; SEQ ID No. 197; SEQ ID
 No. 198; SEQ ID No. 199; SEQ ID No. 200; SEQ ID No. 201; SEQ ID No. 202; SEQ ID No. 205;
 SEQ ID No. 207; SEQ ID No. 208; SEQ ID No. 209; SEQ ID No. 210; SEQ ID No. 212; SEQ ID

No. 215; SEQ ID No. 219; SEQ ID No. 220; SEQ ID No. 224; SEQ ID No. 226; SEQ ID
No. 227; SEQ ID No. 228; SEQ ID No. 231; SEQ ID No. 232; SEQ ID No. 233; SEQ ID No. 234;
SEQ ID No. 235; SEQ ID No. 236; SEQ ID No. 238; SEQ ID No. 239; SEQ ID No. 240; SEQ ID
No. 241; SEQ ID No. 242; SEQ ID No. 244; SEQ ID No. 247; SEQ ID No. 251; SEQ ID No. 252;
5 SEQ ID No. 253; SEQ ID No. 255; SEQ ID No. 256; SEQ ID No. 257; SEQ ID No. 258; SEQ ID
No. 260; SEQ ID No. 262; SEQ ID No. 263; SEQ ID No. 266; SEQ ID No. 267; SEQ ID No. 268;
SEQ ID No. 269; SEQ ID No. 270; SEQ ID No. 273; SEQ ID No. 274; SEQ ID No. 276; SEQ ID
No. 278; SEQ ID No. 279; SEQ ID No. 280; SEQ ID No. 281; SEQ ID No. 282; SEQ ID No. 283;
SEQ ID No. 284; SEQ ID No. 286; SEQ ID No. 287; SEQ ID No. 289; SEQ ID No. 290; SEQ ID
10 No. 291; SEQ ID No. 293; SEQ ID No. 294; SEQ ID No. 297; SEQ ID No. 304; SEQ ID No. 305;
SEQ ID No. 307; SEQ ID No. 308; SEQ ID No. 309; SEQ ID No. 310; SEQ ID No. 311; SEQ ID
No. 313; SEQ ID No. 314; SEQ ID No. 315; SEQ ID No. 316; SEQ ID No. 318; SEQ ID No. 319;
SEQ ID No. 320; SEQ ID No. 321; SEQ ID No. 322; SEQ ID No. 323; SEQ ID No. 324; SEQ ID
No. 325; SEQ ID No. 326; SEQ ID No. 331; SEQ ID No. 332; SEQ ID No. 336; SEQ ID No. 338;
15 SEQ ID No. 339; SEQ ID No. 341; SEQ ID No. 344; SEQ ID No. 345; SEQ ID No. 346; SEQ ID
No. 350; SEQ ID No. 352; SEQ ID No. 353; SEQ ID No. 356; SEQ ID No. 357; SEQ ID No. 358;
SEQ ID No. 359; SEQ ID No. 360; SEQ ID No. 362; SEQ ID No. 365; SEQ ID No. 366; SEQ ID
No. 367; SEQ ID No. 370; SEQ ID No. 372; SEQ ID No. 373; SEQ ID No. 376; SEQ ID No. 377;
SEQ ID No. 378; SEQ ID No. 379; SEQ ID No. 381; SEQ ID No. 382; SEQ ID No. 383; SEQ ID
20 No. 384; SEQ ID No. 385; SEQ ID No. 386; SEQ ID No. 387; SEQ ID No. 390; SEQ ID No. 392;
SEQ ID No. 393; SEQ ID No. 394; SEQ ID No. 396; SEQ ID No. 398; SEQ ID No. 399; SEQ ID
No. 400; SEQ ID No. 404; SEQ ID No. 408; SEQ ID No. 410; SEQ ID No. 411; SEQ ID No. 413;
SEQ ID No. 416; SEQ ID No. 417; SEQ ID No. 418; SEQ ID No. 420; SEQ ID No. 422; SEQ ID
No. 424; SEQ ID No. 427; SEQ ID No. 428; SEQ ID No. 429; SEQ ID No. 430; SEQ ID No. 431;
25 SEQ ID No. 433; SEQ ID No. 434; SEQ ID No. 437; SEQ ID No. 440; SEQ ID No. 441; SEQ ID
No. 442; SEQ ID No. 443; SEQ ID No. 444; SEQ ID No. 445; SEQ ID No. 447; SEQ ID No. 450;
SEQ ID No. 451; SEQ ID No. 452; SEQ ID No. 455; SEQ ID No. 456; SEQ ID No. 459; SEQ ID
No. 460; SEQ ID No. 461; SEQ ID No. 462; SEQ ID No. 463; SEQ ID No. 464; SEQ ID No. 465;
SEQ ID No. 467; SEQ ID No. 469; SEQ ID No. 471; SEQ ID No. 474; SEQ ID No. 475; SEQ ID
30 No. 476; SEQ ID No. 477; SEQ ID No. 479; SEQ ID No. 482; SEQ ID No. 483; SEQ ID No. 484;
SEQ ID No. 485; SEQ ID No. 486; SEQ ID No. 487; SEQ ID No. 488; SEQ ID No. 491; SEQ ID
No. 493; SEQ ID No. 494; SEQ ID No. 497; SEQ ID No. 498; SEQ ID No. 499; SEQ ID No. 503;
SEQ ID No. 508; SEQ ID No. 509; SEQ ID No. 510; SEQ ID No. 512; SEQ ID No. 514; SEQ ID
No. 515; SEQ ID No. 516; SEQ ID No. 517; SEQ ID No. 518; SEQ ID No. 520; SEQ ID No. 521;
35 SEQ ID No. 523; SEQ ID No. 525; SEQ ID No. 527; SEQ ID No. 528; SEQ ID No. 529; SEQ ID
No. 530; SEQ ID No. 531; SEQ ID No. 533; SEQ ID No. 534; SEQ ID No. 535; SEQ ID No. 536;
SEQ ID No. 537; SEQ ID No. 540; SEQ ID No. 541; SEQ ID No. 543; SEQ ID No. 544; SEQ ID

No. 545; SEQ ID No. 546; SEQ ID No. 548; SEQ ID No. 549; SEQ ID No. 551; SEQ ID No. 553; SEQ ID No. 554; SEQ ID No. 555; SEQ ID No. 556; SEQ ID No. 557; SEQ ID No. 558; SEQ ID No. 559; SEQ ID No. 560; SEQ ID No. 562; SEQ ID No. 563; SEQ ID No. 564; SEQ ID No. 565; SEQ ID No. 566; SEQ ID No. 569; SEQ ID No. 571; SEQ ID No. 573; SEQ ID No. 576;
5 SEQ ID No. 577; SEQ ID No. 581; SEQ ID No. 583; SEQ ID No. 584; SEQ ID No. 585; SEQ ID No. 586; SEQ ID No. 588; SEQ ID No. 591; SEQ ID No. 592; SEQ ID No. 594; SEQ ID No. 595; SEQ ID No. 596; SEQ ID No. 597; SEQ ID No. 599; SEQ ID No. 600; SEQ ID No. 603; SEQ ID No. 605; SEQ ID No. 608; SEQ ID No. 614; SEQ ID No. 615; SEQ ID No. 620; SEQ ID No. 621; SEQ ID No. 622; SEQ ID No. 623; SEQ ID No. 624; SEQ ID No. 625; SEQ ID No. 629; SEQ ID
10 No. 630; SEQ ID No. 631; SEQ ID No. 633; SEQ ID No. 634; SEQ ID No. 637; SEQ ID No. 642; SEQ ID No. 644; SEQ ID No. 645; SEQ ID No. 647; SEQ ID No. 648; SEQ ID No. 652; SEQ ID No. 654; SEQ ID No. 655; SEQ ID No. 657; SEQ ID No. 658; SEQ ID No. 659; SEQ ID No. 660; SEQ ID No. 661; SEQ ID No. 664; SEQ ID No. 665; SEQ ID No. 666; SEQ ID No. 667; SEQ ID No. 670; SEQ ID No. 671; SEQ ID No. 672; SEQ ID No. 673; SEQ ID No. 674; SEQ ID No. 676;
15 SEQ ID No. 679; SEQ ID No. 681; SEQ ID No. 684; SEQ ID No. 687; SEQ ID No. 688; SEQ ID No. 689; SEQ ID No. 690; SEQ ID No. 693; SEQ ID No. 694; SEQ ID No. 695; SEQ ID No. 696; SEQ ID No. 697; SEQ ID No. 698; SEQ ID No. 699; SEQ ID No. 700; SEQ ID No. 701; SEQ ID No. 703; SEQ ID No. 705; SEQ ID No. 706; SEQ ID No. 707; SEQ ID No. 708; SEQ ID No. 710; SEQ ID No. 712; SEQ ID No. 715; SEQ ID No. 716; SEQ ID No. 717; SEQ ID No. 718; SEQ ID
20 No. 719; SEQ ID No. 721; SEQ ID No. 722; SEQ ID No. 723; SEQ ID No. 725; SEQ ID No. 726; SEQ ID No. 727; SEQ ID No. 728; SEQ ID No. 729; SEQ ID No. 730; SEQ ID No. 731; SEQ ID No. 733; SEQ ID No. 736; SEQ ID No. 737; SEQ ID No. 738; SEQ ID No. 740; SEQ ID No. 741; SEQ ID No. 742; SEQ ID No. 743; SEQ ID No. 747; SEQ ID No. 748; SEQ ID No. 750; SEQ ID No. 752; SEQ ID No. 754; SEQ ID No. 755; SEQ ID No. 756; SEQ ID No. 757; SEQ ID No. 759;
25 SEQ ID No. 760; SEQ ID No. 761; SEQ ID No. 762; SEQ ID No. 763; SEQ ID No. 764; SEQ ID No. 765; SEQ ID No. 766; SEQ ID No. 767; SEQ ID No. 768; SEQ ID No. 772; SEQ ID No. 774; SEQ ID No. 775; SEQ ID No. 777; SEQ ID No. 781; SEQ ID No. 783; SEQ ID No. 788; SEQ ID No. 791; SEQ ID No. 792; SEQ ID No. 793; SEQ ID No. 794; SEQ ID No. 795; SEQ ID No. 796; SEQ ID No. 797; SEQ ID No. 798; SEQ ID No. 799; SEQ ID No. 802; SEQ ID No. 803; SEQ ID
30 No. 806; SEQ ID No. 807; SEQ ID No. 808; SEQ ID No. 809; SEQ ID No. 810; SEQ ID No. 811; SEQ ID No. 813; SEQ ID No. 814; SEQ ID No. 815; SEQ ID No. 816; SEQ ID No. 817; SEQ ID No. 819; SEQ ID No. 820; SEQ ID No. 821; SEQ ID No. 823; SEQ ID No. 824; SEQ ID No. 827; SEQ ID No. 829; SEQ ID No. 830; SEQ ID No. 831; SEQ ID No. 833; SEQ ID No. 834; SEQ ID No. 835; SEQ ID No. 837; SEQ ID No. 844; SEQ ID No. 845; SEQ ID No. 846; SEQ ID No. 847;
35 SEQ ID No. 848; SEQ ID No. 849; SEQ ID No. 850; SEQ ID No. 851; SEQ ID No. 852; SEQ ID No. 854; SEQ ID No. 855; SEQ ID No. 856; SEQ ID No. 857; SEQ ID No. 859; SEQ ID No. 860; SEQ ID No. 862; SEQ ID No. 865; SEQ ID No. 866; SEQ ID No. 868; SEQ ID No. 869; SEQ ID

No. 870; SEQ ID No. 871; SEQ ID No. 872; SEQ ID No. 874; SEQ ID No. 877; SEQ ID No. 878; SEQ ID No. 879; SEQ ID No. 880; SEQ ID No. 881; SEQ ID No. 882; SEQ ID No. 884; SEQ ID No. 885; SEQ ID No. 888; SEQ ID No. 889; SEQ ID No. 890; SEQ ID No. 891; SEQ ID No. 892; SEQ ID No. 894; SEQ ID No. 895; SEQ ID No. 896; SEQ ID No. 897; SEQ ID No. 899; 5 SEQ ID No. 900; SEQ ID No. 902; SEQ ID No. 903; SEQ ID No. 904; SEQ ID No. 905; SEQ ID No. 909; SEQ ID No. 910; SEQ ID No. 912; SEQ ID No. 913; SEQ ID No. 914; SEQ ID No. 915; SEQ ID No. 917; SEQ ID No. 918; SEQ ID No. 919; SEQ ID No. 921; SEQ ID No. 923; SEQ ID No. 924; SEQ ID No. 926; SEQ ID No. 927; SEQ ID No. 928; SEQ ID No. 929; SEQ ID No. 930; SEQ ID No. 931; SEQ ID No. 937; SEQ ID No. 938; SEQ ID No. 939; SEQ ID No. 941; SEQ ID 10 No. 943; SEQ ID No. 948; SEQ ID No. 951; SEQ ID No. 952; SEQ ID No. 953; SEQ ID No. 958; SEQ ID No. 960; SEQ ID No. 963; SEQ ID No. 964; SEQ ID No. 965; SEQ ID No. 968; SEQ ID No. 970; SEQ ID No. 974; SEQ ID No. 975; SEQ ID No. 977; SEQ ID No. 979; SEQ ID No. 980; SEQ ID No. 981; SEQ ID No. 983; SEQ ID No. 984; SEQ ID No. 985; SEQ ID No. 987; SEQ ID No. 989; SEQ ID No. 992; SEQ ID No. 993; SEQ ID No. 997; SEQ ID No. 998; SEQ ID No. 999; 15 SEQ ID No. 1001; SEQ ID No. 1002; SEQ ID No. 1004; SEQ ID No. 1005; SEQ ID No. 1009; SEQ ID No. 1013; SEQ ID No. 1014; SEQ ID No. 1015; SEQ ID No. 1016; SEQ ID No. 1019; SEQ ID No. 1021; SEQ ID No. 1023; SEQ ID No. 1024; SEQ ID No. 1029; SEQ ID No. 1031; SEQ ID No. 1033; SEQ ID No. 1034; SEQ ID No. 1039; SEQ ID No. 1041; SEQ ID No. 1042; SEQ ID No. 1045; SEQ ID No. 1047; SEQ ID No. 1049; SEQ ID No. 1051; SEQ ID No. 1052; 20 SEQ ID No. 1053; SEQ ID No. 1054; SEQ ID No. 1056; SEQ ID No. 1059; SEQ ID No. 1061; SEQ ID No. 1062; SEQ ID No. 1063; SEQ ID No. 1064; SEQ ID No. 1065; SEQ ID No. 1067; SEQ ID No. 1075; SEQ ID No. 1077; SEQ ID No. 1078; SEQ ID No. 1079; SEQ ID No. 1080; SEQ ID No. 1081; SEQ ID No. 1089; SEQ ID No. 1095; SEQ ID No. 1097; SEQ ID No. 1098; SEQ ID No. 1099; SEQ ID No. 1101; SEQ ID No. 1102; SEQ ID No. 1103; SEQ ID No. 1106; 25 SEQ ID No. 1107; SEQ ID No. 1108; SEQ ID No. 1109; SEQ ID No. 1110; SEQ ID No. 1113; SEQ ID No. 1116; SEQ ID No. 1118; SEQ ID No. 1119; SEQ ID No. 1121; SEQ ID No. 1123; SEQ ID No. 1124; SEQ ID No. 1126; SEQ ID No. 1128; SEQ ID No. 1130; SEQ ID No. 1131; SEQ ID No. 1133; SEQ ID No. 1134; SEQ ID No. 1136; SEQ ID No. 1137 and one of their representative fragments.

30 Preferably, the invention relates to a polypeptide according to the invention, characterized in that it is a *Chlamydia pneumoniae* transmembrane polypeptide or one of its respective fragments, having between 4 and 6 transmembrane domains, and in that it is chosen from the polypeptides having the following sequences:

~~SEQ ID No. 5; SEQ ID No. 7; SEQ ID No. 8; SEQ ID No. 15; SEQ ID No. 36; SEQ ID No. 38;~~
35 SEQ ID No. 51; SEQ ID No. 55; SEQ ID No. 58; SEQ ID No. 67; SEQ ID No. 70; SEQ ID No. 81; SEQ ID No. 97; SEQ ID No. 110; SEQ ID No. 111; SEQ ID No. 115; SEQ ID No. 119; SEQ ID No. 126; SEQ ID No. 128; SEQ ID No. 148; SEQ ID No. 155; SEQ ID No. 163; SEQ ID

No. 165; SEQ ID No. 168; SEQ ID No. 169; SEQ ID No. 171; SEQ ID No. 172; SEQ ID No. 174; SEQ ID No. 177; SEQ ID No. 181; SEQ ID No. 193; SEQ ID No. 203; SEQ ID No. 213; SEQ ID No. 214; SEQ ID No. 216; SEQ ID No. 217; SEQ ID No. 221; SEQ ID No. 222; SEQ ID No. 225; SEQ ID No. 229; SEQ ID No. 243; SEQ ID No. 246; SEQ ID No. 248; SEQ ID No. 254; 5 SEQ ID No. 261; SEQ ID No. 285; SEQ ID No. 288; SEQ ID No. 292; SEQ ID No. 296; SEQ ID No. 298; SEQ ID No. 299; SEQ ID No. 301; SEQ ID No. 303; SEQ ID No. 317; SEQ ID No. 328; SEQ ID No. 329; SEQ ID No. 351; SEQ ID No. 354; SEQ ID No. 355; SEQ ID No. 364; SEQ ID No. 371; SEQ ID No. 374; SEQ ID No. 375; SEQ ID No. 391; SEQ ID No. 395; SEQ ID No. 401; SEQ ID No. 403; SEQ ID No. 405; SEQ ID No. 409; SEQ ID No. 414; SEQ ID No. 419; SEQ ID 10 No. 421; SEQ ID No. 423; SEQ ID No. 425; SEQ ID No. 438; SEQ ID No. 448; SEQ ID No. 453; SEQ ID No. 458; SEQ ID No. 466; SEQ ID No. 468; SEQ ID No. 470; SEQ ID No. 480; SEQ ID No. 489; SEQ ID No. 490; SEQ ID No. 496; SEQ ID No. 501; SEQ ID No. 504; SEQ ID No. 505; SEQ ID No. 506; SEQ ID No. 511; SEQ ID No. 513; SEQ ID No. 519; SEQ ID No. 526; SEQ ID No. 532; SEQ ID No. 538; SEQ ID No. 539; SEQ ID No. 547; SEQ ID No. 550; SEQ ID No. 561; 15 SEQ ID No. 568; SEQ ID No. 570; SEQ ID No. 574; SEQ ID No. 578; SEQ ID No. 579; SEQ ID No. 580; SEQ ID No. 582; SEQ ID No. 589; SEQ ID No. 593; SEQ ID No. 598; SEQ ID No. 601; SEQ ID No. 604; SEQ ID No. 610; SEQ ID No. 613; SEQ ID No. 617; SEQ ID No. 626; SEQ ID No. 632; SEQ ID No. 635; SEQ ID No. 638; SEQ ID No. 640; SEQ ID No. 641; SEQ ID No. 646; SEQ ID No. 649; SEQ ID No. 650; SEQ ID No. 651; SEQ ID No. 686; SEQ ID No. 711; SEQ ID 20 No. 724; SEQ ID No. 732; SEQ ID No. 734; SEQ ID No. 744; SEQ ID No. 745; SEQ ID No. 749; SEQ ID No. 751; SEQ ID No. 769; SEQ ID No. 770; SEQ ID No. 771; SEQ ID No. 773; SEQ ID No. 776; SEQ ID No. 779; SEQ ID No. 780; SEQ ID No. 785; SEQ ID No. 787; SEQ ID No. 789; SEQ ID No. 801; SEQ ID No. 805; SEQ ID No. 812; SEQ ID No. 822; SEQ ID No. 825; SEQ ID No. 826; SEQ ID No. 839; SEQ ID No. 841; SEQ ID No. 843; SEQ ID No. 853; SEQ ID No. 861; 25 SEQ ID No. 875; SEQ ID No. 876; SEQ ID No. 886; SEQ ID No. 893; SEQ ID No. 898; SEQ ID No. 906; SEQ ID No. 907; SEQ ID No. 908; SEQ ID No. 920; SEQ ID No. 922; SEQ ID No. 925; SEQ ID No. 933; SEQ ID No. 935; SEQ ID No. 936; SEQ ID No. 944; SEQ ID No. 946; SEQ ID No. 947; SEQ ID No. 954; SEQ ID No. 959; SEQ ID No. 961; SEQ ID No. 966; SEQ ID No. 967; SEQ ID No. 972; SEQ ID No. 978; SEQ ID No. 995; SEQ ID No. 996; SEQ ID No. 1000; SEQ ID 30 No. 1003; SEQ ID No. 1010; SEQ ID No. 1011; SEQ ID No. 1012; SEQ ID No. 1017; SEQ ID No. 1020; SEQ ID No. 1030; SEQ ID No. 1036; SEQ ID No. 1038; SEQ ID No. 1043; SEQ ID No. 1046; SEQ ID No. 1048; SEQ ID No. 1050; SEQ ID No. 1058; SEQ ID No. 1071; SEQ ID No. 1073; SEQ ID No. 1084; SEQ ID No. 1085; SEQ ID No. 1086; SEQ ID No. 1087; SEQ ID No. 1091; SEQ ID No. 1092; SEQ ID No. 1094; SEQ ID No. 1096; SEQ ID No. 1100; SEQ ID 35 No. 1104; SEQ ID No. 1111; SEQ ID No. 1112; SEQ ID No. 1114; SEQ ID No. 1117; SEQ ID No. 1122; SEQ ID No. 1125 and one of their representative fragments.

Preferably, the invention relates to a polypeptide according to the invention,

characterized in that it is a *Chlamydia pneumoniae* transmembrane polypeptide or one of its representative fragments, having at least 7 transmembrane domains, and in that it is chosen from the polypeptides having the following sequences:

SEQ ID No. 17; SEQ ID No. 52; SEQ ID No. 68; SEQ ID No. 83; SEQ ID No. 87; SEQ ID No. 109;
 5 SEQ ID No. 112; SEQ ID No. 113; SEQ ID No. 120; SEQ ID No. 121; SEQ ID No. 127; SEQ ID
 No. 153; SEQ ID No. 204; SEQ ID No. 211; SEQ ID No. 218; SEQ ID No. 223; SEQ ID No. 275;
 SEQ ID No. 277; SEQ ID No. 295; SEQ ID No. 300; SEQ ID No. 302; SEQ ID No. 306; SEQ ID
 No. 327; SEQ ID No. 335; SEQ ID No. 342; SEQ ID No. 343; SEQ ID No. 347; SEQ ID No. 349;
 SEQ ID No. 361; SEQ ID No. 363; SEQ ID No. 369; SEQ ID No. 380; SEQ ID No. 388; SEQ ID
 10 No. 389; SEQ ID No. 397; SEQ ID No. 415; SEQ ID No. 432; SEQ ID No. 439; SEQ ID No. 446;
 SEQ ID No. 449; SEQ ID No. 472; SEQ ID No. 478; SEQ ID No. 500; SEQ ID No. 522; SEQ ID
 No. 524; SEQ ID No. 567; SEQ ID No. 575; SEQ ID No. 602; SEQ ID No. 606; SEQ ID No. 609;
 SEQ ID No. 636; SEQ ID No. 639; SEQ ID No. 643; SEQ ID No. 653; SEQ ID No. 668; SEQ ID
 No. 692; SEQ ID No. 702; SEQ ID No. 704; SEQ ID No. 713; SEQ ID No. 720; SEQ ID No. 778;
 15 SEQ ID No. 784; SEQ ID No. 800; SEQ ID No. 836; SEQ ID No. 838; SEQ ID No. 842; SEQ ID
 No. 864; SEQ ID No. 867; SEQ ID No. 883; SEQ ID No. 901; SEQ ID No. 916; SEQ ID No. 932;
 SEQ ID No. 934; SEQ ID No. 940; SEQ ID No. 942; SEQ ID No. 950; SEQ ID No. 956; SEQ ID
 No. 971; SEQ ID No. 973; SEQ ID No. 976; SEQ ID No. 988; SEQ ID No. 994; SEQ ID No. 1018;
 SEQ ID No. 1028; SEQ ID No. 1035; SEQ ID No. 1037; SEQ ID No. 1044; SEQ ID No. 1055;
 20 SEQ ID No. 1057; SEQ ID No. 1068; SEQ ID No. 1069; SEQ ID No. 1070; SEQ ID No. 1072;
 SEQ ID No. 1082; SEQ ID No. 1088; SEQ ID No. 1105; SEQ ID No. 1132; SEQ ID No. 1135 and
 one of their representative fragments.

Preferably, the invention relates to a polypeptide according to the invention, in that it is a
Chlamydia pneumoniae surface exposed polypeptide or one of its representative fragments, and in that
 25 it is chosen from the polypeptides having the following sequences:

SEQ ID No. 15, SEQ ID No. 25, SEQ ID No. 26, SEQ ID No. 27, SEQ ID No. 28, SEQ ID No. 29,
 SEQ ID No. 30, SEQ ID No. 31, SEQ ID No. 32, SEQ ID No. 33, SEQ ID No. 35, SEQ ID No. 36,
 SEQ ID No. 1257, SEQ ID No. 280, SEQ ID No. 291, SEQ ID No. 314, SEQ ID No. 354, SEQ ID
 No. 380, SEQ ID No. 1266, SEQ ID No. 466, SEQ ID No. 467, SEQ ID No. 468, SEQ ID No. 469,
 30 SEQ ID No. 470, SEQ ID No. 472, SEQ ID No. 474, SEQ ID No. 476, SEQ ID No. 477, SEQ ID No.
 478, SEQ ID No. 479, SEQ ID No. 480, SEQ ID No. 482, SEQ ID No. 483, SEQ ID No. 485, SEQ ID
 No. 486, SEQ ID No. 500, SEQ ID No. 501, SEQ ID No. 503, SEQ ID No. 504, SEQ ID No. 505,
 SEQ ID No. 506, SEQ ID No. 507, SEQ ID No. 1268, SEQ ID No. 1269, SEQ ID No. 543, SEQ ID
 No. 544, SEQ ID No. 578, SEQ ID No. 579, SEQ ID No. 580, SEQ ID No. 581, SEQ ID No. 595,
 35 SEQ ID No. 596, SEQ ID No. 597, SEQ ID No. 1271, SEQ ID No. 633, SEQ ID No. 637, SEQ ID
 No. 699, SEQ ID No. 706, SEQ ID No. 737, SEQ ID No. 744, SEQ ID No. 1273, SEQ ID No. 751,
 SEQ ID No. 775, SEQ ID No. 776, SEQ ID No. 777, SEQ ID No. 793, SEQ ID No. 815, SEQ ID No.

830, SEQ ID No. 1221, SEQ ID No. 849, SEQ ID No. 851, SEQ ID No. 852, SEQ ID No. 874, SEQ ID No. 891, SEQ ID No. 922, SEQ ID No. 940, SEQ ID No. 1231, SEQ ID No. 1281, SEQ ID No. 1035, SEQ ID No. 1079, SEQ ID No. 1087, SEQ ID No. 1108, and one of their representative fragments.

5 Preferably, the invention relates to a polypeptide according to the invention, characterized in that it is a *Chlamydia pneumoniae* lipoprotein or one of its representative fragments, and in that it is chosen from the polypeptides having the following sequences:

SEQ ID No. 3, SEQ ID No. 10, SEQ ID No. 11, SEQ ID No. 16, SEQ ID No. 1254, SEQ ID No. 1255, SEQ ID No. 38, SEQ ID No. 1256, SEQ ID No. 62, SEQ ID No. 85, SEQ ID No. 1258, SEQ ID
10 No. 115, SEQ ID No. 1151, SEQ ID No. 151, SEQ ID No. 1259, SEQ ID No. 173, SEQ ID No. 1261, SEQ ID No. 186, SEQ ID No. 194, SEQ ID No. 205, SEQ ID No. 214, SEQ ID No. 216, SEQ ID No. 217, SEQ ID No. 238, SEQ ID No. 1177, SEQ ID No. 280, SEQ ID No. 291, SEQ ID No. 317, SEQ ID No. 327, SEQ ID No. 354, SEQ ID No. 364, SEQ ID No. 367, SEQ ID No. 414, SEQ ID No. 432, SEQ ID No. 1192, SEQ ID No. 460, SEQ ID No. 1267, SEQ ID No. 1268, SEQ ID No. 520, SEQ ID
15 No. 536, SEQ ID No. 1270, SEQ ID No. 576, SEQ ID No. 597, SEQ ID No. 603, SEQ ID No. 609, SEQ ID No. 637, SEQ ID No. 1272, SEQ ID No. 652, SEQ ID No. 1213, SEQ ID No. 699, SEQ ID No. 705, SEQ ID No. 706, SEQ ID No. 708, SEQ ID No. 711, SEQ ID No. 727, SEQ ID No. 1274, SEQ ID No. 800, SEQ ID No. 814, SEQ ID No. 825, SEQ ID No. 829, SEQ ID No. 830, SEQ ID No. 831, SEQ ID No. 844, SEQ ID No. 849, SEQ ID No. 1275, SEQ ID No. 1276, SEQ ID No. 1277, SEQ
20 ID No. 872, SEQ ID No. 878, SEQ ID No. 880, SEQ ID No. 891, SEQ ID No. 892, SEQ ID No. 1278, SEQ ID No. 1279, SEQ ID No. 1280, SEQ ID No. 941, SEQ ID No. 942, SEQ ID No. 1282, SEQ ID No. 1283, SEQ ID No. 952, SEQ ID No. 988, SEQ ID No. 998, SEQ ID No. 1009, SEQ ID No. 1285, SEQ ID No. 1235, SEQ ID No. 1028, SEQ ID No. 1056, SEQ ID No. 1070, SEQ ID No. 1287, SEQ ID No. 1087, SEQ ID No. 1288, SEQ ID No. 1289, SEQ ID No. 1098, SEQ ID No. 1246, SEQ ID No.
25 1291, SEQ ID No. 1108, SEQ ID No. 1109, SEQ ID No. 1112, SEQ ID No. 1133, and one of their representative fragments.

Preferably, the invention relates to a polypeptide according to the invention, in that it is a *Chlamydia pneumoniae* polypeptide involved in lipopolysaccharide (LPS) biosynthesis, and in that it is chosen from the polypeptides having the following sequences:

30 SEQ ID No. 316, SEQ ID No. 564, SEQ ID No. 610, SEQ ID No. 647, SEQ ID No. 1211, SEQ ID No. 688, SEQ ID No. 924, and one of their representative fragments.

Preferably, the invention relates to additional LPS-related polypeptides according to the invention, in that it is:

(a) a *Chlamydia pneumoniae* KDO (3-deoxy-D-manno-octylosonic acid)-related
35 polypeptide or one of its representative fragments, and in that it is chosen from the polypeptides having the following sequences: SEQ ID No. 177, SEQ ID No. 1156, SEQ ID No. 245, SEQ ID No. 767, and one of their representative fragments;

(b) a *Chlamydia pneumoniae* phosphomannomutase-related polypeptide or one of its representative fragments, and in that it is chosen from the polypeptides having the following sequences: SEQ ID No. 74, and its representative fragment;

(c) a *Chlamydia pneumoniae* phosphoglucosyltransferase-related polypeptide or one of its representative fragments, and in that it is chosen from the polypeptides having the following sequences: SEQ ID No. 1286, SEQ ID No. 1039, and its representative fragment; and

(d) a *Chlamydia pneumoniae* lipid A component-related polypeptide or one of its representative fragments, and in that it is chosen from the polypeptides having the following sequences: SEQ ID No. 689, SEQ ID No. 690, SEQ ID No. 691, SEQ ID No. 1037, and one of their representative fragments.

Preferably, the invention relates to a polypeptide according to the invention, in that it is a *Chlamydia pneumoniae* polypeptide or one of its representative fragments that contains an RGD sequence and is also an outer membrane protein, and in that it is chosen from the polypeptides having the following sequences: SEQ ID No. 468 and its representative fragments.

Preferably, the invention relates to a polypeptide according to the invention, in that it is a *Chlamydia pneumoniae* polypeptide or one of its representative fragments that contains an RGD sequence that shows homology to *cds1*, *cds2*, and *copN* type III virulence loci in *Chlamydia Psitacci*, and in that it is chosen from the polypeptides having the following sequences: SEQ ID No. 350 and its representative fragments.

Preferably, the invention relates to a polypeptide according to the invention, in that it is a *Chlamydia pneumoniae* polypeptide or one of its representative fragments that is cysteine-rich and contains RGD sequence, and in that it is chosen from the polypeptides having the following sequences: SEQ ID No. 1290, SEQ ID No. 6846, SEQ ID No. 6848, and one of their representative fragments.

Preferably, the invention relates to a polypeptide according to the invention, in that it is a *Chlamydia pneumoniae* outer membrane polypeptide that contains cysteines in their first 30 amino acids and also contain an RGD sequence, and in that it is chosen from the polypeptides having the following sequences:

SEQ ID No. 105, SEQ ID No. 106, SEQ ID No. 114, SEQ ID No. 170, SEQ ID No. 171, SEQ ID No. 1264, SEQ ID No. 268, SEQ ID No. 1265, SEQ ID No. 350, SEQ ID No. 393, SEQ ID No. 394, SEQ ID No. 451, SEQ ID No. 452, SEQ ID No. 453, SEQ ID No. 473, SEQ ID No. 499, SEQ ID No. 515, SEQ ID No. 519, SEQ ID No. 525, SEQ ID No. 526, SEQ ID No. 538, SEQ ID No. 611, SEQ ID No. 645, SEQ ID No. 686, SEQ ID No. 700, SEQ ID No. 746, SEQ ID No. 755, SEQ ID No. 756, SEQ ID No. 757, SEQ ID No. 789, SEQ ID No. 814, SEQ ID No. 855, SEQ ID No. 856, SEQ ID No. 878, SEQ ID No. 957, SEQ ID No. 958, SEQ ID No. 989, SEQ ID No. 1290, and one of their representative fragments.

Preferably, the invention relates to a polypeptide according to the invention, in that it is a

Chlamydia pneumoniae polypeptide or one of its representative fragments that contains RGD sequences homologous to *Chlamydia trachomatis* polypeptides containing RGD sequences, and in that it is chosen from the polypeptides having the following sequences:

SEQ ID No. 114, SEQ ID No. 468, SEQ ID No. 755, SEQ ID No. 756, SEQ ID No. 757, SEQ ID No. 855, SEQ ID No. 856, SEQ ID No. 905, SEQ ID No. 913, SEQ ID No. 914, SEQ ID No. 915, and one of their representative fragments.

Preferably, the invention relates to a polypeptide according to the invention, in that it is a *Chlamydia pneumoniae* Type III and non-Type III secreted polypeptide or one of its representative fragments, and in that it is chosen from the polypeptides having the following sequences:

10 SEQ ID No. 25, SEQ ID No. 28, SEQ ID No. 29, SEQ ID No. 33, SEQ ID No. 308, SEQ ID No. 309, SEQ ID No. 343, SEQ ID No. 344, SEQ ID No. 345, SEQ ID No. 367, SEQ ID No. 414, SEQ ID No. 415, SEQ ID No. 480, SEQ ID No. 550, SEQ ID No. 579, SEQ ID No. 580, SEQ ID No. 581, SEQ ID No. 597, SEQ ID No. 699, SEQ ID No. 744, SEQ ID No. 751, SEQ ID No. 776, SEQ ID No. 866, SEQ ID No. 874, SEQ ID No. 883, SEQ ID No. 884, SEQ ID No. 888, SEQ ID No. 891, SEQ ID No. 6845, and one of their representative fragments.

Preferably, the invention relates to a polypeptide according to the invention, in that it is a *Chlamydia pneumoniae* cell wall anchored surface polypeptide or one of its representative fragments, and in that it is chosen from the polypeptides having the following sequences:

SEQ ID No. 267, SEQ ID No. 271, SEQ ID No. 419, SEQ ID No. 590, SEQ ID No. 932, SEQ ID No. 6844, SEQ ID No. 6847, and one of their representative fragments.

Preferably, the invention relates to a polypeptide according to the invention, in that it is a *Chlamydia pneumoniae* polypeptide or one of its representative fragments not found in *Chlamydia trachomatis* (Blastp $P > e^{-10}$), and in that it is chosen from the polypeptides having the following sequences:

25 SEQ ID No. 7, SEQ ID No. 8, SEQ ID No. 9, SEQ ID No. 16, SEQ ID No. 17, SEQ ID No. 18, SEQ ID No. 19, SEQ ID No. 20, SEQ ID No. 21, SEQ ID No. 22, SEQ ID No. 1254, SEQ ID No. 23, SEQ ID No. 1255, SEQ ID No. 24, SEQ ID No. 1139, SEQ ID No. 1140, SEQ ID No. 46, SEQ ID No. 47, SEQ ID No. 51, SEQ ID No. 60, SEQ ID No. 1256, SEQ ID No. 61, SEQ ID No. 62, SEQ ID No. 63, SEQ ID No. 64, SEQ ID No. 1257, SEQ ID No. 65, SEQ ID No. 66, SEQ ID No. 67, SEQ ID No. 68, 30 SEQ ID No. 1143, SEQ ID No. 1145, SEQ ID No. 83, SEQ ID No. 84, SEQ ID No. 1146, SEQ ID No. 85, SEQ ID No. 86, SEQ ID No. 87, SEQ ID No. 1258, SEQ ID No. 116, SEQ ID No. 117, SEQ ID No. 125, SEQ ID No. 1148, SEQ ID No. 143, SEQ ID No. 1150, SEQ ID No. 1151, SEQ ID No. 144, SEQ ID No. 145, SEQ ID No. 147, SEQ ID No. 148, SEQ ID No. 149, SEQ ID No. 150, SEQ ID No. 152, SEQ ID No. 1259, SEQ ID No. 162, SEQ ID No. 166, SEQ ID No. 1154, SEQ ID No. 167, 35 SEQ ID No. 1261, SEQ ID No. 1156, SEQ ID No. 1157, SEQ ID No. 178, SEQ ID No. 179, SEQ ID No. 1158, SEQ ID No. 182, SEQ ID No. 183, SEQ ID No. 184, SEQ ID No. 185, SEQ ID No. 1159, SEQ ID No. 186, SEQ ID No. 1160, SEQ ID No. 187, SEQ ID No. 188, SEQ ID No. 189, SEQ ID

No. 190, SEQ ID No. 1161, SEQ ID No. 1162, SEQ ID No. 191, SEQ ID No. 192, SEQ ID No. 194, SEQ ID No. 195, SEQ ID No. 1163, SEQ ID No. 196, SEQ ID No. 201, SEQ ID No. 202, SEQ ID No. 209, SEQ ID No. 212, SEQ ID No. 221, SEQ ID No. 224, SEQ ID No. 1167, SEQ ID No. 226, SEQ ID No. 227, SEQ ID No. 228, SEQ ID No. 229, SEQ ID No. 230, SEQ ID No. 231, SEQ ID No. 232, SEQ ID No. 1169, SEQ ID No. 1170, SEQ ID No. 1171, SEQ ID No. 234, SEQ ID No. 235, SEQ ID No. 236, SEQ ID No. 1172, SEQ ID No. 243, SEQ ID No. 251, SEQ ID No. 252, SEQ ID No. 1176, SEQ ID No. 253, SEQ ID No. 255, SEQ ID No. 254, SEQ ID No. 256, SEQ ID No. 1177, SEQ ID No. 1178, SEQ ID No. 262, SEQ ID No. 263, SEQ ID No. 1264, SEQ ID No. 278, SEQ ID No. 279, SEQ ID No. 1180, SEQ ID No. 280, SEQ ID No. 290, SEQ ID No. 291, SEQ ID No. 292, SEQ ID No. 296, SEQ ID No. 1181, SEQ ID No. 297, SEQ ID No. 298, SEQ ID No. 300, SEQ ID No. 1265, SEQ ID No. 322, SEQ ID No. 324, SEQ ID No. 325, SEQ ID No. 370, SEQ ID No. 1186, SEQ ID No. 371, SEQ ID No. 372, SEQ ID No. 1187, SEQ ID No. 373, SEQ ID No. 378, SEQ ID No. 1266, SEQ ID No. 382, SEQ ID No. 383, SEQ ID No. 384, SEQ ID No. 385, SEQ ID No. 386, SEQ ID No. 1188, SEQ ID No. 1189, SEQ ID No. 391, SEQ ID No. 392, SEQ ID No. 398, SEQ ID No. 400, SEQ ID No. 403, SEQ ID No. 1191, SEQ ID No. 423, SEQ ID No. 435, SEQ ID No. 445, SEQ ID No. 450, SEQ ID No. 1193, SEQ ID No. 456, SEQ ID No. 460, SEQ ID No. 461, SEQ ID No. 465, SEQ ID No. 1196, SEQ ID No. 471, SEQ ID No. 473, SEQ ID No. 475, SEQ ID No. 481, SEQ ID No. 484, SEQ ID No. 487, SEQ ID No. 488, SEQ ID No. 489, SEQ ID No. 490, SEQ ID No. 491, SEQ ID No. 492, SEQ ID No. 493, SEQ ID No. 494, SEQ ID No. 495, SEQ ID No. 496, SEQ ID No. 497, SEQ ID No. 498, SEQ ID No. 499, SEQ ID No. 502, SEQ ID No. 1267, SEQ ID No. 1268, SEQ ID No. 508, SEQ ID No. 510, SEQ ID No. 509, SEQ ID No. 512, SEQ ID No. 515, SEQ ID No. 519, SEQ ID No. 1197, SEQ ID No. 521, SEQ ID No. 1198, SEQ ID No. 522, SEQ ID No. 524, SEQ ID No. 528, SEQ ID No. 534, SEQ ID No. 537, SEQ ID No. 1269, SEQ ID No. 1270, SEQ ID No. 548, SEQ ID No. 551, SEQ ID No. 557, SEQ ID No. 1201, SEQ ID No. 1203, SEQ ID No. 562, SEQ ID No. 566, SEQ ID No. 593, SEQ ID No. 595, SEQ ID No. 600, SEQ ID No. 1271, SEQ ID No. 604, SEQ ID No. 611, SEQ ID No. 612, SEQ ID No. 614, SEQ ID No. 616, SEQ ID No. 625, SEQ ID No. 627, SEQ ID No. 628, SEQ ID No. 629, SEQ ID No. 631, SEQ ID No. 641, SEQ ID No. 1272, SEQ ID No. 648, SEQ ID No. 1212, SEQ ID No. 663, SEQ ID No. 685, SEQ ID No. 707, SEQ ID No. 714, SEQ ID No. 715, SEQ ID No. 716, SEQ ID No. 717, SEQ ID No. 722, SEQ ID No. 746, SEQ ID No. 1273, SEQ ID No. 761, SEQ ID No. 764, SEQ ID No. 770, SEQ ID No. 1217, SEQ ID No. 783, SEQ ID No. 1274, SEQ ID No. 803, SEQ ID No. 815, SEQ ID No. 1220, SEQ ID No. 835, SEQ ID No. 1221, SEQ ID No. 844, SEQ ID No. 845, SEQ ID No. 846, SEQ ID No. 847, SEQ ID No. 848, SEQ ID No. 849, SEQ ID No. 850, SEQ ID No. 851, SEQ ID No. 1275, SEQ ID No. 852, SEQ ID No. 862, ~~SEQ ID No. 1276, SEQ ID No. 1277, SEQ ID No. 873, SEQ ID No. 1223, SEQ ID No. 892, SEQ ID~~ No. 919, SEQ ID No. 1225, SEQ ID No. 1278, SEQ ID No. 926, SEQ ID No. 1228, SEQ ID No. 1229, SEQ ID No. 1230, SEQ ID No. 1279, SEQ ID No. 1281, SEQ ID No. 1282, SEQ ID No. 1283, SEQ ID No. 948, SEQ ID No. 950, SEQ ID No. 949, SEQ ID No. 951, SEQ ID No. 980, SEQ ID No.

982, SEQ ID No. 1233, SEQ ID No. 999, SEQ ID No. 1000, SEQ ID No. 1001, SEQ ID No. 1002, SEQ ID No. 1008, SEQ ID No. 1285, SEQ ID No. 1235, SEQ ID No. 1016, SEQ ID No. 1019, SEQ ID No. 1027, SEQ ID No. 1036, SEQ ID No. 1241, SEQ ID No. 1048, SEQ ID No. 1049, SEQ ID No. 1050, SEQ ID No. 1053, SEQ ID No. 1054, SEQ ID No. 1064, SEQ ID No. 1076, SEQ ID No. 1091, 5 SEQ ID No. 1288, SEQ ID No. 1093, SEQ ID No. 1289, SEQ ID No. 1101, SEQ ID No. 1103, SEQ ID No. 1245, SEQ ID No. 1246, SEQ ID No. 1247, SEQ ID No. 1290, SEQ ID No. 1291, SEQ ID No. 1115, SEQ ID No. 1116, SEQ ID No. 1118, SEQ ID No. 1120, SEQ ID No. 1249, SEQ ID No. 1121, SEQ ID No. 1250, SEQ ID No. 1126, SEQ ID No. 1251, SEQ ID No. 1127, SEQ ID No. 1128, SEQ ID No. 1130, SEQ ID No. 1129, SEQ ID No. 1131, SEQ ID No. 1136, SEQ ID No. 1253, SEQ ID No. 10 6844, SEQ ID No. 6846, SEQ ID No. 6847, SEQ ID No. 6848, and one of their representative fragments

Preferably, the invention relates to a polypeptide according to the invention, characterized in that it is a *Chlamydia pneumoniae* polypeptide or one of its representative fragments which is involved in the intermediate metabolism, in particular in the metabolism of sugars and/or of 15 cofactors, and in that it is chosen from the polypeptides having the following sequences:

SEQ ID No. 2; SEQ ID No. 55; SEQ ID No. 56; SEQ ID No. 69; SEQ ID No. 75; SEQ ID No. 80; SEQ ID No. 100; SEQ ID No. 110; SEQ ID No. 114; SEQ ID No. 120; SEQ ID No. 121; SEQ ID No. 157; SEQ ID No. 160; SEQ ID No. 161; SEQ ID No. 172; SEQ ID No. 180; SEQ ID No. 181; SEQ ID No. 198; SEQ ID No. 200; SEQ ID No. 225; SEQ ID No. 248; SEQ ID No. 249; SEQ ID 20 No. 276; SEQ ID No. 277; SEQ ID No. 318; SEQ ID No. 319; SEQ ID No. 320; SEQ ID No. 323; SEQ ID No. 331; SEQ ID No. 347; SEQ ID No. 375; SEQ ID No. 376; SEQ ID No. 381; SEQ ID No. 393; SEQ ID No. 394; SEQ ID No. 395; SEQ ID No. 396; SEQ ID No. 409; SEQ ID No. 446; SEQ ID No. 447; SEQ ID No. 448; SEQ ID No. 449; SEQ ID No. 513; SEQ ID No. 516; SEQ ID No. 571; SEQ ID No. 647; SEQ ID No. 662; SEQ ID No. 697; SEQ ID No. 718; SEQ ID No. 793; 25 SEQ ID No. 794; SEQ ID No. 808; SEQ ID No. 809; SEQ ID No. 838; SEQ ID No. 839; SEQ ID No. 840; SEQ ID No. 853; SEQ ID No. 854; SEQ ID No. 918; SEQ ID No. 923; SEQ ID No. 929; SEQ ID No. 931; SEQ ID No. 938; SEQ ID No. 939; SEQ ID No. 958; SEQ ID No. 959; SEQ ID No. 960; SEQ ID No. 966; SEQ ID No. 995; SEQ ID No. 1021; SEQ ID No. 1040; SEQ ID No. 1041; SEQ ID No. 1042; SEQ ID No. 1085; SEQ ID No. 1100; SEQ ID No. 1102; SEQ ID 30 No. 1117; SEQ ID No. 1118; SEQ ID No. 1119; SEQ ID No. 1120; SEQ ID No. 1135 and one of their representative fragments.

Preferably, the invention relates to a polypeptide according to the invention, characterized in that it is a *Chlamydia pneumoniae* polypeptide or one of its representative fragments which is involved in the intermediate metabolism of nucleotides or nucleic acids, and in that it is 35 chosen from the polypeptides having the following sequences:

SEQ ID No. 77; SEQ ID No. 78; SEQ ID No. 138; SEQ ID No. 189; SEQ ID No. 190; SEQ ID No. 233; SEQ ID No. 246; SEQ ID No. 338; SEQ ID No. 412; SEQ ID No. 421; SEQ ID No. 438;

SEQ ID No. 607; SEQ ID No. 648; SEQ ID No. 657; SEQ ID No. 740; SEQ ID No. 783; SEQ ID No. 967; SEQ ID No. 989; SEQ ID No. 990; SEQ ID No. 992; SEQ ID No. 1011; SEQ ID No. 1058; SEQ ID No. 1059; SEQ ID No. 1073; SEQ ID No. 1074 and one of their representative fragments.

5 Preferably, the invention relates to a polypeptide according to the invention, characterized in that it is a *Chlamydia pneumoniae* polypeptide or one of its representative fragments which is involved in the metabolism of nucleic acids, and in that it is chosen from the polypeptides having the following sequences:

SEQ ID No. 14; SEQ ID No. 59; SEQ ID No. 70; SEQ ID No. 71; SEQ ID No. 97; SEQ ID
10 No. 113; SEQ ID No. 137; SEQ ID No. 141; SEQ ID No. 169; SEQ ID No. 285; SEQ ID No. 287;
SEQ ID No. 288; SEQ ID No. 313; SEQ ID No. 326; SEQ ID No. 358; SEQ ID No. 411; SEQ ID
No. 443; SEQ ID No. 548; SEQ ID No. 569; SEQ ID No. 601; SEQ ID No. 651; SEQ ID No. 654;
SEQ ID No. 658; SEQ ID No. 659; SEQ ID No. 664; SEQ ID No. 665; SEQ ID No. 694; SEQ ID
No. 698; SEQ ID No. 704; SEQ ID No. 760; SEQ ID No. 762; SEQ ID No. 763; SEQ ID No. 786;
15 SEQ ID No. 787; SEQ ID No. 788; SEQ ID No. 801; SEQ ID No. 802; SEQ ID No. 812; SEQ ID
No. 819; SEQ ID No. 822; SEQ ID No. 870; SEQ ID No. 897; SEQ ID No. 898; SEQ ID No. 902;
SEQ ID No. 908; SEQ ID No. 916; SEQ ID No. 954; SEQ ID No. 955; SEQ ID No. 961; SEQ ID
No. 983; SEQ ID No. 996; SEQ ID No. 1007; SEQ ID No. 1012; SEQ ID No. 1013; SEQ ID
No. 1014; SEQ ID No. 1015; SEQ ID No. 1038; SEQ ID No. 1137 and one of their representative
20 fragments.

Preferably, the invention relates to a polypeptide according to the invention, characterized in that it is a *Chlamydia pneumoniae* polypeptide or one of its representative fragments which is involved in the metabolism of amino acids or polypeptides, and in that it is chosen from the polypeptides having the following sequences:

25 SEQ ID No. 99; SEQ ID No. 111; SEQ ID No. 127; SEQ ID No. 134; SEQ ID No. 140; SEQ ID
No. 174; SEQ ID No. 175; SEQ ID No. 176; SEQ ID No. 353; SEQ ID No. 377; SEQ ID No. 404;
SEQ ID No. 523; SEQ ID No. 539; SEQ ID No. 559; SEQ ID No. 561; SEQ ID No. 586; SEQ ID
No. 598; SEQ ID No. 609; SEQ ID No. 636; SEQ ID No. 687; SEQ ID No. 700; SEQ ID No. 701;
SEQ ID No. 759; SEQ ID No. 790; SEQ ID No. 857; SEQ ID No. 861; SEQ ID No. 904; SEQ ID
30 No. 936; SEQ ID No. 952; SEQ ID No. 962; SEQ ID No. 963; SEQ ID No. 964; SEQ ID No. 965;
SEQ ID No. 991; SEQ ID No. 1003; SEQ ID No. 1004; SEQ ID No. 1005; SEQ ID No. 1018;
SEQ ID No. 1067; SEQ ID No. 1110; SEQ ID No. 1111; SEQ ID No. 1112; SEQ ID No. 1114;
SEQ ID No. 1121; SEQ ID No. 1122; SEQ ID No. 1123; SEQ ID No. 1124; SEQ ID No. 1125 and
one of their representative fragments.

35 Preferably, the invention relates to a polypeptide according to the invention, characterized in that it is a *Chlamydia pneumoniae* polypeptide or one of its representative fragments which is involved in the metabolism of polypeptides, and in that it is chosen from the polypeptides

having the following sequences:

SEQ ID No. 4; SEQ ID No. 44; SEQ ID No. 45; SEQ ID No. 48; SEQ ID No. 54; SEQ ID No. 112; SEQ ID No. 130; SEQ ID No. 155; SEQ ID No. 163; SEQ ID No. 212; SEQ ID No. 257; SEQ ID No. 307; SEQ ID No. 343; SEQ ID No. 405; SEQ ID No. 416; SEQ ID No. 458; SEQ ID
5 No. 540; SEQ ID No. 541; SEQ ID No. 542; SEQ ID No. 543; SEQ ID No. 544; SEQ ID No. 560; SEQ ID No. 594; SEQ ID No. 652; SEQ ID No. 699; SEQ ID No. 723; SEQ ID No. 747; SEQ ID No. 817; SEQ ID No. 827; SEQ ID No. 871; SEQ ID No. 909; SEQ ID No. 910; SEQ ID No. 911; SEQ ID No. 912; SEQ ID No. 1023; SEQ ID No. 1051; SEQ ID No. 1052; SEQ ID No. 1081 and one of their representative fragments.

10 Preferably, the invention relates to a polypeptide according to the invention, characterized in that it is a *Chlamydia pneumoniae* polypeptide or one of its representative fragments which is involved in the metabolism of fatty acids, and in that it is chosen from the polypeptides having the following sequences:

SEQ ID No. 76; SEQ ID No. 284; SEQ ID No. 308; SEQ ID No. 309; SEQ ID No. 310; SEQ ID
15 No. 311; SEQ ID No. 312; SEQ ID No. 425; SEQ ID No. 433; SEQ ID No. 565; SEQ ID No. 688; SEQ ID No. 690; SEQ ID No. 691; SEQ ID No. 767; SEQ ID No. 797; SEQ ID No. 894; SEQ ID No. 895; SEQ ID No. 994; SEQ ID No. 1020; SEQ ID No. 1030; SEQ ID No. 1033; SEQ ID No. 1034; SEQ ID No. 1046; SEQ ID No. 1047; SEQ ID No. 1057 and one of their representative fragments.

20 Preferably, the invention relates to a polypeptide according to the invention, characterized in that it is a *Chlamydia pneumoniae* polypeptide or one of its representative fragments which is involved in the synthesis of the wall, and in that it is chosen from the polypeptides having the following sequences:

SEQ ID No. 49; SEQ ID No. 50; SEQ ID No. 177; SEQ ID No. 178; SEQ ID No. 245; SEQ ID
25 No. 610; SEQ ID No. 972; SEQ ID No. 974; SEQ ID No. 978; SEQ ID No. 1037 and one of their representative fragments.

Preferably, the invention relates to a polypeptide according to the invention, characterized in that it is a *Chlamydia pneumoniae* polypeptide or one of its representative fragments which is involved in the transcription, translation and/or maturation process, and in that it is chosen
30 from the polypeptides having the following sequences:

SEQ ID No. 90; SEQ ID No. 92; SEQ ID No. 131; SEQ ID No. 151; SEQ ID No. 199; SEQ ID No. 333; SEQ ID No. 334; SEQ ID No. 336; SEQ ID No. 379; SEQ ID No. 589; SEQ ID No. 590; SEQ ID No. 619; SEQ ID No. 630; SEQ ID No. 649; SEQ ID No. 739; SEQ ID No. 741; SEQ ID No. 806; SEQ ID No. 821; SEQ ID No. 843; SEQ ID No. 968; SEQ ID No. 971; SEQ ID No. 1061
35 and one of their representative fragments.

Preferably, the invention relates to a polypeptide according to the invention, characterized in that it is a *Chlamydia pneumoniae* ribosomal polypeptide or one of its representative

fragments, and in that it is chosen from the polypeptides having the following sequences:
SEQ ID No. 93; SEQ ID No. 94; SEQ ID No. 95; SEQ ID No. 136; SEQ ID No. 259; SEQ ID
No. 332; SEQ ID No. 348; SEQ ID No. 583; SEQ ID No. 584; SEQ ID No. 588; SEQ ID No. 591;
SEQ ID No. 592; SEQ ID No. 663; SEQ ID No. 666; SEQ ID No. 667; SEQ ID No. 669; SEQ ID
5 No. 670; SEQ ID No. 671; SEQ ID No. 672; SEQ ID No. 673; SEQ ID No. 674; SEQ ID No. 675;
SEQ ID No. 676; SEQ ID No. 677; SEQ ID No. 678; SEQ ID No. 679; SEQ ID No. 680; SEQ ID
No. 681; SEQ ID No. 683; SEQ ID No. 684; SEQ ID No. 738; SEQ ID No. 781; SEQ ID No. 1008;
SEQ ID No. 1024; SEQ ID No. 1025; SEQ ID No. 1066 and one of their representative fragments.

Preferably, the invention also relates to a polypeptide according to the invention,
10 characterized in that it is a *Chlamydia pneumoniae* transport polypeptide or one of its representative
fragments, and in that it is chosen from the polypeptides having the following sequences:

SEQ ID No. 40; SEQ ID No. 41; SEQ ID No. 52; SEQ ID No. 105; SEQ ID No. 106; SEQ ID
No. 107; SEQ ID No. 109; SEQ ID No. 133; SEQ ID No. 210; SEQ ID No. 211; SEQ ID No. 214;
SEQ ID No. 215; SEQ ID No. 216; SEQ ID No. 217; SEQ ID No. 218; SEQ ID No. 219; SEQ ID
15 No. 220; SEQ ID No. 223; SEQ ID No. 242; SEQ ID No. 260; SEQ ID No. 293; SEQ ID No. 299;
SEQ ID No. 366; SEQ ID No. 369; SEQ ID No. 575; SEQ ID No. 602; SEQ ID No. 638; SEQ ID
No. 639; SEQ ID No. 640; SEQ ID No. 643; SEQ ID No. 653; SEQ ID No. 702; SEQ ID No. 703;
SEQ ID No. 724; SEQ ID No. 732; SEQ ID No. 855; SEQ ID No. 856; SEQ ID No. 901; SEQ ID
No. 906; SEQ ID No. 933; SEQ ID No. 942; SEQ ID No. 1043; SEQ ID No. 1086; SEQ ID
20 No. 1105 and one of their representative fragments.

Preferably, the invention relates to a polypeptide according to the invention,
characterized in that it is a *Chlamydia pneumoniae* polypeptide or one of its representative fragments
which is involved in the virulence process, and in that it is chosen from the polypeptides having the
following sequences:

25 SEQ ID No. 546; SEQ ID No. 550; SEQ ID No. 778; SEQ ID No. 779; SEQ ID No. 886 and one
of their representative fragments.

Preferably, the invention relates to a polypeptide according to the invention,
characterized in that it is a *Chlamydia pneumoniae* polypeptide or one of its representative fragments
which is involved in the secretory system and/or which is secreted, and in that it is chosen from the
30 polypeptides having the following sequences:

SEQ ID No. 751; SEQ ID No. 874; SEQ ID No. 875; SEQ ID No. 876; SEQ ID No. 883; SEQ ID
No. 884; SEQ ID No. 885 and one of their representative fragments.

The secreted polypeptides, including the Type III and other, non-Type III secreted
polypeptides, of the present invention, as well as the corresponding nucleotide sequences, may be
35 detected by techniques known to persons skilled in the art, such as for example the techniques using
cloning combined with vectors allowing the expression of the said polypeptides fused to export
markers such as the *luc* gene for luciferase or the *PhoA* gene for alkaline phosphatase.

Preferably, the invention relates to a polypeptide according to the invention, characterized in that it is a polypeptide specific to *Chlamydia pneumoniae* or one of its representative fragments (with a Blast E value of $>10^{-5}$), and in that it is chosen from the polypeptides having the following sequences:

- 5 SEQ ID No. 7; SEQ ID No. 8; SEQ ID No. 17; SEQ ID No. 18; SEQ ID No. 19; SEQ ID No. 20; SEQ ID No. 22; SEQ ID No. 23; SEQ ID No. 24; SEQ ID No. 51; SEQ ID No. 60; SEQ ID No. 63; SEQ ID No. 65; SEQ ID No. 66; SEQ ID No. 67; SEQ ID No. 83; SEQ ID No. 84; SEQ ID No. 86; SEQ ID No. 87; SEQ ID No. 125; SEQ ID No. 143; SEQ ID No. 144; SEQ ID No. 179; SEQ ID No. 182; SEQ ID No. 184; SEQ ID No. 185; SEQ ID No. 187; SEQ ID No. 221;
10 SEQ ID No. 252; SEQ ID No. 254;; SEQ ID No. 278; SEQ ID No. 279; SEQ ID No. 387; SEQ ID No. 388; SEQ ID No. 397; SEQ ID No. 1048; SEQ ID No. 1049; SEQ ID No. 1050; SEQ ID No. 1128; SEQ ID No. 1130; SEQ ID No. 1131 and one of their representative fragments.

In general, in the present invention, the functional group to which a polypeptide of the invention belongs, as well as its corresponding nucleotide sequence, may be determined either by
15 comparative analogy with sequences already known, or by the use of standard techniques of biochemistry, of cytology combined with the techniques of genetic engineering such as immunoaffinity, localization by immunolabelling, differential extraction, measurement of enzymatic activity, study of the activity inducing or repressing expression or the study of expression in *E. coli*.

It is clearly understood, on the one hand, that, in the present invention, the nucleotide
20 sequences (ORF) and the amino acid sequences (SEQ ID No. 2 to SEQ ID No. 1291 and SEQ ID No. 6844 to SEQ ID No. 6848) which are listed by functional group, are not exhaustive within the group considered. Moreover, it is also clearly understood that, in the present invention, a nucleotide sequence (ORF) or an amino acid sequence mentioned within a given functional group may also be part of another group taking into account, for example, the interrelationship between the groups listed.
25 Accordingly, and as an example of this interrelationship, an exported and/or secreted polypeptide as well as its coding nucleotide sequence may also be involved in the *Chlamydia pneumoniae* virulence process by modifying the defense mechanism of the infected host cell, or a transmembrane polypeptide or its coding nucleotide sequence is also part of the polypeptides or coding nucleotide sequences of the cellular envelope.

30 The subject of the present invention is also the nucleotide and/or polypeptide sequences according to the invention, characterized in that the said sequences are recorded on a medium, called recording medium, whose type and nature facilitate the reading, the analysis and the exploitation of the said sequences. These media may of course also contain other information extracted from the present invention, such as in particular the analogies with already known sequences, such as those
35 mentioned in Table 1 of the present description, and/or may contain, in addition, information relating to the nucleotide and/or polypeptide sequences of other microorganisms so as to facilitate the comparative analysis and the exploitation of the results obtained.

Among these recording media, computer-readable media, such as magnetic, optical, electrical and hybrid media such as, for example, floppy disks, CD-ROMs or recording cassettes, are preferred in particular.

The invention also relates to nucleotide sequences which can be used as primer or probe, characterized in that the said sequences are chosen from the nucleotide sequences according to the invention.

The invention relates, in addition, to the use of a nucleotide sequence according to the invention, as primer or probe, for the detection and/or amplification of nucleic acid sequences.

The nucleotide sequences according to the invention may thus be used to amplify nucleotide sequences, in particular by the PCR technique (polymerase chain reaction) (Erich, 1989; Innis et al., 1990; Rolfs et al., 1991, and White et al., 1997).

These oligodeoxyribonucleotide or oligoribonucleotide primers correspond to representative nucleotide fragments, and are advantageously at least 8 nucleotides, preferably at least 12 nucleotides, 15 nucleotides and still more preferably at least 20 nucleotides long.

Other techniques for amplifying the target nucleic acid may be advantageously used as alternatives to PCR.

The nucleotide sequences of the invention, in particular the primers according to the invention, may also be used in other methods for amplifying a target nucleic acid, such as:

- the TAS (Transcription-based Amplification System) technique described by Kwoh et al. in 1989;
- the 3SR (Self-Sustained Sequence Replication) technique described by Guatelli et al. in 1990;
- the NASBA (Nucleic Acid Sequence Based Amplification) technique described by Kievitis et al. in 1991;
- the SDA (Strand Displacement Amplification) technique (Walker et al., 1992);
- the TMA (Transcription Mediated Amplification) technique.

The polynucleotides of the invention may also be used in techniques for amplifying or for modifying the nucleic acid serving as probe, such as:

- the LCR (Ligase Chain Reaction) technique described by Landegren et al. in 1988 and perfected by Barany et al. in 1991, which uses a thermostable ligase;
- the RCR (Repair Chain Reaction) technique described by Segev in 1992;
- the CPR (Cycling Probe Reaction) technique described by Duck et al. in 1990;
- the Q-beta-replicase amplification technique described by Miele et al. in 1983 and perfected in particular by Chu et al. in 1986, Lizardi et al. in 1988, and then by Burg et al. as well as by Stone et al. in 1996.

~~The invention also relates to the nucleotide sequences of fragments which can be~~
obtained by amplification with the aid of at least one primer according to the invention. The present invention encompasses both hybridization probes and primers. In general, the complementary probes should be of a length sufficient to form a stable hybrid complex with the target sequences. Primers,

while complementary to the target sequences need not form stable hybridization complexes with the target sequences alone. Rather, primers form stable complexes with the target sequences in the presence of polymerase to permit extension of the primer.

In the case where the target polynucleotide to be detected is possibly an RNA, for example an mRNA, it will be possible to use, prior to the use of an amplification reaction with the aid of at least one primer according to the invention or to the use of a method of detection with the aid of at least one probe of the invention, a reverse transcriptase-type enzyme so as to obtain a cDNA from the RNA contained in the biological sample. The cDNA obtained will then serve as target for the primer(s) or the probe(s) used in the amplification or detection method according to the invention.

10 The detection probe will be chosen so that it hybridizes with the target sequence or the amplicon generated from the target sequence. Such a detection probe will advantageously have as sequence a sequence of at least 12 nucleotides, in particular of at least 20 nucleotides, and preferably at least 100 nucleotides.

The invention also comprises the nucleotide sequences which can be used as probe or primer according to the invention, characterized in that they are labelled with a radioactive compound or with a nonradioactive compound.

The nonlabelled nucleotide sequences may be used directly as probes or primers; however, the sequences are generally labelled with a radioactive element (^{32}P , ^{35}S , ^3H , ^{125}I) or with a nonradioactive molecule (biotin, acetylaminofluorene, digoxigenin, 5-bromo-deoxyuridine, fluorescein) so as to obtain probes which can be used in numerous applications.

20 Examples of nonradioactive labelling of nucleotide sequences are described, for example, in French patent No. 78,10975 or by Urdea et al. or by Sanchez-Pescador et al. in 1988.

In the latter case, one of the labelling methods described in patents FR-2 422 956 and FR-2 518 755 may also be used.

25 The invention also relates to the nucleotide sequences of fragments which can be obtained by hybridization with the aid of at least one probe according to the invention.

The hybridization technique may be performed in various ways (Matthews et al., 1988). The most common method consists in immobilizing the nucleic acid extracted from *Chlamydia pneumoniae* cells on a support (such as nitrocellulose, nylon, polystyrene) and in incubating, under well-defined conditions, the target nucleic acid immobilized with the probe. After hybridization, the excess probe is removed and the hybrid molecules formed are detected by the appropriate method (measurement of the radioactivity, of the fluorescence or of the enzymatic activity linked to the probe).

35 The invention also comprises the nucleotide sequences according to the invention, characterized in that they are covalently or noncovalently immobilized on a support.

According to another advantageous embodiment of the nucleic sequences according to the invention, the latter may be used immobilized on a support and may thus serve to capture, through

specific hybridization, the target nucleic acid obtained from the biological sample to be tested. If necessary, the solid support is separated from the sample and the hybridization complex formed between the so-called capture probe and the target nucleic acid is then detected by means of a second probe, called detection probe, labelled with an easily detectable element.

5 The nucleotide sequences according to the invention may also be used in new analytical systems, DNA chips, which allow sequencing, the study of mutations and of the expression of genes, and which are currently of interest given their very small size and their high capacity in terms of number of analyses.

 The principle of the operation of these chips is based on molecular probes, most often
10 oligonucleotides, which are attached onto a miniaturized surface, generally of the order of a few square centimetres. During an analysis, a sample containing fragments of a target nucleic acid to be analysed, for example DNA or RNA labelled, for example, after amplification, is deposited onto the DNA chip in which the support has been coated beforehand with probes. Bringing the labelled target sequences into contact with the probes leads to the formation, through hybridization, of a duplex
15 according to the rule of pairing defined by J.D. Watson and F. Crick. After a washing step, analysis of the surface of the chip allows the effective hybridizations to be located by means of the signals emitted by the labels tagging the target. A hybridization fingerprint results from this analysis which, by appropriate computer processing, will make it possible to determine information such as the presence of specific fragments in the sample, the determination of sequences and the presence of mutations.

20 The chip consists of a multitude of molecular probes, precisely organized or arrayed on a solid support whose surface is miniaturized. It is at the centre of a system where other elements (imaging system, microcomputer) allow the acquisition and interpretation of a hybridization fingerprint.

 The hybridization supports are provided in the form of flat or porous surfaces (pierced
25 with wells) composed of various materials. The choice of a support is determined by its physicochemical properties, or more precisely, by the relationship between the latter and the conditions under which the support will be placed during the synthesis or the attachment of the probes or during the use of the chip. It is therefore necessary, before considering the use of a particular support (R.S. Matson et al., 1994), to consider characteristics such as its stability to pH, its physical
30 strength, its reactivity and its chemical stability as well as its capacity to nonspecifically bind nucleic acids. Materials such as glass, silicon and polymers are commonly used. Their surface is, in a first step, called "functionalization", made reactive towards the groups which it is desired to attach thereon.

 After the functionalization, so-called spacer molecules are grafted onto the activated surface. Used as
~~intermediates between the surface and the probe, these molecules of variable size render unimportant~~
35 the surface properties of the supports, which often prove to be problematic for the synthesis or the attachment of the probes and for the hybridization.

 Among the hybridization supports, there may be mentioned glass which is used, for

example, in the method of in situ synthesis of oligonucleotides by photochemical addressing developed by the company Affymetrix (E.L. Sheldon, 1993), the glass surface being activated by silane. Genosensor Consortium (P. Mérel, 1994) also uses glass slides carrying wells 3 mm apart, this support being activated with epoxysilane.

5 Polymers or silicon may also be mentioned among these hybridization supports. For example, the Andrein Mirzabekov team has developed a chip consisting of polyacrylamide squares polymerized on a silanized glass surface (G. Yershov et al., 1996). Several teams use silicon, in particular the IFOS laboratory of Ecole Centrale of Lyon which uses a silicon semiconductor substrate which is p-doped by introducing it into its crystalline structure atoms whose valency is different from
10 that of silicon. Various types of metals, in particular gold and platinum, may also be used as support (Genosensor Consortium (K. Beattie et al., 1993)).

The probes according to the invention may be synthesized directly in situ on the supports of the DNA chips. This in situ synthesis may be carried out by photochemical addressing (developed by the company Affymax (Amsterdam, Holland) and exploited industrially by its subsidiary
15 Affymetrix (United States)) or based on the VLSIPS (very large scale immobilized polymer synthesis) technology (S.P.A. Fodor et al., 1991) which is based on a method of photochemically directed combinatorial synthesis and the principle of which combines solid-phase chemistry, the use of photolabile protecting groups and photolithography.

The probes according to the invention may be attached to the DNA chips in various ways
20 such as electrochemical addressing, automated addressing or the use of probe printers (T. Livache et al., 1994; G. Yershov et al., 1996; J. Derisi et al., 1996, and S. Borman, 1996).

The revealing of the hybridization between the probes of the invention, deposited or synthesized in situ on the supports of the DNA chips, and the sample to be analysed, may be determined, for example, by measurement of fluorescent signals, by radioactive counting or by
25 electronic detection.

The use of fluorescent molecules such as fluorescein constitutes the most common method of labelling the samples. It allows direct or indirect revealing of the hybridization and allows the use of various fluorochromes.

Affymetrix currently provides an apparatus or a scanner designed to read its Gene Chip™
30 chips. It makes it possible to detect the hybridizations by scanning the surface of the chip in confocal microscopy (R.J. Lipshutz et al., 1995). Other methods of detecting fluorescent signals have been tested: coupling of an epifluorescence microscope and a CCD camera (G. Yershov et al., 1996), the use of an optical fibre collecting system (E.L. Sheldon, 1993). A conventional method consists in carrying out an end labelling, with phosphorus 32, of the target sequences, by means of an appropriate
35 apparatus, the Phosphorimager (marketed by Molecular Dynamics). The electronic detection is based on the principle that the hybridization of two nucleic acid molecules is accompanied by physical phenomena which can be quantified under certain conditions (system developed by Ecole Centrale of

Lyon and called GEN-FET (GEN field effect transistor)). Genosensor Consortium and the company Beckman Instruments who are developing an electronic chip or Permittivity Chips™ may also be mentioned (K. Beattie et al., 1993).

5 The nucleotide sequences according to the invention may thus be used in DNA chips to carry out the analysis of mutations. This analysis is based on the production of chips capable of analysing each base of a nucleotide sequence according to the invention.

The nucleotide sequences according to the invention may also be used in DNA chips to carry out the analysis of the expression of the *Chlamydia pneumoniae* genes. This analysis of the expression of *Chlamydia pneumoniae* genes is based on the use of chips where probes of the
10 invention, chosen for their specificity to characterize a given gene, are present (D.J. Lockhart et al., 1996; D.D. Shoemaker et al., 1996). For the methods of analysis of gene expression using the DNA chips, reference may, for example, be made to the methods described by D.J. Lockhart et al. (1996) and Sosnowsky et al. (1997) for the synthesis of probes in situ or for the addressing and the attachment
15 of previously synthesized probes. The target sequences to be analysed are labelled and in general fragmented into sequences of about 50 to 100 nucleotides before being hybridized onto the chip. After washing as described, for example, by D.J. Lockhart et al. (1996) and application of different electric fields (Sosnowsky et al., 1997), the labelled compounds are detected and quantified, the hybridizations being carried out at least in duplicate. Comparative analyses of the signal intensities obtained with respect to the same probe for different samples and/or for different probes with the same sample,
20 determine the differential expression of RNA or of DNA derived from the sample.

The nucleotide sequences according to the invention may, in addition, be used in DNA chips where other nucleotide probes specific for other microorganisms are also present, and may allow the carrying out of a serial test allowing rapid identification of the presence of a microorganism in a sample.

25 Accordingly, the subject of the invention is also the nucleotide sequences according to the invention, characterized in that they are immobilized on a support of a DNA chip.

The DNA chips, characterized in that they contain at least one nucleotide sequence according to the invention, immobilized on the support of the said chip, also form part of the invention.

30 The said chips will preferably contain several probes or nucleotide sequences of the invention of different length and/or corresponding to different genes so as to identify, with greater certainty, the specificity of the target sequences or the desired mutation in the sample to be analysed.

Accordingly, the analyses carried out by means of primers and/or probes according to the invention, immobilized on supports such as DNA chips, will make it possible, for example, to identify,
35 in samples, mutations linked to variations such as intraspecies variations. These variations may be correlated or associated with pathologies specific to the variant identified and will make it possible to select the appropriate treatment.

The invention thus comprises a DNA chip according to the invention, characterized in that it contains, in addition, at least one nucleotide sequence of a microorganism different from *Chlamydia pneumoniae*, immobilized on the support of the said chip; preferably, the different microorganism will be chosen from an associated microorganism, a bacterium of the

5 *Chlamydia* family, and a variant of the species *Chlamydia pneumoniae*.

Another subject of the present invention is a vector for the cloning and/or the expression of a sequence, characterized in that it contains a nucleotide sequence according to the invention. Among the said vectors according to the invention, the vectors containing a nucleotide sequence encoding a polypeptide of the cellular, preferably outer, envelope of *Chlamydia pneumoniae* or one of

10 its representative fragments, are preferred. In a specific embodiment, the vectors contain a nucleotide sequence encoding a *Chlamydia pneumoniae* secreted polypeptide or one of its representative fragments or encoding a transport polypeptide, a surface exposed polypeptide, a lipoprotein or one of its representative fragments, a polypeptide involved in lipopolysaccharide (LPS) biosynthesis, a Type III and non-Type III secreted polypeptide, a polypeptide containing RGD attachment sites, a cell wall

15 anchored surface polypeptide, a polypeptide not found in *Chlamydia trachomatis*, a ribosomal polypeptide or a polypeptide involved in secretion, transcription, translation, maturation of proteins, a polypeptide involved in the synthesis of the wall, a polypeptide involved in the virulence, a polypeptide involved in the intermediate metabolism, in particular in the metabolism of sugars, and/or of cofactors, a polypeptide involved in the metabolism of nucleotides, of amino acids, of nucleic acids

20 or of fatty acids of *Chlamydia pneumoniae* or one of their representative fragments, or a polypeptide specific to *Chlamydia pneumoniae*.

According to the invention, the vectors comprise the elements necessary to allow the expression and/or the secretion of the said nucleotide sequences in a given host cell, and form part of the invention. The vector should, in this case, comprise a promoter, signals for initiation and for

25 termination of translation, as well as appropriate regions for regulation of transcription. It should be capable of being stably maintained in the host cell and may optionally possess particular signals specifying the secretion of the translated protein. These different elements are chosen according to the host cell used. To this effect, the nucleotide sequences according to the invention may be inserted into autonomously-replicating vectors within the chosen host, or integrative vectors in the chosen host.

30 Any of the standard methods known to those skilled in the art for the insertion of DNA fragments into a vector may be used to construct expression vectors containing a chimeric gene consisting of appropriate transcriptional/translational control signals and the protein coding sequences. These methods may include *in vitro* recombinant DNA and synthetic techniques and *in vivo* recombinants (genetic recombination).

35 Expression of a polypeptide, peptide or derivative, or analogs thereof encoded by a polynucleotide sequence in SEQ ID No. 1 or ORFs contained within SEQ ID No. 1 may be regulated by a second nucleic acid sequence so that the protein or peptide is expressed in a host transformed

with the recombinant DNA molecule. For example, expression of a protein or peptide may be controlled by any promoter/enhancer element known in the art. Promoters which may be used to control expression include, but are not limited to, the CMV promoter, the SV40 early promoter region (Bernoist and Chambon, 1981, *Nature* 290:304-310), the promoter contained in the 3' long terminal repeat of Rous sarcoma virus (Yamamoto, *et al.*, 1980, *Cell* 22:787-797), the herpes thymidine kinase promoter (Wagner *et al.*, 1981, *Proc. Natl. Acad. Sci. U.S.A.* 78:1441-1445), the regulatory sequences of the metallothionein gene (Brinster *et al.*, 1982, *Nature* 296:39-42); prokaryotic expression vectors such as the β -lactamase promoter (Villa-Kamaroff, *et al.*, 1978, *Proc. Natl. Acad. Sci. U.S.A.* 75:3727-3731), or the *tac* promoter (DeBoer, *et al.*, 1983, *Proc. Natl. Acad. Sci. U.S.A.* 80:21-25); see also "Useful proteins from recombinant bacteria" in *Scientific American*, 1980, 242:74-94; plant expression vectors comprising the nopaline synthetase promoter region (Herrera-Estrella *et al.*, 1983, *Nature* 303:209-213) or the cauliflower mosaic virus 35S RNA promoter (Gardner, *et al.*, 1981, *Nucl. Acids Res.* 9:2871), and the promoter of the photosynthetic enzyme ribulose biphosphate carboxylase (Herrera-Estrella *et al.*, 1984, *Nature* 310:115-120); promoter elements from yeast or other fungi such as the Gal 4 promoter, the ADC (alcohol dehydrogenase) promoter, PGK (phosphoglycerol kinase) promoter, alkaline phosphatase promoter, and the following animal transcriptional control regions, which exhibit tissue specificity and have been utilized in transgenic animals: elastase I gene control region which is active in pancreatic acinar cells (Swift *et al.*, 1984, *Cell* 38:639-646; Ornitz *et al.*, 1986, *Cold Spring Harbor Symp. Quant. Biol.* 50:399-409; MacDonald, 1987, *Hepatology* 7:425-515); insulin gene control region which is active in pancreatic beta cells (Hanahan, 1985, *Nature* 315:115-122), immunoglobulin gene control region which is active in lymphoid cells (Grosschedl *et al.*, 1984, *Cell* 38:647-658; Adames *et al.*, 1985, *Nature* 318:533-538; Alexander *et al.*, 1987, *Mol. Cell. Biol.* 7:1436-1444), mouse mammary tumor virus control region which is active in testicular, breast, lymphoid and mast cells (Leder *et al.*, 1986, *Cell* 45:485-495), albumin gene control region which is active in liver (Pinkert *et al.*, 1987, *Genes and Devel.* 1:268-276), alpha-fetoprotein gene control region which is active in liver (Krumlauf *et al.*, 1985, *Mol. Cell. Biol.* 5:1639-1648; Hammer *et al.*, 1987, *Science* 235:53-58; alpha 1-antitrypsin gene control region which is active in the liver (Kelsey *et al.*, 1987, *Genes and Devel.* 1:161-171), beta-globin gene control region which is active in myeloid cells (Mogram *et al.*, 1985, *Nature* 315:338-340; Kollias *et al.*, 1986, *Cell* 46:89-94; myelin basic protein gene control region which is active in oligodendrocyte cells in the brain (Readhead *et al.*, 1987, *Cell* 48:703-712); myosin light chain-2 gene control region which is active in skeletal muscle (Sani, 1985, *Nature* 314:283-286), and gonadotropic releasing hormone gene control region which is active in the hypothalamus (Mason *et al.*, 1986, *Science* 234:1372-1378).

The vectors according to the invention are, for example, vectors of plasmid or viral origin. In a specific embodiment, a vector is used that comprises a promoter operably linked to a protein or peptide-encoding a nucleic acid sequence in SEQ ID No. 1, or ORFs contained within SEQ ID No. 1, one or more origins of replication, and, optionally, one or more selectable markers (*e.g.*, an

antibiotic resistance gene). Expression vectors comprise regulatory sequences that control gene expression, including gene expression in a desired host cell. Preferred vectors for the expression of the polypeptides of the invention include the pET-type plasmid vectors (Promega) or pBAD plasmid vectors (Invitrogen). Furthermore, the vectors according to the invention are useful for transforming
5 host cells so as to clone or express the nucleotide sequences of the invention.

Expression can also be achieved using targeted homologous recombination to activate *Chlamydia pneumoniae* genes present in the cloned genomic DNA. A heterologous regulatory element may be inserted into a stable cell line or cloned microorganism, such that it is operatively linked with an endogenous *Chlamydia pneumoniae* gene present in the cloned genome, using
10 techniques, such as targeted homologous recombination, which are well known to those of skill in the art (See, e.g., Chappel, U.S. Patent No. 4,215,051 and Skoultchi, WO 91/06667 each of which is incorporated herein in its entirety).

Expression vector/host cell systems containing inserts of polynucleotide sequences in SEQ ID No. 1 or ORFs within SEQ ID No. 1, which encode polypeptides, peptides or derivatives, or
15 analogs thereof, can be identified by three general approaches: (a) nucleic acid hybridization, (b) presence or absence of "marker" gene functions, and (c) expression of inserted sequences. In the first approach, the presence of a polynucleotide sequence inserted in an expression vector can be detected by nucleic acid hybridization using probes comprising sequences that are homologous to an inserted polynucleotide sequence. In the second approach, the recombinant vector/host system can be
20 identified and selected based upon the presence or absence of certain "marker" gene functions (e.g., thymidine kinase activity, resistance to antibiotics, transformation phenotype, occlusion body formation in baculovirus, etc.) caused by the insertion of a polynucleotide sequence in the vector. For example, if the polynucleotide sequence in SEQ ID No. 1 or ORFs within SEQ ID No. 1 is inserted within the marker gene sequence of the vector, recombinants containing the insert can be identified by
25 the absence of the marker gene function. In the third approach, recombinant expression vectors can be identified by assaying the product of the polynucleotide sequence expressed by the recombinant. Such assays can be based, for example, on the physical or functional properties of the expressed polypeptide in *in vitro* assay systems, e.g., binding with antibody, promotion of cell proliferation.

Once a particular recombinant DNA molecule is identified and isolated, several methods
30 known in the art may be used to propagate it. The clones identified may be introduced into an appropriate host cell by standard methods, such as for example lipofection, electroporation, and heat shock. Once a suitable host system and growth conditions are established, recombinant expression vectors can be propagated and prepared in quantity.

The invention also encompasses the host cells transformed by a vector according to the
35 invention. These cells may be obtained by introducing into host cells a nucleotide sequence inserted into a vector as defined above, and then culturing the said cells under conditions allowing the replication and/or the expression of the transfected nucleotide sequence.

The host cell may be chosen from eukaryotic or prokaryotic systems, such as for example bacterial cells (Olins and Lee, 1993), but also yeast cells (Buckholz, 1993), as well as animal cells, in particular cultures of mammalian cells (Edwards and Aruffo, 1993), and in particular Chinese hamster ovary (CHO) cells, but also insect cells in which methods using baculoviruses for example
5 may be used (Luckow, 1993).

Furthermore, a host cell strain may be chosen which modulates the expression of the inserted sequences, or modifies and processes the gene product in the specific fashion desired. Expression from certain promoters can be elevated in the presence of certain inducers; thus, expression of the genetically engineered polypeptide may be controlled. Furthermore, different host
10 cells have characteristic and specific mechanisms for the translational and post-translational processing and modification (*e.g.*, glycosylation, phosphorylation) of proteins. Appropriate cell lines or host systems can be chosen to ensure the desired modification and processing of the foreign protein expressed. For example, expression in a bacterial system can be used to produce an unglycosylated core protein product. Expression in yeast will produce a glycosylated product. Expression in
15 mammalian cells can be used to ensure "native" glycosylation of a heterologous protein. Furthermore, different vector/host expression systems may effect processing reactions to different extents.

A preferred host cell for the expression of the proteins of the invention consists of prokaryotic cells, such as Gram⁻ bacteria. A further preferred host cell according to the invention is a bacterium belonging to the *Chlamydia* family, more preferably belonging to the species *Chlamydia*
20 *pneumoniae* or chosen from a microorganism associated with the species *Chlamydia pneumoniae*.

In other specific embodiments, the polypeptides, peptides or derivatives, or analogs thereof may be expressed as a fusion, or chimeric protein product (comprising the protein, fragment, analog, or derivative joined via a peptide bond to a heterologous protein sequence (of a different protein)). Such a chimeric product can be made by ligating the appropriate nucleic acid sequences
25 encoding the desired amino acid sequences to each other by methods known in the art, in the proper coding frame, and expressing the chimeric product by methods commonly known in the art. Alternatively, such a chimeric product may be made by protein synthetic techniques, *e.g.*, by use of a peptide synthesizer.

Genomic sequences can be cloned and expressed as translational gene products (*i.e.*,
30 peptides, polypeptides, and proteins) or transcriptional gene products (*i.e.*, antisense and ribozymes).

The invention further relates to the intracellular production of an antisense nucleic acid sequence of SEQ ID No. 1 by transcription from an exogenous sequence. For example, a vector can be introduced *in vivo* such that it is taken up by a cell, within which cell the vector or a portion thereof
is transcribed, producing an antisense nucleic acid (RNA) of the invention. Such a vector would
35 contain a sequence encoding an antisense nucleic acid. Such a vector can remain episomal or become chromosomally integrated, as long as it can be transcribed to produce the desired antisense RNA. Such vectors can be constructed by recombinant DNA technology methods standard in the art.

Vectors can be plasmid, viral, or others known in the art, used for replication and expression in mammalian cells. Expression of the sequence encoding the an antisense RNA can be by any promoter known in the art to act in mammalian, preferably human, cells. Such promoters can be inducible or constitutive. Such promoters include but are not limited to: the CMV promoter, the SV40 early promoter region (Bernoist and Chambon, 1981, Nature 290:304-310), the promoter contained in the 5 3N long terminal repeat of Rous sarcoma virus (Yamamoto *et al.*, 1980, Cell 22:787-797), the herpes thymidine kinase promoter (Wagner *et al.*, 1981, Proc. Natl. Acad. Sci. U.S.A. 78:1441-1445), the regulatory sequences of the metallothionein gene (Brinster *et al.*, 1982, Nature 296:39-42), etc.

In a specific embodiment, the antisense oligonucleotide comprises catalytic RNA, or a ribozyme (see, *e.g.*, PCT International Publication WO 90/11364, published October 4, 1990; Sarver *et al.*, 1990, Science 247:1222-1225). In another embodiment, the oligonucleotide is a 2N-O-methylribonucleotide (Inoue *et al.*, 1987, Nucl. Acids Res. 15:6131-6148), or a chimeric RNA-DNA analog (Inoue *et al.*, 1987, FEBS Lett. 215:327-330).

In another embodiment, the antisense nucleic acids of the invention comprise a sequence complementary to at least a portion of an RNA transcript of a polynucleotide sequence in SEQ-ID No. 1. However, absolute complementarity, although preferred, is not required. A sequence "complementary to at least a portion of an RNA," as referred to herein, means a sequence having sufficient complementarity to be able to hybridize with the RNA, forming a stable duplex; in the case of double-stranded antisense nucleic acid sequence, a single strand of the duplex DNA may thus be tested, or triplex formation may be assayed. The ability to hybridize will depend on both the degree of complementarity and the length of the antisense nucleic acid. Generally, the longer the hybridizing nucleic acid, the more base mismatches with an RNA transcribed from SEQ ID No. 1 may contain and still form a stable duplex (or triplex, as the case may be). One skilled in the art can ascertain a tolerable degree of mismatch by use of standard procedures to determine the melting point of the hybridized complex.

The invention also relates to the animals, except humans, comprising one of the above-described transformed cells according to the invention.

The production of transgenic animals according to the invention overexpressing one or more of the *Chlamydia pneumoniae* genes will be preferably carried out on rats, mice or rabbits according to methods well known to persons skilled in the art such as viral or nonviral transfections. The transgenic animals overexpressing one or more of the said genes may be obtained by transfection of multiple copies of the said genes under the control of a powerful promoter of a ubiquitous nature, or which is selective for one type of tissue. The transgenic animals may also be obtained by homologous recombination on embryonic stem cells, transfer of these stem cells to embryos, selection of the chimeras affected at the level of the reproductive lines, and growth of the said chimeras.

The transformed cells as well as the transgenic animals according to the invention can be used in methods of preparing the recombinant polypeptide.

It is now possible to produce recombinant polypeptides in a relatively large quantity by genetic engineering using the cells transformed with expression vectors according to the invention or using transgenic animals according to the invention.

The methods of preparing a polypeptide of the invention in recombinant form, 5 characterized in that they use a vector and/or a cell transformed with a vector according to the invention and/or a transgenic animal comprising one of the said transformed cells according to the invention, are themselves included in the present invention.

Among the said methods of preparing a polypeptide of the invention in recombinant form, the methods of preparation using a vector, and/or a cell transformed with the said vector and/or a 10 transgenic animal comprising one of the said transformed cells, containing a nucleotide sequence encoding a polypeptide of the cellular envelope of *Chlamydia pneumoniae* or one of its representative fragments, more preferably encoding a polypeptide of the outer cellular envelope of *Chlamydia pneumoniae* or one of its fragment, are preferred.

Among the said methods of preparing a polypeptide of the invention in recombinant 15 form, the methods of preparation using a vector, and/or a cell transformed with the said vector and/or a transgenic animal comprising one of the said transformed cells, containing a nucleotide sequence encoding a *Chlamydia pneumoniae* secreted polypeptide or one of its representative fragments or encoding a transport polypeptide, a surface exposed polypeptide, a lipoprotein or one of its representative fragments, a polypeptide involved in lipopolysaccharide biosynthesis, a Type III or 20 other secreted polypeptide, a polypeptide containing RGD attachment sites, a cell wall anchored surface polypeptide, a polypeptide not found in *Chlamydia trachomatis*, a ribosomal polypeptide or a polypeptide involved in secretion, transcription, translation, maturation of proteins, a polypeptide involved in the synthesis of the wall, a polypeptide involved in the virulence, a polypeptide involved in the intermediate metabolism, in particular in the metabolism of sugars and/or of cofactors, a 25 polypeptide involved in the metabolism of nucleotides, of amino acids, of nucleic acids or of fatty acids of *Chlamydia pneumoniae* or one of their representative fragments, or a polypeptide specific to *Chlamydia pneumoniae*, are also preferred.

The recombinant polypeptides obtained as indicated above may be provided either in glycosylated or non-glycosylated form and may or may not have the natural tertiary structure.

30 A preferred variant consists in producing a recombinant polypeptide fused to a "carrier" protein (chimeric protein). The advantage of this system is that it allows a stabilization and a reduction in proteolysis of the recombinant product, an increase in solubility during renaturation in vitro and/or a simplification of purification when the fusion partner has affinity for a specific ligand.

More particularly, the invention relates to a method of preparing a polypeptide of the 35 invention comprising the following steps:

a) culture of the transformed cells under conditions allowing the expression of a recombinant polypeptide having a nucleic acid sequence according to the invention;

b) where appropriate, recovery of the said recombinant polypeptide.

When the method of preparing a polypeptide of the invention uses a transgenic animal according to the invention, the recombinant polypeptide is then extracted from the said animal.

The subject of the invention is also a polypeptide capable of being obtained by a method
5 of the invention as described above.

The invention also comprises a method of preparing a synthetic polypeptide, characterized in that it uses an amino acid sequence of polypeptides according to the invention.

The invention also relates to a synthetic polypeptide obtained by a method according to the invention.

10 Polypeptides according to the invention may also be prepared by conventional techniques in the field of peptide synthesis under conditions suitable to produce the polypeptides encoded by the polynucleotide of the invention. This synthesis may be carried out in and recovered from a homogeneous solution or on a solid phase.

For example, the synthesis technique in a homogeneous solution described by
15 Houbenweyl in 1974 may be used.

This method of synthesis consists in successively condensing, in pairs, the successive amino acids in the required order, or in condensing amino acids and fragments previously formed and already containing several amino acids in the appropriate order, or alternatively several fragments thus previously prepared, it being understood that care will have been taken to protect beforehand all the
20 reactive functional groups carried by these amino acids or fragments, with the exception of the amine functional groups of one and the carboxyl functional groups of the other or vice versa, which should normally take part in the formation of the peptide bonds, in particular after activation of the carboxyl functional group, according to methods well known in peptide synthesis.

According to another preferred technique of the invention, the one described by
25 Merrifield is used.

To manufacture a peptide chain according to the Merrifield method, a highly porous polymer resin is used, onto which the first C-terminal amino acid of the chain is attached. This amino acid is attached onto a resin via its carboxyl group and its amine functional group is protected. The amino acids which will constitute the peptide chain are thus attached, one after another, onto the
30 group, each time deprotected beforehand, of the portion of the peptide chain already formed, and which is attached to the resin. When the entire peptide chain desired is formed, the protecting groups are removed from the various amino acids constituting the peptide chain and the peptide is detached from the resin with the aid of an acid.

The invention relates, in addition, to hybrid (fusion) polypeptides having at least one
35 polypeptide or one of its representative fragments according to the invention, and a sequence of a polypeptide capable of eliciting an immune response in humans or animals.

Advantageously, the antigenic determinant is such that it is capable of eliciting a humoral

and/or cellular response. An antigenic determinant may be identified by screening expression libraries of the *Chlamydia pneumoniae* genome with antibodies contained in the serum of patients infected with a bacterium belonging to the species *Chlamydia pneumoniae*. An antigenic determinant may comprise a polypeptide or one of its representative fragments according to the invention, in glycosylated form, used in order to obtain immunogenic compositions capable of inducing the synthesis of antibodies directed against multiple epitopes. The said polypeptides or their glycosylated fragments also form part of the invention.

These hybrid molecules may consist, in part, of a carrier molecule for polypeptides or for their representative fragments according to the invention, combined with a portion which may be immunogenic, in particular an epitope of the diphtheria toxin, the tetanus toxin, a hepatitis B virus surface antigen (patent FR 79 21811), the poliomyelitis virus VP1 antigen or any other viral or bacterial toxin or antigen.

The methods of synthesizing the hybrid molecules include the methods used in genetic engineering to construct hybrid nucleotide sequences encoding the desired polypeptide sequences. Reference may be advantageously made, for example, to the technique for producing genes encoding fusion proteins described by Minton in 1984.

The said hybrid nucleotide sequences encoding a hybrid polypeptide as well as the hybrid polypeptides according to the invention, characterized in that they are recombinant polypeptides obtained by the expression of the said hybrid nucleotide sequences, also form part of the invention.

The invention also comprises the vectors characterized in that they contain one of the said hybrid nucleotide sequences. The host cells transformed by the said vectors, the transgenic animals comprising one of the said transformed cells as well as the methods of preparing recombinant polypeptides using the said vectors, the said transformed cells and/or the said transgenic animals of course also form part of the invention.

The polypeptides according to the invention, the antibodies according to the invention described below and the nucleotide sequences according to the invention may advantageously be used in *in vitro* and/or *in vivo* methods for the detection and/or the identification of bacteria belonging to the species *Chlamydia pneumoniae*, in a biological sample (biological tissue or fluid) which is likely to contain them. These methods, depending on the specificity of the polypeptides, of the antibodies and of the nucleotide sequences according to the invention which will be used, may in particular detect and/or identify the bacterial variants belonging to the species *Chlamydia pneumoniae* as well as the associated microorganisms capable of being detected by the polypeptides, the antibodies and the nucleotide sequences according to the invention which will be chosen. It may, for example, be advantageous to choose a polypeptide, an antibody or a nucleotide sequence according to the invention, which is capable of detecting any bacterium of the *Chlamydia* family by choosing a polypeptide, an antibody and/or a nucleotide sequence according to the invention which is specific to the family or, on the contrary, it will be most particularly advantageous to target a variant of the

species *Chlamydia pneumoniae*, which is responsible, for example, for the induction or the worsening of pathologies specific to the targeted variant, by choosing a polypeptide, an antibody and/or a nucleotide sequence according to the invention which is specific to the said variant.

The polypeptides according to the invention may advantageously be used in a method for the detection and/or the identification of bacteria belonging to the species *Chlamydia pneumoniae* or to an associated microorganism, in a biological sample (biological tissue or fluid) which is likely to contain them, characterized in that it comprises the following steps:

- a) bringing this biological sample into contact with a polypeptide or one of its representative fragments according to the invention (under conditions allowing an immunological reaction between the said polypeptide and the antibodies which may be present in the biological sample);
- b) detecting the antigen-antibody complexes which may be formed.

Preferably, the biological sample consists of a fluid, for example a human or animal serum, blood or biopsies.

Any conventional procedure may be used to carry out such a detection of the antigen-antibody complexes which may be formed.

By way of example, a preferred method uses immunoenzymatic procedures based on the ELISA technique, immunofluorescence procedures or radioimmunological procedures (RIA), and the like.

Accordingly, the invention also relates to the polypeptides according to the invention, labelled with the aid of a suitable label such as a label of the enzymatic, fluorescent or radioactive type.

Such methods comprise, for example, the following steps:

- deposition of defined quantities of a polypeptide composition according to the invention into the wells of a microtitre plate,
- introduction, into the said wells, of increasing dilutions of serum, or of a different biological sample as defined above, which has to be analysed,
- incubation of the microplate,
- introduction, into the wells of the microtitre plate, of labelled antibodies directed against human or animal immunoglobulins, these antibodies having been labelled with the aid of an enzyme selected from those which are capable of hydrolyzing a substrate, thereby modifying the absorption of the radiation of the latter, at least at a defined wavelength, for example at 550 nm,
- detection, by comparison with a control, of the quantity of substrate hydrolyzed.

The invention also relates to a kit or set for the detection and/or the identification of bacteria belonging to the species *Chlamydia pneumoniae* or to an associated microorganism, characterized in that it comprises the following components:

- a polypeptide according to the invention,

- where appropriate, the reagents for constituting the medium appropriate for the immunological or specific reaction,
- the reagents allowing the detection of the antigen-antibody complexes produced by the immunological reaction between the polypeptide(s) of the invention and the antibodies which may be present in the biological sample, it being possible for these reagents also to carry a label, or to be capable of being recognized in turn by a labelled reagent, more particularly in the case where the polypeptide according to the invention is not labelled,
- where appropriate, a reference biological sample (negative control) free of antibodies recognized by a polypeptide according to the invention,
- 10 - where appropriate, a reference biological sample (positive control) containing a predetermined quantity of antibodies recognized by a polypeptide according to the invention.

According to the invention, the polypeptides, peptides, fusion proteins or other derivatives, or analogs thereof encoded by a polynucleotide sequence in SEQ ID No. 1, may be used as an immunogen to generate antibodies which immunospecifically bind such an immunogen. Such antibodies may include, but are not limited to, polyclonal and monoclonal antibodies, humanized or chimeric antibodies, single chain antibodies, Fab fragments, F(ab')₂ fragments, fragments produced by a Fab expression library, anti-idiotypic (anti-Id) antibodies, and epitope-binding fragments of any of the above. In a specific embodiment, the antibody to a polypeptide, peptide or other derivative, or analog thereof encoded by a polynucleotide sequence in SEQ ID No. 1 is a bispecific antibody (see generally, *e.g.* Fanger and Drakeman, 1995, *Drug News and Perspectives* 8: 133-137). Such a bispecific antibody is genetically engineered to recognize both (1) an epitope and (2) one of a variety of "trigger" molecules, *e.g.* Fc receptors on myeloid cells, and CD3 and CD2 on T cells, that have been identified as being able to cause a cytotoxic T-cell to destroy a particular target. Such bispecific antibodies can be prepared either by chemical conjugation, hybridoma, or recombinant molecular biology techniques known to the skilled artisan.

Various procedures known in the art may be used for the production of polyclonal antibodies to a polypeptide, peptide or other derivative, or analog thereof encoded by a polynucleotide sequence in SEQ ID No. 1. For the production of antibody, various host animals can be immunized by injection with a polypeptide, or peptide or other derivative, or analog thereof, including but not limited to rabbits, mice, rats, etc. Various adjuvants, depending on the host species, may be used to increase the immunological response, including but not limited to Stimulon™ QS-21 (Aquila Biopharmaceuticals, Inc., Framingham, MA), MPL™ (3-O-deacylated monophosphoryl lipid A; RIBI ImmunoChem Research, Inc., Hamilton, MT), aluminum phosphate, IL-12 (Genetics Institute, Cambridge, MA), Freund's (complete and incomplete), mineral gels such as aluminum hydroxide, surface active substances such as lysolecithin, pluronic polyols, polyanions, peptides, oil emulsions, keyhole limpet hemocyanins, dinitrophenol, BCG (bacille Calmette-Guerin), and corynebacterium parvum. Alternatively, polyclonal antibodies may be prepared by purifying, on an affinity column

onto which a polypeptide according to the invention has been previously attached, the antibodies contained in the serum of patients infected with a bacterium belonging to the species *Chlamydia pneumoniae*.

For preparation of monoclonal antibodies directed toward a polypeptide, peptide or other derivative, or analog, any technique which provides for the production of antibody molecules by continuous cell lines in culture may be used. For example, the hybridoma technique originally developed by Kohler and Milstein (1975, *Nature* 256:495-497), as well as the trioma technique, the human B-cell hybridoma technique (Kozbor *et al.*, 1983, *Immunology Today* 4:72), and the EBV-hybridoma technique to produce human monoclonal antibodies (Cole *et al.*, 1985, in *Monoclonal Antibodies and Cancer Therapy*, Alan R. Liss, Inc., pp. 77-96). In an additional embodiment of the invention, monoclonal antibodies can be produced in germ-free animals utilizing technology described in PCT/US90/02545. In another embodiment of the invention, transgenic non-human animals can be used for the production of human antibodies utilizing technology described in WO 98/24893 and WO 96/33735. According to the invention, human antibodies may be used and can be obtained by using human hybridomas (Cote *et al.*, 1983, *Proc. Natl. Acad. Sci. U.S.A.* 80:2026-2030) or by transforming human B cells with EBV virus *in vitro* (Cole *et al.*, 1985, in *Monoclonal Antibodies and Cancer Therapy*, Alan R. Liss, pp. 77-96). In fact, according to the invention, techniques developed for the production of "chimeric antibodies" (Morrison *et al.*, 1984, *PROC. NATL. ACAD. SCI. U.S.A.* 81:6851-6855; Neuberger *et al.*, 1984, *Nature* 312:604-608; Takeda *et al.*, 1985, *Nature* 314:452-454) by splicing the genes from a mouse antibody molecule specific for a polypeptide, peptide or other derivative, or analog together with genes from a human antibody molecule of appropriate biological activity can be used; such antibodies are within the scope of this invention.

According to the invention, techniques described for the production of single chain antibodies (U.S. Patent 4,946,778) can be adapted to produce polypeptide or peptide-specific single chain antibodies. An additional embodiment of the invention utilizes the techniques described for the construction of Fab expression libraries (Huse *et al.*, 1989, *Science* 246:1275-1281) to allow rapid and easy identification of monoclonal Fab fragments with the desired specificity for polypeptides, derivatives, or analogs.

Antibody fragments which contain the idiotype of the molecule can be generated by known techniques. For example, such fragments include but are not limited to: the F(ab')₂ fragment which can be produced by pepsin digestion of the antibody molecule; the Fab' fragments which can be generated by reducing the disulfide bridges of the F(ab')₂ fragment, the Fab fragments which can be generated by treating the antibody molecule with papain and a reducing agent, and Fv fragments.

In addition, techniques have been developed for the production of chimerized (See, e.g., Boss, M. et al., U.S. Patent No. 4,816,397; and Cabilly, S. et al., U.S. Patent No. 5,585,089 each of which is incorporated herein by reference in its entirety) humanized antibodies (See, e.g., Queen, U.S. Patent No. 5,585,089, which is incorporated herein by reference in its entirety.) An immunoglobulin

light or heavy chain variable region consists of a "framework" region interrupted by three hypervariable regions, referred to as complementarily determining regions (CDRs). The extent of the framework region and CDRs have been precisely defined (See, "Sequences of Proteins of Immunological Interest", Kabat, E. et al., U.S. Department of Health and Human Services (1983).

- 5 Briefly, humanized antibodies are antibody molecules from non-human species having one or more CDRs from the non-human species and a framework from a human immunoglobulin molecule.

The antibodies of the invention may also be labelled in the same manner as described above for the nucleic probes of the invention such as an enzymatic, fluorescent or radioactive type labelling.

- 10 The invention relates, in addition, to a method for the detection and/or the identification of bacteria belonging to the species *Chlamydia pneumoniae* or to an associated microorganism in a biological sample, characterized in that it comprises the following steps:

- a) bringing the biological sample (biological tissue or fluid) into contact with a mono- or polyclonal antibody according to the invention (under conditions allowing an immunological reaction
15 between the said antibodies and the polypeptides of the bacterium belonging to the species *Chlamydia pneumoniae* or to an associated microorganism which may be present in the biological sample, that is, under conditions suitable for the formation of immune complexes);
- b) detecting the antigen-antibody complex which may be formed.

- 20 Also falling within the scope of the invention is a kit or set for the detection and/or the identification of bacteria belonging to the species *Chlamydia pneumoniae* or to an associated microorganism, characterized in that it comprises the following components:

- a polyclonal or monoclonal antibody according to the invention, labeled where appropriate;
- where appropriate, a reagent for constituting the medium appropriate for carrying out the
25 immunological reaction;
- a reagent allowing the detection of the antigen-antibody complexes produced by the immunological reaction, it being possible for this reagent also to carry a label, or to be capable of being recognized in turn by a labelled reagent, more particularly in the case where the said monoclonal or polyclonal antibody is not labelled;
- 30 - where appropriate, reagents for carrying out the lysis of the cells in the sample tested.

- The principle of the DNA chip which was explained above may also be used to produce protein "chips" on which the support has been coated with a polypeptide or an antibody according to the invention, or arrays thereof, in place of the DNA. These protein "chips" make it possible, for example, to analyze the biomolecular interactions (BIA) induced by the affinity capture of target
35 analytes onto a support coated, for example, with proteins, by surface plasma resonance (SPR). Reference may be made, for example, to the techniques for coupling proteins onto a solid support which are described in EP 524 800 or to the methods describing the use of biosensor-type protein

chips such as the BIAcore-type technique (Pharmacia) (Arlinghaus et al., 1997, Krone et al., 1997, Chatelier et al., 1995). These polypeptides or antibodies according to the invention, capable of specifically binding antibodies or polypeptides derived from the sample to be analysed, may thus be used in protein chips for the detection and/or the identification of proteins in samples. The said protein
5 chips may in particular be used for infectious diagnosis and may preferably contain, per chip, several polypeptides and/or antibodies of the invention of different specificity, and/or polypeptides and/or antibodies capable of recognizing microorganisms different from *Chlamydia pneumoniae*.

Accordingly, the subject of the present invention is also the polypeptides and the antibodies according to the invention, characterized in that they are immobilized on a support, in
10 particular of a protein chip.

The protein chips, characterized in that they contain at least one polypeptide or one antibody according to the invention immobilized on the support of the said chip, also form part of the invention.

The invention comprises, in addition, a protein chip according to the invention,
15 characterized in that it contains, in addition, at least one polypeptide of a microorganism different from *Chlamydia pneumoniae* or at least one antibody directed against a compound of a microorganism different from *Chlamydia pneumoniae*, immobilized on the support of the said chip.

The invention also relates to a kit or set for the detection and/or the identification of bacteria belonging to the species *Chlamydia pneumoniae* or to an associated microorganism, or for the
20 detection and/or the identification of a microorganism characterized in that it comprises a protein chip according to the invention.

The subject of the present invention is also a method for the detection and/or the identification of bacteria belonging to the species *Chlamydia pneumoniae* or to an associated microorganism in a biological sample, characterized in that it uses a nucleotide sequence according to
25 the invention.

More particularly, the invention relates to a method for the detection and/or the identification of bacteria belonging to the species *Chlamydia pneumoniae* or to an associated microorganism in a biological sample, characterized in that it comprises the following steps:

- a) where appropriate, isolation of the DNA from the biological sample to be analysed, or optionally
30 production of a cDNA from the RNA in the biological sample;
- b) specific amplification of the DNA of bacteria belonging to the species *Chlamydia pneumoniae* or to an associated microorganism with the aid of at least one primer according to the invention;
- c) detection of the amplification products.

35 These may be detected, for example, by the molecular hybridization technique using a nucleic probe according to the invention. This probe will be advantageously labelled with a nonradioactive (cold probe) or radioactive element.

For the purposes of the present invention, "DNA in the biological sample" or "DNA contained in the biological sample" will be understood to mean either the DNA present in the biological sample considered, or optionally the cDNA obtained after the action of a reverse transcriptase-type enzyme on the RNA present in the said biological sample.

5 Another aim of the present invention consists in a method according to the invention, characterized in that it comprises the following steps:

- a) bringing a nucleotide probe according to the invention into contact with a biological sample, the DNA contained in the biological sample having, where appropriate, been previously made accessible to hybridization, under conditions allowing the hybridization of the probe to complementary base pairs of the DNA of a bacterium belonging to the species *Chlamydia pneumoniae* or to an associated microorganism;
- 10 b) detecting the hybridization complex formed between the nucleotide probe and the DNA in the biological sample.

The present invention also relates to a method according to the invention, characterized in that it comprises the following steps:

- a) bringing a nucleotide probe immobilized on a support according to the invention into contact with a biological sample, the DNA in the sample having, where appropriate, been previously made accessible to hybridization, under conditions allowing the hybridization of the probe to the DNA of a bacterium belonging to the species *Chlamydia pneumoniae* or to an associated microorganism;
- 20 b) bringing the hybrid formed between the nucleotide probe immobilized on a support and the DNA contained in the biological sample, where appropriate after removal of the DNA in the biological sample which has not hybridized with the probe, into contact with a labelled nucleotide probe according to the invention;
- 25 c) detecting the new hybrid formed in step b).

According to an advantageous embodiment of the method for the detection and/or the identification defined above, it is characterized in that, prior to step a), the DNA in the biological sample is primer-extended and/or amplified beforehand with the aid of at least one primer according to the invention.

30 The invention relates, in addition, to a kit or set for the detection and/or the identification of bacteria belonging to the species *Chlamydia pneumoniae* or to an associated microorganism, characterized in that it comprises the following components:

- a) a nucleotide probe according to the invention;
- b) where appropriate, the reagents necessary for carrying out a hybridization reaction;
- 35 c) where appropriate, at least one primer according to the invention as well as the reagents (e.g., polymerase and/or deoxynucleotide triphosphates) necessary for a DNA amplification reaction.

The invention also relates to a kit or set for the detection and/or the identification of bacteria belonging to the species *Chlamydia pneumoniae* or to an associated microorganism, characterized in that it comprises the following components:

- a) a nucleotide probe, called capture probe, according to the invention;
- 5 b) an oligonucleotide probe, called detection probe, according to the invention;
- c) where appropriate, at least one primer according to the invention as well as the reagents (e.g., polymerase and/or deoxynucleotide triphosphates) necessary for a DNA amplification reaction.

The invention also relates to a kit or set for the detection and/or the identification of
10 bacteria belonging to the species *Chlamydia pneumoniae* or to an associated microorganism, characterized in that it comprises the following components:

- a) at least one primer according to the invention;
- b) where appropriate, the reagents necessary for carrying out a DNA amplification reaction;
- c) where appropriate, a component which makes it possible to check the sequence of the amplified
15 fragment, more particularly an oligonucleotide probe according to the invention.

The invention relates, in addition, to a kit or set for the detection and/or the identification of bacteria belonging to the species *Chlamydia pneumoniae* or to an associated microorganism, or for the detection and/or the identification of a microorganism characterized in that it comprises a DNA chip according to the invention.

20 The invention also relates to a method or to a kit or set according to the invention for the detection and/or the identification of bacteria belonging to the species *Chlamydia pneumoniae*, characterized in that the said primer and/or the said probe according to the invention are chosen from the nucleotide sequences specific to the species *Chlamydia pneumoniae*, in that the said polypeptides according to the invention are chosen from the polypeptides specific to the species *Chlamydia*
25 *pneumoniae* and in that the said antibodies according to the invention are chosen from the antibodies directed against the polypeptides according to the invention chosen from the polypeptides specific to the species *Chlamydia pneumoniae*.

Preferably, the said method or the said kit or set above according to the invention, for the detection and/or the identification of bacteria belonging to the species *Chlamydia pneumoniae* is
30 characterized in that the said primer and/or the said probe or the said polypeptides are chosen from the nucleotide sequences or polypeptides according to the invention which have been identified as being specific to the species *Chlamydia pneumoniae* and in that the said antibodies according to the invention are chosen from the antibodies directed against the polypeptides according to the invention chosen from the polypeptides identified as being specific to the species *Chlamydia pneumoniae*.

35 The invention relates, in addition, to a method or a kit or set according to the invention for the diagnosis of predispositions to, or of a condition caused by, cardiovascular diseases, preferably linked to the presence of atheroma, which are induced or worsened by a *Chlamydia pneumoniae*

infection.

The invention also relates to a method or a kit or set according to the invention for the diagnosis of predispositions to, or of conditions caused by, respiratory diseases induced or worsened by a *Chlamydia pneumoniae* infection; preferably, the said respiratory disease is asthma.

5 According to another aspect, the subject of the invention is the use of polypeptides according to the invention, of cells transformed with a vector according to the invention and/or of transformed animals according to the invention, for the biosynthesis or the biodegradation of organic or inorganic compounds.

As has been mentioned above, the nucleotide sequences of the invention were identified
10 by homology with sequences known to encode, for example, polypeptides or fragments of enzymatic polypeptides involved in the biosynthesis or the biodegradation of organic or inorganic molecules.

It is thus possible to use the said polypeptides of the invention in a similar manner for the biosynthesis or the biodegradation of organic or inorganic compounds of industrial or therapeutic interest (called compounds of interest).

15 Among these polypeptides, there may be mentioned in particular the enzymes involved in metabolism, such as the proteolytic enzymes, amino transferases, glucose metabolism, or the enzymes which may be used in the biosynthesis of sugars, amino acids, fatty acids, polypeptides, nucleotides, nucleic acids or any other organic or inorganic compound or in the biodegradation of organic or inorganic compounds.

20 Among these polypeptides, there may be mentioned, in addition, the mutated or modified enzymes corresponding to mutated or modified polypeptides according to the invention which may also be used for the biosynthesis or the biodegradation of organic or inorganic compounds at the industrial level, such as, for example, the production of compounds of interest, the reprocessing of manufacturing residues applied to the food industries, to the papermaking industry or to the chemical
25 and pharmaceutical industries.

The methods of biosynthesis or biodegradation of organic or inorganic compounds, characterized in that they use a polypeptide or one of its representative fragments according to the invention, transformed cells according to the invention and/or a transformed animal according to the invention, also form part of the invention.

30 The invention relates, in addition, to the use of a nucleotide sequence according to the invention, of a polypeptide according to the invention, of an antibody according to the invention, of a cell according to the invention, and/or of a transformed animal according to the invention, for the selection of an organic or inorganic compound capable of modulating, regulating, inducing or inhibiting the expression of genes, and/or of modifying the cellular replication of eukaryotic or
35 prokaryotic cells or capable of inducing, inhibiting or worsening the pathologies linked to an infection by *Chlamydia pneumoniae* or one of its associated microorganisms.

The invention also comprises screening assays that comprise methods of selecting

compounds capable of binding to a polypeptide, fusion polypeptide or one of its representative fragments according to the invention, capable of binding to a nucleotide sequence according to the invention, or capable of recognizing an antibody according to the invention, and/or capable of modulating, regulating, inducing or inhibiting the expression of genes, and/or of modifying the growth
5 or the cellular replication of eukaryotic or prokaryotic cells, or capable of inducing, inhibiting or worsening, in an animal or human organism, the pathologies linked to an infection by *Chlamydia pneumoniae* or one of its associated microorganisms, characterized in that it comprises the following steps:

a) bringing the said compound into contact with the said polypeptide, the said nucleotide
10 sequence, with a transformed cell according to the invention and/or administering the said compound to a transformed animal according to the invention;

b) determining the capacity of the said compound to bind with the said polypeptide or the said nucleotide sequence, or to modulate, regulate, induce or inhibit the expression of genes, or to modulate growth or cellular replication, or to induce, inhibit or worsen in the said transformed animal,
15 the pathologies linked to an infection by *Chlamydia pneumoniae* or one of its associated microorganisms.

The transformed cells and/or animals according to the invention may advantageously serve as a model and may be used in methods for studying, identifying and/or selecting compounds capable of being responsible for pathologies induced or worsened by *Chlamydia pneumoniae*, or
20 capable of preventing and/or of treating these pathologies such as, for example, cardiovascular or respiratory diseases. In particular, the transformed host cells, in particular bacteria of the *Chlamydia* family whose transformation with a vector according to the invention may, for example, increase or inhibit its infectivity, or modulate the pathologies usually induced or worsened by the infection, may be used to infect animals in which the onset of pathologies will be monitored. These nontransformed
25 animals, infected for example with transformed *Chlamydia* bacteria, may serve as a study model. In the same manner, the transformed animals according to the invention may, for example, exhibit predispositions to cardiovascular and/or respiratory diseases and thus be used in methods for selecting compounds capable of preventing and/or of treating the said diseases. The said methods using the said transformed cells and/or transformed animals form part of the invention.

30 The compounds capable of being selected may be organic compounds such as polypeptides or carbohydrates or any other organic or inorganic compounds already known, or new organic compounds produced using molecular modeling techniques and obtained by chemical or biochemical synthesis, these techniques being known to persons skilled in the art.

The said selected compounds may be used to modulate the growth and/or the cellular
35 replication of *Chlamydia pneumoniae* or any other associated microorganism and thus to control infection by these microorganisms. The said compounds according to the invention may also be used to modulate the growth and/or the cellular replication of all eukaryotic or prokaryotic cells, in

particular tumour cells and infectious microorganisms, for which the said compounds will prove active, the methods which make it possible to determine the said modulations being well known to persons skilled in the art.

Compound capable of modulating the growth of a microorganism is understood to
5 designate any compound which makes it possible to act, to modify, to limit and/or to reduce the development, the growth, the rate of proliferation and/or the viability of the said microorganism.

This modulation may be achieved, for example, by an agent capable of binding to a protein and thus of inhibiting or of potentiating its biological activity, or capable of binding to a membrane protein of the outer surface of a microorganism and of blocking the penetration of the said
10 microorganism into the host cell or of promoting the action of the immune system of the infected organism directed against the said microorganism. This modulation may also be achieved by an agent capable of binding to a nucleotide sequence of a DNA or RNA of a microorganism and of blocking, for example, the expression of a polypeptide whose biological or structural activity is necessary for the growth or for the reproduction of the said microorganism.

15 Associated microorganism is understood to designate in the present invention any microorganism whose gene expression may be modulated, regulated, induced or inhibited, or whose growth or cellular replication may also be modulated by a compound of the invention. Associated microorganism is also understood to designate in the present invention any microorganism containing nucleotide sequences or polypeptides according to the invention. These microorganisms may, in some
20 cases, contain polypeptides or nucleotide sequences identical or homologous to those of the invention may also be detected and/or identified by the detection and/or identification methods or kit according to the invention and may also serve as a target for the compounds of the invention.

The invention relates to the compounds capable of being selected by a method of selection according to the invention.

25 The invention also relates to a pharmaceutical composition comprising a compound chosen from the following compounds:

a nucleotide sequence according to the invention;

a polypeptide according to the invention;

a vector according to the invention;

30 an antibody according to the invention; and

a compound capable of being selected by a method of selection according to the invention, optionally in combination with a pharmaceutically acceptable vehicle.

An effective quantity is understood to designate a sufficient quantity of the said
compound or antibody, or of a polypeptide of the invention, which makes it possible to modulate the
35 growth of *Chlamydia pneumoniae* or of an associated microorganism.

The invention also relates to a pharmaceutical composition comprising one or more polypeptides according to the invention and/or one or more fusion polypeptides according to the

invention. Such compositions further comprise a pharmaceutically acceptable carrier or vehicle. Pharmaceutical compositions include compositions that comprise a polypeptide or fusion polypeptide that immunoreacts with seropositive serum of an individual infected with *Chlamydia pneumoniae*. In one embodiment, a pharmaceutical composition according to the invention can be utilized for the prevention or the treatment of an infection by a bacterium belonging to the species *Chlamydia pneumoniae* or by an associated microorganism.

The invention relates, in addition, to an immunogenic composition or a vaccine composition, characterized in that it comprises one or more polypeptides according to the invention and/or one or more hybrid (fusion) polypeptides according to the invention. Such compositions further comprise a pharmaceutically acceptable carrier or vehicle. Immunogenic compositions or fusion polypeptide include compositions that comprise a polypeptide that immunoreacts with seropositive serum of an individual infected with *Chlamydia pneumoniae*.

Immunogenic or vaccine compositions can also comprise DNA immunogenic or vaccine compositions comprising polynucleotide sequences of the invention operatively associated with a regulatory sequence that controls gene expression. Such compositions can include compositions that direct expression of a neutralizing epitope of *Chlamydia pneumoniae*.

The invention also comprises the use of a transformed cell according to the invention, for the preparation of a vaccine composition.

The invention also relates to a vaccine composition, characterized in that it contains a nucleotide sequence according to the invention, a vector according to the invention and/or a transformed cell according to the invention.

The invention also relates to the vaccine compositions according to the invention, for the prevention or the treatment of an infection by a bacterium belonging to the species *Chlamydia pneumoniae* or by an associated microorganism.

The invention also relates to the use of DNA encoding polypeptides of *Chlamydia pneumoniae*, in particular antigenic determinants, to be formulated as vaccine compositions. In accordance with this aspect of the invention, the DNA of interest is engineered into an expression vector under the control of regulatory elements, which will promote expression of the DNA, i.e., promoter or enhancer elements. In one preferred embodiment, the promoter element may be cell-specific and permit substantial transcription of the DNA only in predetermined cells. The DNA may be introduced directly into the host either as naked DNA (U.S. Patent No. 5,679,647 incorporated herein by reference in their entirety) or formulated in compositions with other agents which may facilitate uptake of the DNA including viral vectors, i.e., adenovirus vectors, or agents which facilitate immunization, such as bupivacaine and other local anesthetics (U.S. Patent 5,593,972 incorporated herein by reference in their entirety), saponins (U.S. Patent 5,739,118 incorporated herein by reference in their entirety) and cationic polyamines (published international application WO 96/10038 incorporated herein by reference in their entirety).

The DNA sequence encoding the antigenic polypeptide and regulatory element may be inserted into a stable cell line or cloned microorganism, using techniques, such as targeted homologous recombination, which are well known to those of skill in the art, and described e.g., in Chappel, U.S. Patent No. 4,215,051; Skoultchi, WO 91/06667 each of which is incorporated herein by
5 reference in its entirety.

Such cell lines and microorganisms may be formulated for vaccine purposes. In yet another embodiment, the DNA sequence encoding the antigenic polypeptide and regulatory element may be delivered to a mammalian host and introduced into the host genome via homologous recombination (See, Chappel, U.S. Patent No. 4,215,051; Skoultchi, WO 91/06667 each of which is
10 incorporated herein by reference in its entirety.

Preferably, the immunogenic and/or vaccine compositions according to the invention intended for the prevention and/or the treatment of an infection by *Chlamydia pneumoniae* or by an associated microorganism will be chosen from the immunogenic and/or vaccine compositions comprising a polypeptide or one of its representative fragments corresponding to a protein, or one of
15 its representative fragments, of the cellular envelope of *Chlamydia pneumoniae*. The vaccine compositions comprising nucleotide sequences will also preferably comprise nucleotide sequences encoding a polypeptide or one of its representative fragments corresponding to a protein, or one of its representative fragments, of the cellular envelope of *Chlamydia pneumoniae*.

Among these preferred immunogenic and/or vaccine compositions, the most preferred are
20 those comprising a polypeptide or one of its representative fragments, or a nucleotide sequence or one of its representative fragments whose sequences are chosen from the nucleotide or amino acid sequences identified in this functional group and listed above.

The polypeptides of the invention or their representative fragments entering into the immunogenic compositions according to the invention may be selected by techniques known to
25 persons skilled in the art, such as for example on the capacity of the said polypeptides to stimulate T cells, which results, for example, in their proliferation or the secretion of interleukins, and which leads to the production of antibodies directed against the said polypeptides.

In mice, in which a weight dose of the vaccine composition comparable to the dose used in humans is administered, the antibody reaction is tested by collecting serum followed by a study of
30 the formation of a complex between the antibodies present in the serum and the antigen of the vaccine composition, according to the customary techniques.

According to the invention, the said vaccine compositions will be preferably in combination with a pharmaceutically acceptable vehicle and, where appropriate, with one or more
appropriate immunity adjuvants.

35 Various types of vaccines are currently available for protecting humans against infectious diseases: attenuated live microorganisms (*M. bovis* - BCG for tuberculosis), inactivated microorganisms (influenza virus), acellular extracts (*Bordetella pertussis* for whooping cough),

recombinant proteins (hepatitis B virus surface antigen), polysaccharides (pneumococci). Experiments are underway on vaccines prepared from synthetic peptides or from genetically modified microorganisms expressing heterologous antigens. Even more recently, recombinant plasmid DNAs carrying genes encoding protective antigens were proposed as an alternative vaccine strategy. This type of vaccination is carried out with a particular plasmid derived from an *E. coli* plasmid which does not replicate *in vivo* and which encodes only the vaccinal protein. Animals were immunized by simply injecting the naked plasmid DNA into the muscle. This technique leads to the expression of the vaccine protein *in situ* and to a cell-type (CTL) and a humoral type (antibody) immune response. This double induction of the immune response is one of the main advantages of the technique of vaccination with naked DNA.

The vaccine compositions of the present invention can be evaluated in *in vitro* and *in vivo* animal models prior to host, e.g., human, administration. For example, *in vitro* neutralization assays such as those described by Peterson et al. (1988) can be utilized. The assay described by Peterson et al. (1988) is suitable for testing vaccine compositions directed toward either *Chlamydia pneumoniae* or *Chlamydia trachomatis*.

Briefly, hyper-immune antisera is diluted in PBS containing 5% guinea pig serum, as a complement source. *Chlamydiae* (10^4 IFU; infectious units) are added to the antisera dilutions. The antigen-antibody mixtures are incubated at 37EC for 45 minutes and inoculated into duplicate confluent Hep-2 or HeLa cell monolayers contained in glass vials (e.g., 15 by 45 mm), which have been washed twice with PBS prior to inoculation. The monolayer cells are infected by centrifugation at 1000X g for 1 hour followed by stationary incubation at 37E for 1 hour. Infected monolayers are incubated for 48 or 72 hours, fixed and stained with a *Chlamydiae* specific antibody, such as anti-MOMP for *C. trachomatis*, etc. IFUs are counted in ten fields at a magnification of 200X. Neutralization titer is assigned based on the dilution that gives 50% inhibition as compared to control monolayers/IFU.

The efficacy of vaccine compositions can be determined *in vivo* by challenging animal models of *Chlamydia pneumoniae* infection, e.g., mice or rabbits, with the vaccine compositions. For example, *in vivo* vaccine composition challenge studies can be performed in the murine model of *Chlamydia pneumoniae* infection described by Moazed et al. (1997). Briefly, male homozygous apoE deficient and/or C57 BL/6J mice are immunized with vaccine compositions. Post-vaccination, the mice are mildly sedated by subcutaneous injection of a mixture of ketamine and xylazine, and inoculated intranasally with a total volume of 0.03-0.05 ml of organisms suspended in SPG medium or with SPG alone. The inoculations of *Chlamydia pneumoniae* are approximately 3×10^7 IFU/mouse. The mice are inoculated with *Chlamydia pneumoniae* at 8, 10, and 12 weeks of age. Tissues are then collected from the lung, spleen, heart, etc. at 1-20 weeks after the first inoculation. The presence of organisms is scored using PCR, histology and immunocytochemistry, or by quantitative culture/IFU after tissue homogenization.

Alternatively, *in vivo* vaccine composition challenge studies can be performed in the rabbit model of *Chlamydia pneumoniae* described by Laitinen et al. (1997). Briefly, New Zealand white rabbits (5 months old) are immunized with the vaccine compositions. Post-vaccination, the rabbits are sedated with Hypnorm, 0.3 ml/Kg of body weight, intramuscularly, and inoculated intranasally with a total of 0.5 ml of *Chlamydia pneumoniae* suspended in SPG medium or with SPG alone. The inoculations of *Chlamydia pneumoniae* are approximately 3×10^7 IFU/rabbit. The rabbits are reinfected in the same manner and with the same dose 3 weeks after the primary inoculation. Tissues are then collected 2 weeks after the primary infection and 1, 2, and 4 weeks after the reinfection. The presence of *Chlamydia pneumoniae* is scored using PCR, histology and immunocytochemistry, or by quantitative culture/IFU after tissue homogenization.

The vaccine compositions comprising nucleotide sequences or vectors into which the said sequences are inserted are in particular described in International Application No. WO 90/11092 and also in International Application No. WO 95/11307.

The nucleotide sequence constituting the vaccine composition according to the invention may be injected into the host after having been coupled to compounds which promote the penetration of this polynucleotide inside the cell or its transport up to the cell nucleus. The resulting conjugates may be encapsulated into polymeric microparticles, as described in International Application No. WO 94/27238 (Medisorb Technologies International).

According to another embodiment of the vaccine composition according to the invention, the nucleotide sequence, preferably a DNA, is complexed with the DEAE-dextran (Pagano et al., 1967) or with nuclear proteins (Kaneda et al., 1989), with lipids (Felgner et al., 1987) or encapsulated into liposomes (Fraley et al., 1980) or alternatively introduced in the form of a gel facilitating its transfection into the cells (Midoux et al., 1993, Pastore et al., 1994). The polynucleotide or the vector according to the invention may also be in suspension in a buffer solution or may be combined with liposomes.

Advantageously, such a vaccine will be prepared in accordance with the technique described by Tacson et al. or Huygen et al. in 1996 or alternatively in accordance with the technique described by Davis et al. in International Application No. WO 95/11307.

Such a vaccine may also be prepared in the form of a composition containing a vector according to the invention, placed under the control of regulatory elements allowing its expression in humans or animals. It is possible, for example, to use, as vector for the *in vivo* expression of the polypeptide antigen of interest, the plasmid pcDNA3 or the plasmid pcDNA1/neo, both marketed by Invitrogen® & D Systems, Abingdon, United Kingdom). It is also possible to use the plasmid V1Jns.tPA, described by Shiver et al. in 1995. Such a vaccine will advantageously comprise, in addition to the recombinant vector, a saline solution, for example a sodium chloride solution.

The immunogenic compositions of the invention can also be utilized as part of methods for immunization, wherein such methods comprise administering to a host, e.g., a human host, an

immunizing amount of the immunogenic compositions of the invention. In a preferred embodiment, the method of immunizing is a method of immunizing against *Chlamydia pneumoniae*.

A pharmaceutically acceptable vehicle is understood to designate a compound or a combination of compounds entering into a pharmaceutical or vaccine composition which does not cause side effects and which makes it possible, for example, to facilitate the administration of the active compound, to increase its life and/or its efficacy in the body, to increase its solubility in solution or alternatively to enhance its preservation. These pharmaceutically acceptable vehicles are well known and will be adapted by persons skilled in the art according to the nature and the mode of administration of the active compound chosen.

As regards the vaccine formulations, these may comprise appropriate immunity adjuvants which are known to persons skilled in the art, such as, for example, aluminum hydroxide, a representative of the family of muramyl peptides such as one of the peptide derivatives of N-acetylmuramyl, a bacterial lysate, or alternatively incomplete Freund's adjuvant, Stimulon™ QS-21 (Aquila Biopharmaceuticals, Inc., Framingham, MA), MPL™ (3-O-deacylated monophosphoryl lipid A; RIBI ImmunoChem Research, Inc., Hamilton, MT), aluminum phosphate, IL-12 (Genetics Institute, Cambridge, MA).

Preferably, these compounds will be administered by the systemic route, in particular by the intravenous route, by the intranasal, intramuscular, intradermal or subcutaneous route, or by the oral route. More preferably, the vaccine composition comprising polypeptides according to the invention will be administered several times, spread out over time, by the intradermal or subcutaneous route.

Their optimum modes of administration, dosages and galenic forms may be determined according to criteria which are generally taken into account in establishing a treatment adapted to a patient, such as for example the patient's age or body weight, the seriousness of his general condition, tolerance of the treatment and the side effects observed.

The invention comprises the use of a composition according to the invention for the treatment or the prevention of cardiovascular diseases, preferably linked to the presence of atheroma, which are induced or worsened by *Chlamydia pneumoniae*.

Finally, the invention comprises the use of a composition according to the invention for the treatment or the prevention of respiratory diseases which are induced or worsened by the presence of *Chlamydia pneumoniae*, preferably asthma.

Other characteristics and advantages of the invention appear in the following examples and figures:

35 Legend to the figures :

Figure 2 : Analysis of the sequences and assembling

Figure 3 : Finishing techniques

Figure 3a) : Assembly map

Figure 3b) : Determination and use of the orphan ends of the contigs

5

EXAMPLES

Experimental procedures

10

Cells

The *Chlamydia pneumoniae* strain (CM1) used by the inventors is obtained from ATCC (American Culture Type Collection) where it has the reference number ATCC 1360-VR.

15 It is cultured on HeLa 229 cells, obtained from the American Type Culture Collection, under the reference ATCC CCL-2.1.

Culture of the cells

The HeLa ATCC CCL-2.1 cells are cultured in 75-ml cell culture flasks (Corning). The culture medium is Dulbecco's modified cell culture medium (Gibco BRL No. 04101965) supplemented with MEM amino acids (Gibco BRL - No. 04301140) L (5 ml per 500 ml of medium) and 5% foetal calf serum (Gibco BRL No. 10270 batch 40G8260K) without antibiotics or antifungals.

20 The cell culture stock is maintained in the following manner. The cell cultures are examined under an inverted microscope. 24 hours after confluence, each cellular lawn is washed with PBS (Gibco BRL No. 04114190), rinsed and then placed for 5 min in an oven in the presence of 3 ml of trypsin (Gibco BRL No. 25200056). The cellular lawn is then detached and then resuspended in 25 120 ml of culture medium, the whole is stirred in order to make the cellular suspension homogeneous. 30 ml of this suspension are then distributed per cell culture flask. The flasks are kept in a CO₂ oven (5%) for 48 hours at a temperature of 37°C. The cell stock is maintained so as to have available daily 16 flasks of subconfluent cells. It is these subconfluent cells which will be used so as to be infected with Chlamydia. 25-ml cell culture flasks are also used, these flasks are prepared in a similar manner 30 but the volumes used for maintaining the cells are the following: 1 ml of trypsin, 28 ml of culture medium to resuspend the cells, 7 ml of culture medium are used per 25-ml flask.

Infection of the cells with Chlamydia

Initially, the Chlamydiae are obtained frozen from ATCC (-70°C), in suspension in a volume of 1 ml. This preparation is slowly thawed, 500 µl are collected and brought into contact with 35 subconfluent cells, which are obtained as indicated above, in a 25-ml cell culture flask, containing 1 ml of medium, so as to cover the cells. The flask is then centrifuged at 2000 rpm in a "swing" rotor for microtitre plates, the centrifuge being maintained at a temperature of 35°C. After centrifugation,

the two flasks are placed in an oven at 35°C for three hours. 6 ml of culture medium containing cycloheximide (1 µg/ml) are then added and the flask is stored at 35°C. After 72 hours, the level of infection is evaluated by direct immunofluorescence and by the cytopathogenic effect caused to the cells.

5 Direct immunofluorescence

Starting with infected cells, which were obtained as indicated above, a cellular smear is deposited with a Pasteur pipette on a microscope slide. The cellular smear is fixed with acetone for 10 minutes; after draining the acetone, the smear is covered with 30 µl of murine monoclonal antibodies directed against MOMP (major outer membrane protein) of *Chlamydia* (Syva, Biomérieux) labelled with fluorescein isothiocyanate. The whole is then incubated in a humid chamber at a temperature of 37°C. The slides are then rinsed with water, slightly dried, and then after depositing a drop of mounting medium, a coverslip is mounted before reading. The reading is carried out with the aid of a fluorescence microscope equipped with the required filters (excitation at 490 nm, emission at 520 nm).

15 Harvesting of the *Chlamydia pneumoniae*

After checking the infection by direct immunofluorescence, carried out as indicated above, the culture flasks are opened under a sterile cabinet, sterile glass beads with a diameter of the order of a millimeter are placed in the flask. The flask is closed and then vigorously stirred while being maintained horizontally, the cellular lawn at the bottom, so that the glass beads can have a mechanical action on the cellular lawn. Most of the cells are thus detached or broken; the effect of the stirring is observed under an optical microscope so as to ensure proper release of *Chlamydiae*.

20 Large-scale infection of the cell cultures

The product of the *Chlamydiae* harvest (culture medium and cellular debris) is collected with a pipette, and distributed into three cell culture flasks containing subconfluent HeLa ATCC CCL-2.1 cells, obtained as indicated above. The cells thus inoculated are placed under gentle stirring (swing) in an oven at 35°C. After one hour, the flasks are kept horizontally in an oven so that the culture medium covers the cells for 3 hours. 30 ml of culture medium containing actydione (1 µg/ml) are then added to each of the flasks. The culture flasks are then stored at 35°C for 72 hours. The cells thus infected are examined under an optical microscope after 24 hours, the cytopathogenic effect is evaluated by the appearance of cytoplasmic inclusions which are visible under an inverted optical microscope. After 72 hours, the vacuoles containing the *Chlamydiae* occupy the cytoplasm of the cell and push the cell nucleus sideways. At this stage, numerous cells are spontaneously destroyed and have left free elementary bodies in the culture medium. The *Chlamydiae* are harvested as described above and are either frozen at -80°C or used for another propagation.

35 Purification of the *Chlamydiae*

The product of the *Chlamydia* harvests is stored at -80°C and thawed on a water bath at

room temperature. After thawing, each tube is vigorously stirred for one minute and immersed for one minute in an ultrasound tank (BRANSON 1200); the tubes are then stirred by inverting before being centrifuged for 5 min at 2000 rpm. The supernatant is carefully removed and kept at cold temperature (ice). The supernatant is vigorously stirred and then filtered on nylon filters having pores of 5 microns in diameter on a support (Nalgene) allowing a delicate vacuum to be established under the nylon filter. For each filtration, three nylon filters are superposed; these filters are replaced after every 40 ml of filtrate. Two hundred milliliters of filtration product are kept at cold temperature, and then after stirring by inverting, are centrifuged at 10,000 rpm for 90 min, the supernatant is removed and the pellet is taken up in 10 ml of 10 mM Tris, vigorously vortexed and then centrifuged at 10,000 rpm for 90 min. The supernatant is removed and the pellet is taken up in a buffer (20 mM Tris pH 8.0, 50 mM KCl, 5 mM MgCl₂) to which 800 units of DNase I (Boehringer) are added. The whole is kept at 37°C for one hour. One ml of 0.5 M EDTA is then added, the whole is vortexed and frozen at -20°C.

Preparation of the DNA

The Chlamydiae purified above are thawed and subjected to a proteinase K (Boehringer) digestion in a final volume of 10 ml. The digestion conditions are the following: 0.1 mg/ml proteinase K, 0.1 × SDS at 55°C, stirring every 10 min. The product of digestion is then subjected to a double extraction with phenol-chloroform, two volumes of ethanol are added and the DNA is directly recovered with a Pasteur pipette having one end in the form of a hook. The DNA is dried on the edge of the tube and then resuspended in 500 µl of 2 mM Tris pH 7.5. The DNA is stored at 4°C for at least 24 hours before being used for the cloning.

Cloning of the DNA

After precipitation, the DNA is quantified by measuring the optical density at 260 nm. Thirty µg of Chlamydia DNA are distributed into 10 tubes of 1.5 ml and diluted in 300 µl of water. Each of the tubes is subjected to 10 applications of ultrasound lasting for 0.5 sec in a sonicator (unisonix XL2020). The contents of the 10 tubes are then grouped and concentrated by successive extractions with butanol (Sigma B1888) in the following manner: two volumes of butanol are added to the dilute DNA mixture. After stirring, the whole is centrifuged for five minutes at 2500 rpm and the butanol is removed. This operation is repeated until the volume of the aqueous phase is less than 1 ml. The DNA is then precipitated in the presence of ethanol and of 0.5 M sodium acetate pH 5.4, and then centrifuged for thirty minutes at 15,000 rpm at cold temperature (4°C). The pellet is washed with 75% ethanol, centrifuged for five minutes at 15,000 rpm and dried at room temperature. A tenth of the preparation is analysed on a 0.8% agarose gel. Typically, the size of the DNA fragments thus prepared is between 200 and 8000 base pairs.

To allow the cloning of the DNA obtained, the ends are repaired. The DNA is distributed in an amount of 10 µg/tube, in the following reaction medium: 100 µl final volume, 1 × buffer

(Biolabs 201L), 0.5 µl BSA 0.05 mg/ml, 0.1 mM dATP, 0.1 mM each of dGTP, dCTP or dTTP, 60,000 IU T4 DNA polymerase. The reaction is incubated for thirty minutes at 16°C. The contents of each of the tubes are then grouped before carrying out an extraction with phenol-chloroform and then precipitating the aqueous phase as described above. After this step, the DNA thus prepared is phosphorylated. For that, the DNA is distributed into tubes in an amount of 10 µg per tube, and then in a final volume of 50 µl, the reaction is prepared in the following manner: 1 mM ATP, 1 × kinase buffer, 10 IU T4 polynucleotide kinase (Biolabs 201L). The preparation is incubated for thirty minutes at 37°C. The contents of the tubes are combined and a phenol-chloroform extraction and then a precipitation are carried out in order to precipitate the DNA. The latter is then suspended in 1 µl of water and then the DNA fragments are separated according to their size on a 0.8% agarose gel (1 × TAE). The DNA is subjected to an electric field of 5 V/cm and then visualized on a UV table. The fragments whose size varies between 1200 and 2000 base pairs are selected by cutting out the gel. The gel fragment thus isolated is placed in a tube and then the DNA is purified with the Qiaex kit (20021 Qiagen), according to the procedure provided by the manufacturer.

15 Preparation of the vector

14 µg of the cloning vector pGEM-5Zf (Proméga P2241) are diluted in a final volume of 150 µl and are subjected to digestion with the restriction enzyme EcoRV 300 IU (Biolabs 195S) according to the protocol and with the reagents provided by the manufacturer. The whole is placed at 37°C for 150 min and then distributed in the wells of a 0.8% agarose gel subjected to an electric field of 5 V/cm. The linearized vector is visualized on a UV table, isolated by cutting out the gel and then purified by the Qiaex kit (Qiagen 20021) according to the manufacturer's recommendations. The purification products are grouped in a tube, the volume is measured and then half the volume of phenol is added and the whole is vigorously stirred for 1 min. Half the volume of chloroform-isoamyl alcohol 24:1 is added and vigorously stirred for 1 min. The whole is centrifuged at 15,000 rpm for 5 min at 4°C, the aqueous phase is recovered and transferred into a tube. The DNA is precipitated in the presence of 0.3 M sodium acetate, pH 5.4 and 3 volumes of ethanol and placed at -20°C for 1 hour. The DNA is then centrifuged at 15,000 rpm for 30 min at 4°C, the supernatant is removed while preserving the pellet, washed twice with 70% ethanol. After drying at room temperature, the DNA is suspended in 25 µl of water.

30 Phosphorylation of the vector

25 µl of the vector prepared in the preceding step are diluted in a final volume of 500 µl of the following reaction mixture:

After repair, the DNA is subjected to a phenol-chloroform extraction and a precipitation, the pellet is then taken up in 10 µl of water, the DNA is quantified by measuring the optical density at 260 nm. The quantified DNA is ligated into the vector pGEM-5Zf(+) prepared by the restriction

enzyme EcoRV and dephosphorylated (see preparation of the vector). The ligation is carried out under three conditions which vary in the ratio between the number of vector molecules and the number of insert molecules. Typically, an equimolar ratio, a ratio of 1:3 and a ratio of 3:1 are used for the ligations which are, moreover, carried out under the following conditions: vector PGEm-5Zf(+)
5 25 ng, cut DNA, ligation buffer in a final volume of 20 µl with T4 DNA ligase (Amersham E70042X); the whole is then placed in a refrigerator overnight and then a phenol-chloroform extraction and a precipitation are carried out in a conventional manner. The pellet is taken up in 5 µl of water.

Transformation of the bacteria

Plating of the bacteria

10 Petri dishes containing LB Agar medium containing ampicillin (50 µg/ml), Xgal (280 µg/ml) [5-bromo-4-chloro-indolyl-beta-D-galactopyranoside (Sigma B-4252)], IPTG (140 µg/ml) [isopropyl-beta-D-thiogalactoside (Sigma I-6758)] are used, 50 and 100 µl of bacteria are plated for each of the ligations. The Petri dishes are placed upside down at 37°C for 15 to 16 hours in an oven. The number of "recombinant" positive clones is evaluated by counting the white colonies and
15 the blue colonies which are thought to contain the vector alone.

Evaluation of the "recombinant" positive clones

Ninety-four white colonies and two blue colonies are collected with the aid of sterile cones and are deposited at the bottom of the wells of plates designed for carrying out the amplification techniques. 30 µl of the following reaction mixture are added to each well: 1.7 mM MgCl₂, 0.2 mM
20 each of dATP, dCTP, dGTP and dTTP, two synthetic oligonucleotides corresponding to sequences flanking the cloning site on either side and orienting the synthesis of the DNA in a convergent manner (0.5 µM RP and PU primers, 1 U TAQ polymerase (GibcoBRL 18038-026)).

The colonies thus prepared are subjected to a temperature of 94°C for 5 min and then to 30 thermal cycles composed of the following steps: 94°C for 40 s, 50°C for 30 s, 72°C for 180 s. The
25 reaction is then kept for 7 min at 72°C and then kept at 4°C.

The amplification products are deposited on an agarose gel (0.8%), stained with ethidium bromide, subjected to electrophoresis, and then analysed on an ultraviolet table. The presence of an amplification fragment having a size greater than 500 base pairs indicates the presence of an insert. The bacterial clones are then prepared so as to study the sequence of their insert.

Sequencing

30 To sequence the inserts of the clones obtained as above, these were amplified by PCR on bacteria cultures carried out overnight using the primers for the vectors flanking the inserts. The sequence of the ends of these inserts (on average 500 bases on each side) was determined by automated fluorescent sequencing on an ABI 377 sequencer, equipped with the ABI Prism DNA
35 Sequencing Analysis software (version 2.1.2).

Analysis of the sequences

The sequences obtained by sequencing in a high-yield line (Figure 1) are stored in a database; this part of the production is independent of any treatment of the sequences. The sequences are extracted from the database, avoiding all the regions of inadequate quality, that is to say the regions for which uncertainties are observed on the sequence at more than 95%. After extraction, the sequences are introduced into a processing line, the diagram of which is described in Figure 2. In a first path of this processing line, the sequences are assembled by the Gap4 software from R. Staden (Bonfield et al., 1995) (OS UNIX/SUN Solaris); the results obtained by this software are kept in the form of two files which will be used for a subsequent processing. The first of these files provides information on the sequence of each of the contigs obtained. The second file represents all the clones participating in the composition of all the contigs as well as their positions on the respective contigs.

The second processing path uses a sequence assembler (TIGR-Asmg assembler UNIX/SUN Solaris); the results of this second processing path are kept in the form of a file in the TIGR-Asmg format which provides information on the relationship existing between the sequences selected for the assembly. This assembler is sometimes incapable of linking contigs whose ends overlap over several hundreds of base pairs.

The results obtained from these two assemblers are compared with the aid of the BLAST program, each of the contigs derived from one assembly path being compared with the contigs derived from the other path.

For the two processing paths, the strict assembly parameters are fixed (95% homology, 30 superposition nucleotides). These parameters avoid 3 to 5% of the clones derived from eukaryotic cells being confused with sequences obtained from the clones derived from *Chlamydia pneumoniae*. The eukaryotic sequences are however preserved during the course of this project; the strategy introduced, which is described below, will be designed, inter alia, not to be impeded by these sequences derived from contaminating clones.

The results of these two assemblers are processed in a software developed for this project. This software operates on a Windows NT platform and receives, as data, the results derived from the STADEN software and/or the results derived from the TIGR-Asmg assembler, the software, results, after processing of the data, in the determination of an assembly map which gives the proximity relationship and the orientation of the contigs in relation to one another (Figure 3a). Using this assembly map, the software determines all the primers necessary for finishing the project. This treatment, which will be detailed below, has the advantage of distinguishing the isolated sequences derived from the contaminations, by the DNA eukaryotic cells, of the small-sized sequences clearly integrated into the project by the relationships which they establish with contigs. In order to allow, without any risk of error, the arrangement and the orientation of the contigs in relation to one another, a statistical evaluation of the accuracy of the names (naming) "naming" of sequence is made from the results of "contigation". This evaluation makes it possible to give each of the clone plates, as well as each of the subsets of plates, a weight which is inversely proportional to probable error rate existing in

the "naming" of the sequences obtained from this plate or from a subset of this plate. In spite of a low error rate, errors may occur throughout the steps of production of the clones and of the sequences. These steps are numerous, repetitive and although most of them are automated, others, like the deposition in the sequencers, are manual; it is then possible for the operator to make mistakes such as the inversion of two sequences. This type of error has a repercussion on the subsequent processing of the data, by resulting in relationships (between the contigs) which do not exist in reality, then in attempts at directed sequencing between the contigs which will end in failure. It is because of this that the evaluation of the naming errors is of particular importance since it allows the establishment of a probabilistic assembly map from which it becomes possible to determine all the clones which will serve as template to obtain sequences separating two adjacent contigs. Table 2 of parent U.S. application serial No. 60/107078 filed November 4, 1998 and French application 97-14673 filed November 21, 1997, each of which is incorporated by reference herein in its entirety, gives the clones and the sequences of the primers initially used during the initial operations.

To avoid the step which consists in ordering and then preparing the clones by conventional microbiological means, outer and inner primers oriented towards the regions not yet sequenced are defined by the software. The primers thus determined make it possible to prepare, by PCR, a template covering the nonsequenced region. It is the so-called outer primers (the ones most distant from the region to be sequenced) which are used to prepare this template. The template is then purified and a sequence is obtained on each of the two strands during 2 sequencing reactions which each use one of the 2 inner primers. In order to facilitate the use of this approach, the two outer primers and the two inner primers are prepared and then stored on the same position of 4 different 96-well plates. The two plates containing the outer primers are used to perform the PCRs which will serve to prepare the templates. These templates will be purified on purification columns preserving the topography of the plates. Each of the sequences will be obtained using primers situated on one and then on the other of the plates containing the inner primers. This distribution allows a very extensive automation of the process and results in a method which is simple to use for finishing the regions not yet sequenced. Table 3 of parent U.S. application serial No. 60/107078 filed November 4, 1998 and French application 97-14673 filed November 21, 1997, each of which is incorporated by reference herein in its entirety, gives the names and the sequences of the primers used for finishing *Chlamydia pneumoniae*.

Finally, a number of contigs exist in a configuration where one of their ends is not linked to any other contig end (Figure 3b) by a connecting clone relationship (a connecting clone is defined as a clone having one sequence end on a contig and the other end of its sequence on another contig; furthermore, this clone must be derived from a plate or a subset of plates with adequate naming quality). For the *Chlamydia pneumoniae* project, this particular case occurred 24 times. Two adjacent PCR primers orienting the synthesis of the DNA towards the end of the consensus sequence are defined for each of the orphan ends of the consensus sequence. The primer which is closest to the end

of the sequence is called the inner primer whereas the primer which is more distant from the end of the sequence is called the outer primer. The outer primers are used to explore the mutual relationship between the orphan ends of the different contigs. The presence of a single PCR product and the possibility of amplifying this product unambiguously using the inner primers evokes the probable relationship between the contigs on which the primers which allowed the amplification are situated. This relationship will be confirmed by sequencing and will allow the connection between the orphan ends of the consensus sequences. This strategy has made it possible to obtain a complete map of the *Chlamydia pneumoniae* chromosome and then to finish the project.

Quality control

All the bases not determined with certainty in the chromosomal sequence were noted and the density of uncertainties was measured on the entire chromosome. The regions with a high density of uncertainties were noted and the PCR primers spanning these regions were drawn and are represented in Table 4 of parent U.S. application serial No. 60/107078 filed November 4, 1998 and French application 97-14673 filed November 21, 1997 each of which is incorporated by reference herein in its entirety.

The sequence of each of the PCR products was obtained with two operational primers different from the amplification primers. The sequences were obtained in both directions for all the PCRs (100% success).

Data banks

Local reorganizations of major public banks were used. The protein bank used consists of the nonredundant fusion of the Genpept bank (automated translation of GenBank, NCBI; Benson et al., 1996).

The entire BLAST software (public domain, Altschul et al., 1990) for searching for homologies between a sequence and protein or nucleic data banks was used. The significance levels used depend on the length and the complexity of the region tested as well as the size of the reference bank. They were adjusted and adapted to each analysis.

The results of the search for homologies between a sequence according to the invention and protein or nucleic data banks are presented and summarized in Table 1 below.

Table 1: List of coding chromosome regions and homologies between these regions and the sequence banks.

Legend to Table 1: Open reading frames are identified with the GenMark software version 2.3A (GenePro), the template used is *Chlamydia pneumoniae* of order 4 on a length of 196 nucleotides with a window of 12 nucleotides and a minimum signal of 0.5. The reading frames ORF2 to ORF 1137 are numbered in order of appearance on the chromosome, starting with ORF2 (ORF column). The positions of the beginning and of the end are then given in column 2 (position). When the position of the beginning is greater than the position of the end, this means that the region is

encoded by the strand complementary to the sequence which was given in the sequence SEQ ID No. 1.

All the putative products were subjected to a search for homology on GENPEPT (release 102 for SEQ ID No. 2 to SEQ ID No. 1137, and release 108 for SEQ ID No. 1138 to SEQ ID No. 1291 and SEQ ID No. 6844 to SEQ ID No. 6849) with the BLASTP software (Altschul et al. 1990). With, as parameters, the default parameters with the exception of the expected value E set at 10^{-5} (for SEQ ID No. 2 to SEQ ID No. 1137) and P value set at e^{-10} (for SEQ ID No. 1138 to SEQ ID No. 1291 and SEQ ID No. 6844 to SEQ ID No. 6849). Subsequently, only the identities greater than 30% (1% column) were taken into account. The description of the most homologous sequence is given in the Homology column; the identifier for the latter sequence is given in the ID column and the animal species to which this sequence belongs is given in the Species column. The Homology score is evaluated by the sum of the blast scores for each region of homology and reported in the Score column.

Materials and Methods for transmembrane domains:

The DAS software was used as recommended by the authors (Cserzo et al., 1997).

This method uses, to predict the transmembrane domains, templates derived from a sampling of selected proteins. All the regions for which a "Cutoff" greater than 1.5 was found by the program were taken into account.

Additional ORF Finder Programs

For this analysis, two additional ORF finder programs were used to predict potential open reading frames of a minimum length of 74 amino acids; Glimmer (Salzberg, S.L., Delcher, A., Kasif, S., and W. White. 1998. Microbial gene identification using interpolated Markov models. Nucleic Acids Res. 26:544-548.), and an in-house written program. The in-house program used a very simple search algorithm. The analysis required the that the genomic DNA sequence text be in the 5' to 3' direction, the genome is circular, and that TAA, TAG, and TGA are stop codons. The search parameters were as follows:

- (1) A search for an ORF that started with a GTG codon was performed. If no GTG codons were found, then a search for an ATG codon was performed. However, if a GTG codon was found, then a search downstream for a ATG codon was performed. All start and stop nucleotide positions were recorded.
- (2) A search for an ORF that started with a TTG codon was performed. If no TTG codons were found, then a search for a ATG codon was performed. However, if a TTG codon was found, then a search downstream for a ATG codon was performed. All start and stop nucleotide positions were recorded.
- (3) The analysis described in steps 1 and 2 were repeated for the opposite strand of DNA sequence.

- (4) A search for ORFs that determined all ORF lengths using start and stop positions in the same reading frames was performed.
- (5) All ORFs whose DNA length was less than 225 nucleotides were eliminated from the search.

5 Surface Exposed Protein Search Criteria

Potential cell surface vaccine targets are outer membrane proteins such as porins, lipoproteins, adhesions and other non-integral proteins. In *Chlamydia psittaci*, the major immunogens is a group of putative outer membrane proteins (POMPs) and no homologs have been found in *Chlamydia pneumoniae* and *Chlamydia trachomatis* by traditional analysis (Longbottom, D., Russell, 10 M., Dunbar, S.M., Jones, G.E., and A.J. Herring. 1998. Molecular Cloning and Characterization of the Genes Coding for the Highly Immunogenic Cluster of 90-Kilodalton Envelope Proteins from *Chlamydia psittaci* Subtype That Causes Abortion in Sheep. Infect Immun 66:1317-1324.) Several putative outer membrane proteins have been identified in *Chlamydia pneumoniae*, all of which may represent vaccine candidates. The major outer membrane protein (MOMP) gene (omp1) has been 15 found in various isolates of *Chlamydia pneumoniae* (Jantos, CA., Heck, S., Roggendorf, R., Sen-Gupta, M., and Hegemann, JH. 1997. Antigenic and molecular analyses of different chlamydia pneumoniae strains. J. Clin Microbiology 35(3):620-623.) Various criteria, as listed below, were used to identify putative surface exposed ORFs from the genomic DNA sequence of *Chlamydia pneumoniae* (French application 97-14673 filed 21 November 1997). Any ORF which met any one or 20 more of the individual criteria were listed in this category.

Protein homology searches were done using the Blastp 2.0 tool (Altschul, S.F.; Madden, T.L., Schaffer, A.A., Zhang, J., Zhang, Z., Miller, W., and D.J. Lipman. 1997. Gapped BLAST and PSI-BLAST: a new generation of protein database search programs. Nucleic Acids Res. 25:3389-3402.) An ORF product was labeled surface exposed if there was homology to a known, or 25 hypothetical, or putative surface exposed protein with a P score better than e^{-10} .

Most, if not all, proteins that are localized to the membrane of bacteria, via a secretory pathway, contain a signal peptide. A software program, SignalP, analyzes the amino acid sequence of an ORF for such a signal peptide (Nielsen, H., Engelbrecht, J., Brunak, S., and G. von Heijne. 1997. Identification of prokaryotic and eukaryotic signal peptides and prediction of their cleavage sites. 30 Protein Engineering 10:1-6.) The first 60 N-terminal amino acids of each ORF were analyzed by SignalP using the Gram-Negative software database. The output generates four separate values, maximum C, maximum Y, maximum S, and mean S. The S-score, or signal region, is the probability of the position belonging to the signal peptide. The C-score, or cleavage site, is the probability of the position being the first in the mature protein. The Y-score is the geometric average of the C-score and 35 a smoothed derivative of the S-score. A conclusion of either a Yes or No is given next to each score. If all four conclusions are Yes and the C-terminal amino acid is either a phenylalanine (F) or a tyrosine (Y), the ORF product was labelled outer membrane (Struyve, M., Moons, M., and J. Tommassen.

1991. Carboxy-terminal Phenylalanine is Essential for the Correct Assembly of a Bacterial Outer Membrane Protein. J. Mol. Biol. 218:141-148.)

The program called Psort, determines the localization of a protein based on its signal sequence, recognition of transmembrane segments, and analysis of its amino acid composition (Nakai, K., and M. Kanehisa. 1991. Expert system for predicting protein localization sites in gram-negative bacteria. Proteins 11:95-110.) An ORF product is considered to be an outer membrane protein if the output data predicts the protein as outer membrane with a certainty value of 0.5 or better and whose value is at least twice as large as the next predicted localized certainty value.

Finally, ORF products that were not predicted to be outer membrane or surface exposed, based on the above criteria, were further analyzed. The blastp output data for these ORFs were searched using various general and specific keywords, suggestive of known cell surface exposed proteins. An ORF was labeled surface exposed if the keywords matched had a Blastp hit, had a P score better than e^{-10} , and that there was no better data indicating otherwise. The following is a list of the searched keywords:

15

	Adhesion	Adhesin	Invasin	Invasion	Extensin	
	Omp	Outer Surface	Porin	Outer Membrane		
	Cell Surface	Cell Wall	Pilus	Pilin	Flagellar sheath	BtuB
	Cir	ChuA	CopB	ExeD	FadL	FecA
20	FepA	FhuA	FmdC	FomA	FrpB	GspD
	HemR	HgbA	Hgp	HmbR	HmuR	HMW
	HrcC	Hrp	InvG	LamB	LbpA	LcrQ
	Lmp1	MxiD	MOMP	PilE	HpaA	NolW
	NspA	OpcP	OpnP	Opr	OspA	PhoE
25	PldA	Por	PscC	PulD	PupA	QuiX
	RafY	ScrY	SepC	ShuA	SomA	SpiA
	Tbp1	Yop	YscC	mip	Tol	

Those ORFs that did not meet the minimum requirement for being an outer membrane protein based on the above search criteria but which were homologous to identified outer membrane ORFs in *Chlamydia trachomatis* were included. The *Chlamydia trachomatis* genome (French patent applications FR97-15041, filed 28 November 1997 and 97-16034 filed 17 December 1997) was analyzed using the above search criteria and a number of outer membrane ORFs were identified. These *Chlamydia trachomatis* ORFs were then tested against the *Chlamydia pneumoniae* genome using Blastp. Any *Chlamydia pneumoniae* ORF with a Blastp P-value better than e^{-10} against a *Chlamydia trachomatis* outer membrane was included in this section, if there was no better data

indicating otherwise. A list of ORFs in the *Chlamydia pneumoniae* genome encoding putative surface exposed proteins is set forth above in the specification.

Identification of Putative Lipoproteins in the Genome of *Chlamydia pneumoniae*

5 Lipoproteins are the most abundant post-translationally modified bacterial secretory proteins (Pugsley, A. P., 1993. The complete general secretory pathway in Gram-negative bacteria. Microbiol. Rev. 57:50-108). The characteristic features of lipoproteins are a thiol-linked diacylglyceride and an amine-linked monoacyl group on the cysteine that becomes the amino-terminal residue after signal peptide cleavage by Signal Peptidase II.

10 (Pugsley, A. P., 1993. The complete general secretory pathway in Gram-negative bacteria. Microbiol. Rev. 57:50-108). The identification of putative lipoproteins from the genomic sequencing of *Chlamydia pneumoniae* was done by examining the deduced amino acid sequence of identified ORFs for the presence of a signal peptide with a Signal Peptidase II cleavage site analogous to the consensus sequence for prolipoprotein modification and

15 processing reactions (Hayashi, S., and H. C. Wu. 1992. Identification and characterization of lipid-modified proteins in bacteria, p. 261-285. In N. M. Hooper and A. J. Turner (ed.) Lipid modification of proteins: A practical approach. Oxford University Press, New York; Sutcliffe, I. C. and R. R. B. Russell. 1995. Lipoproteins of Gram-positive bacteria. J. Bacteriol. 177:1123-1128.).

20 *Chlamydia pneumoniae* ORFs were initially screened for the most basic of lipoprotein characteristics, a cysteine in the first 30 amino acids of the deduced protein. ORFs with a standard start codon (ATG, GTG, or TTG) and having one or more of the following characteristics were selected for direct analysis of their first 30 amino acids:

(a) Significant Signal P value (at least two out of the four values are Yes)

25

(b) PSORT value indicating membrane passage (IM-inner membrane, Peri-periplasm, or OM-outer membrane)

(c) Identification of the word lipoprotein among the ORF blastp data set.

30

(d) A Blastp value of $<e^{-10}$ with a putative lipoprotein from *Chlamydia trachomatis*

(French applications 97-15041 filed 28 November 1997 and 97-16034 filed 17 December 1997).

The first 30 amino acids of each ORF in this set were analyzed for the characteristics commonly found in lipoprotein signal peptides (Pugsley, A. P., 1993. The complete general secretory

35 pathway in Gram-negative bacteria. Microbiol. Rev. 57:50-108; Hayashi, S., and H. C. Wu. 1992.

Identification and characterization of lipid-modified proteins in bacteria, p. 261-285. In N. M. Hooper and A. J. Turner (ed.) Lipid modification of proteins: A practical approach. Oxford University Press, New York; Sutcliffe, I. C. and R. R. B. Russell. 1995. Lipoproteins of Gram-positive bacteria. J. Bacteriol. 177:1123-1128.) Putative lipoprotein signal peptides were required to have a
5 cysteine between amino acid 10 and 30 and reach a minimum score of three based on the following criteria for lipoprotein signal peptides:

- (a) Identification of specific amino acids in specific positions around the cysteine which are part of the consensus Signal Peptidase II cleavage site (Hayashi, S., and H. C. Wu. 1992. Identification and characterization of lipid-modified proteins in bacteria, p. 261-285. In N. M.
10 Hooper and A. J. Turner (ed.) Lipid modification of proteins: A practical approach. Oxford University Press, New York); Sutcliffe, I. C. and R. R. B. Russell. 1995. Lipoproteins of Gram-positive bacteria. J. Bacteriol. 177:1123-1128). Since the identification of the cleavage site is the most important factor in identifying putative lipoproteins, each correctly positioned amino acid contributed toward reaching the minimum score of three. (b) A hydrophobic
15 region rich in alanine and leucine prior to the cleavage site (Pugsley, A. P., 1993. The complete general secretory pathway in Gram-negative bacteria. Microbiol. Rev. 57:50-108) contributed toward reaching the minimum score of three.
- (c) A short stretch of hydrophilic amino acids greater than or equal to 1 usually lysine or arginine following the N-terminal methionine (Pugsley, A. P., 1993. The complete
20 general secretory pathway in Gram-negative bacteria. Microbiol. Rev. 57:50-108) contributed toward reaching the minimum score of three.

A list of ORFs in the *Chlamydia pneumoniae* genome encoding putative lipoproteins is set forth above in the specification.

25 LPS-Related ORFs of *Chlamydia pneumoniae*

Lipopolysaccharide (LPS) is an important major surface antigen of *Chlamydia* cells. Monoclonal antibodies (Mab) directed against LPS of *Chlamydia pneumoniae* have been identified that can neutralize the infectivity of *Chlamydia pneumoniae* both in vitro and in vivo (Peterson, E.M., de la Maza, L.M., Brade, L., Brade, H. 1998. Characterization of a Neutralizing Monoclonal
30 Antibody Directed at the Lipopolysaccharide of *Chlamydia pneumoniae*. Infect. Immun. Aug. 66(8):3848-3855.) Chlamydial LPS is composed of lipid A and a core oligosaccharide portion and is phenotypically of the rough type (R-LPS) (Lukacova, M., Baumann, M., Brade, L., Mamat, U., Brade, H. 1994. Lipopolysaccharide Smooth-Rough Phase Variation in Bacteria of the Genus
~~*Chlamydia*. Infect. Immun. June 62(6):2270-2276.)~~ The lipid A component is composed of fatty acids
35 which serve to anchor LPS in the outer membrane. The core component contains sugars and sugar derivatives such as a trisaccharide of 3-deoxy-D-manno-octulosonic acid (KDO) (Reeves, P.R., Hobbs, M., Valvano, M.A., Skurnik, M., Whitfield, C., Coplin, D., Kido, N., Klena, J., Maskell, D.,

Raetz, C.R.H., Rick, P.D. 1996. *Bacterial Polysaccharide Synthesis and Gene Nomenclature* pp. 10071-10078, Elsevier Science Ltd.). The KDO gene product is a multifunctional glycosyltransferase and represents a shared epitope among the Chlamydia. For a review of LPS biosynthesis see, e.g., Schnaitman, C.A., Klena, J.D. 1993. Genetics of Lipopolysaccharide
5 Biosynthesis in Enteric Bacteria. Microbiol. Rev. 57:655-682.

A text search of the ORF blastp results identified several genes that are involved in Chlamydial LPS production with a P score better than e^{-10} . The following key-terms were used in the text search: KDO, CPS (Capsular Polysaccharide Biosynthesis), capsule, LPS, rfa, rfb, rfc, rfe, rha, rhl, core, epimerase, isomerase, transferase, pyrophosphorylase, phosphatase, aldolase, heptose,
10 manno, glucose, lpxB, fibronectin, fibrinogen, fucosyltransferase, lic, lgt, pgm, tolC, rol, ChoP, phosphorylcholine, waaF, PGL-Tb1. A list of ORFs in the *Chlamydia pneumoniae* genome encoding putative polypeptides involved in LPS biosynthesis is set forth above in the specification.

Type III And Other Secreted Products

15 Type III secretion enables gram-negative bacteria to secrete and inject pathogenicity proteins into the cytosol of eukaryotic host cells (Hueck, C. J., 1998. Type III Protein Secretion Systems in Bacterial Pathogens of Animals and Plants. In Microbiology and Molecular Biology Reviews. 62:379-433.) These secreted factors often resemble eukaryotic signal transduction factors, thus enabling the bacterium to redirect host cell functions (Lee, C.A., 1997. Type III secretion
20 systems: machines to deliver bacterial proteins into eukaryotic cells? Trends Microbiol. 5:148-156.) In an attempt to corrupt normal cellular functions, Chlamydial pathogenicity factors injected into the host cytosol will nonetheless, as cytoplasmic constituents be processed and presented in the context of the Major Histocompatibility Complex (MHC class I). As such, these pathogenicity proteins represent MHC class I antigens and will play an important role in cellular immunity. Also included in this set
25 are secreted non-type III products that may play a role as vaccine components.

A text search of the ORF blastp results identified genes that are involved in *Chlamydia pneumoniae* protein secretion with a P score better than e^{-10} . The following key-terms were used in the text search in an effort to identify surface localized or secreted products: Yop, Lcr, Ypk, Exo, Pcr, Pop, Ipa, Vir, Ssp, Spt, Esp, Tir, Hrp, Mxi, hemolysin, toxin, IgA protease, cytolysin, tox, hap,
30 secreted and Mip.

Chlamydia pneumoniae ORFs that did not meet the above keyword search criteria, but have homologs in *Chlamydia trachomatis* that do meet the search criteria are included herein. The *Chlamydia trachomatis* genome (French patent applications FR97-15041, filed 28 November 1997 and 97-16034 filed 17 December 1997) was analyzed using the above search criteria and a number of
35 ORFs were identified. These *Chlamydia trachomatis* ORFs were tested against the *Chlamydia pneumoniae* genome using Blastp. Any *Chlamydia pneumoniae* ORF with a Blastp P value $< e^{-10}$ against a *Chlamydia trachomatis* homolog, identified using the above search criteria, was included. A

list of ORFs in the *Chlamydia pneumoniae* genome encoding putative secreted proteins is in the specification.

Chlamydia pneumoniae: RGD Recognition Sequence

5 Proteins that contain Arg-Gly-Asp (RGD) attachment site, together with integrins that serve as their receptor constitute a major recognition system for cell adhesion. The RGD sequence is the cell attachment site of a large number of adhesive extracellular matrix, blood, and cell surface proteins and nearly half of the known integrins recognize this sequence in their adhesion protein ligands. There are many RGD containing microbial proteins such as the penton protein of adenovirus,
10 the coxsackie virus, the foot and mouth virus and pertactin, a 69 kDa (kilodalton) surface protein of *Bordetella pertussis*, that serve as ligands through which these microbes bind to integrins on the cell surfaces and gain entry into the cell. The following provides evidence supporting the importance of RGD in microbial adhesion:

a) The adenovirus penton base protein has a cell rounding activity and when penton base was
15 expressed in *E. coli*, it caused cell rounding and cells adhered to polystyrene wells coated with the protein. Mutant analysis showed that both these properties required an RGD sequence. Virus mutants with amino acid substitutions in the RGD sequence, showed much less adherence to HeLa S3 cells, and also were delayed in virus reproduction (Bai, M., Harfe, B., and Freimuth, P. 1993. Mutations That Alter an RGD Sequence in the Adenovirus Type 2
20 Penton Base Protein Abolish Its Cell-Rounding Activity and Delay Virus Reproduction in Flat Cells. *J. Virol.* 67:5198-5205).

b) It has been shown that attachment and entry of coxsackie virus A9 to GMK cells were dependent on an RGD motif in the capsid protein VP1. VP1 has also been shown to bind $\alpha_v\beta_3$
25 integrin, which is a vitronectin receptor (Roivainen, M., Piirainen, L., Hovi, T., Virtanen, I., Riikonen, T., Heino, J., and Hyypia, T. 1994. Entry of Coxsackievirus A9 into Host Cells: Specific Interactions with $\alpha_v\beta_3$ Integrin, the Vitronectin Receptor *Virology*, 203:357-65).

c) During the course of whooping cough, *Bordetella pertussis* interacts with alveolar
30 macrophages and other leukocytes on the respiratory epithelium. Whole bacteria adheres by means of two proteins, filamentous hemagglutinin (FHA) and pertussis toxin. FHA interacts with two classes of molecules on macrophages, galactose containing glycoconjugates and the integrin CR3. The interaction between CR3 and FHA involves recognition of RGD sequence at the positions 1097-1099 in FHA (Relman, D., Tuomanen, E., Falkow, S., Golenbock, D. T.,
35 Saukkonen, K., and Wright, S. D. "Recognition of a Bacterial Adhesin by an Integrin: Macrophage CR3 Binds Filamentous Hemagglutinin of *Bordetella Pertussis*." *Cell*, 61:1375-1382 (1990)).

d) Pertactin, a 69 kDa outer membrane protein of *Bordetella pertussis*, has been shown to promote attachment of Chinese hamster ovary cells (CHO). This attachment is mediated by recognition of RGD sequence in pertactin by integrins on CHO cells and can be inhibited by synthetic RGD containing peptide homologous to the one present in pertactin (Leininger, E., Roberts, M., Kenimer, J. G., Charles, I. G., Fairweather, N., Novotny, P., and Brennan, M. J. 1991. Pertactin, an Arg-Gly-Asp containing *Bordetella pertussis* surface protein that promotes adherence of mammalian cells Proc. Natl. Acad. Sci. USA, 88:345-349).

e) The RGD sequence is highly conserved in the VP1 protein of foot and mouth disease virus (FMDV). Attachment of FMDV to baby hamster kidney cells (BHK) has been shown to be mediated by VP1 protein via the RGD sequence. Antibodies against the RGD sequence of VP1 blocked attachment of virus to BHK cells (Fox, G., Parry, N. R., Barnett, P. V., McGinn, B., Rowland, D. J., and Brown, F. 1989. The Cell Attachment Site on Foot-and-Mouth Disease Virus Includes the Amino Acid Sequence RGD (Arginine-Glycine-Aspartic Acid) J. Gen. Virol., 70:625-637).

It has been demonstrated that bacterial adherence can be based on interaction of a bacterial adhesin RGD sequence with an integrin and that bacterial adhesins can have multiple binding site characteristic of eukaryotic extracellular matrix proteins. RGD recognition is one of the important mechanisms used by microbes to gain entry into eukaryotic cells.

The complete deduced protein sequence of the *Chlamydia pneumoniae* genome was searched for the presence of RGD sequence. There were a total of 54 ORFs that had one or more RGD sequences. Not all RGD containing proteins mediate cell attachment. It has been shown that RGD containing peptides that have proline immediately following the RGD sequence are inactive in cell attachment assays (Pierschbacher & Ruoslahti. 1987. Influence of stereochemistry of the sequence Arg-Gly-Asp-Xaa on binding specificity in cell adhesion. J. Biol. Chem. 262:17294-98). ORFs that had RGD, with proline as the amino acid following the RGD sequence were excluded from the list. Also, RGD sequence may not be available at the surface of the protein or may be present in a context that is not compatible with integrin binding. Since not all RGD- containing proteins are involved in cell attachment, several other criteria were used to refine the list of RGD- containing proteins. A list of ORFs in the *Chlamydia pneumoniae* genome encoding polypeptides with RGD recognition sequence(s) is in the specification.

Non-*Chlamydia trachomatis* ORFs

Chlamydia pneumoniae ORFs were compared to the ORFs in the *Chlamydia trachomatis* genome (French patent applications FR97-15041, filed 28 November 1997 and 97-16034 filed 17

December 1997) using Blastp. Any *Chlamydia pneumoniae* ORF with a Blastp P value worse than e

¹⁰ (i.e. $>e^{-10}$) against *Chlamydia trachomatis* ORFs are included in this section. A list of ORFs in the *Chlamydia pneumoniae* genome which are not found in *Chlamydia trachomatis* is set forth above in the specification.

5 Cell Wall Anchor Surface ORFs

Many surface proteins are anchored to the cell wall of Gram-positive bacteria via the conserved LPXTG motif (Schneewind, O., Fowler, A., and Faull, K.F. 1995. Structure of the Cell Wall Anchor of Surface Proteins in *Staphylococcus aureus*. Science 268:103-106). A search of the *Chlamydia pneumoniae* ORFs was done using the motif LPXTG. A list of ORFs in the *Chlamydia*
10 *pneumoniae* genome encoding polypeptides anchored to the cell wall is in the specification.

ATCC Deposits

Samples of *Chlamydia pneumoniae* were deposited with the American Type Culture Collection (ATCC), Rockville, Maryland, on November 19, 1998 and assigned the accession
15 number ---. Cells can be grown, harvested and purified, and DNA can be prepared as discussed above. In order to enable recovery of specific fragments of the chromosome, one can run targeted PCR reactions, whose amplification products can then be sequenced and/or cloned into any suitable vector, according to standard procedures known to those skilled in the art.

In addition, a sample of three pools of clones covering chromosomal regions of interest
20 were deposited with the American Type Culture Collection (ATCC), Rockville, Maryland, on November 19, 1998 and assigned the indicated accession number: —. Each pool of clones contains a series of clones. When taken together, the three pools in the sample cover a portion of the chromosome, with a redundancy of slightly more than two. The total number of clones in the sample is 196.

25 The clones cover the following three regions of interest:

- (i) position 30,000 to 40,000 of SEQ ID No. 1, referred to as region A;
- (ii) position 501,500 to 557,000 of SEQ ID No. 1, referred to as region B; and
- (iii) position 815,000 to 830,000 of SEQ ID No. 1, referred to as region C.

Table 4 lists groups of oligonucleotides to be used to amplify each of ORFs 2-1291
30 according to standard procedures known to those skilled in the art. Such oligonucleotides are listed as SEQ ID Nos. 1292 to 6451. For each ORF, the following is listed: one forward primer positioned 2,000 bp upstream of the beginning of the ORF; one forward primer positioned 200 bp upstream of the beginning of the ORF; one reverse primer positioned 2,000 bp downstream at the
end of ORF, which is 2,000 bp upstream of the end site of the ORF on the complementary strand;
35 and one reverse primer 200 bp downstream at the end of ORF, which is 200 bp upstream of the end site of the ORF on the complementary strand. The corresponding SEQ ID Nos. for the primers are listed in Table 4, where Fp is the proximal forward primer; Fd is the distal forward

primer; Bp is the proximal reverse primer; and Bd is the distal reverse primer. The positions of the 5' ends of each of these primers on the nucleotide sequence of SEQ ID No. 1 are shown in Table 5.

5 Table 6 lists oligonucleotides (SEQ ID Nos. 6452-6843) to be used to amplify the inserts of each of the 196 clones present in the pooled sample according to standard procedures well known to those of skill in the art. These primers can also be utilized to amplify the chromosomal region corresponding to the region A, B or C within which the particular insert lies. Their positions are indicated in Table 7.

10 The present invention is not to be limited in scope by the specific embodiments described herein, which are intended as single illustrations of individual aspects of the invention, and functionally equivalent methods and components are within the scope of the invention. Indeed, various modifications of the invention, in addition to those shown and described herein will become apparent to those skilled in the art from the foregoing description and accompanying drawings. Such modifications are intended to fall within the scope of the appended claims.

15 All publications and patent applications mentioned in this specification are herein incorporated by reference to the same extent as if each individual publication or patent application was specifically and individually indicated to be incorporated by reference.

TABLE 1							Species	Score	I%
ORF	Begin	End	Homology	ID	Species	Score			
ORF2	42	794	triosephosphate isomerase	L27492	<i>Thermotoga maritima</i>	567		54	
ORF3	1258	1614	putative						
ORF4	1807	2418	polypeptide deformylase	D90906	<i>Synechocystis</i> sp.	316		40	
ORF5	3393	2491	hypothetical protein	Z75208	<i>Bacillus subtilis</i>	338		42	
ORF6	3639	4067	unknown	U87792	<i>Bacillus subtilis</i>	117		38	
ORF7	5649	4270	putative						
ORF8	7463	6012	putative						
ORF9	8051	8962	putative						
ORF10	9129	9959	putative						
ORF11	10687	10361	putative						
ORF12	10927	11232	putative						
ORF13	11246	12727	amidase	U49269	<i>Moraxella catarrhalis</i>	1108		42	
ORF14	12691	14190	PET112	D90913	<i>Synechocystis</i> sp.	1044		46	
ORF15	14484	17249	POMP91A	U65942	<i>Chlamydia psittaci</i>	1074		43	
ORF16	16039	15770	putative						
ORF17	17845	20853	putative						
ORF18	21137	22042	putative						
ORF19	22046	23476	putative						
ORF20	23681	26110	putative						
ORF21	26109	25861	putative						
ORF22	26241	26978	putative						
ORF23	26960	27754	putative						
ORF24	27747	28577	putative						
ORF25	28887	29492	POMP91A	U65942	<i>Chlamydia psittaci</i>	180		39	
ORF26	29432	30028	POMP91A	U65942	<i>Chlamydia psittaci</i>	361		51	
ORF27	30024	31472	POMP91A	U65942	<i>Chlamydia psittaci</i>	879		54	
ORF28	31758	32288	putative 98 kDa outer membrane protein	U72499	<i>Chlamydia psittaci</i>	144		43	
ORF29	32201	33991	putative 98 kDa outer membrane protein	U72499	<i>Chlamydia psittaci</i>	1126		48	
ORF30	33852	34541	putative 98 kDa outer membrane protein	U72499	<i>Chlamydia psittaci</i>	589		62	
ORF31	34783	36063	POMP91B precursor	U65943	<i>Chlamydia psittaci</i>	469		46	
ORF32	36009	37529	putative 98 kDa outer membrane protein	U72499	<i>Chlamydia psittaci</i>	1338		51	
ORF33	37881	39362	putative 98 kDa outer membrane protein	U72499	<i>Chlamydia psittaci</i>	671		40	

ORF	Begin	End	Homology	ID	Species	Score	I%
ORF34	39418	39161	putative				
ORF35	39366	40715	POMP90A precursor	U65942	<i>Chlamydia psittaci</i>	904	47
ORF36	43076	41094	putative				
ORF37	43800	43066	putative				
ORF38	44828	43785	putative				
ORF39	45340	44753	homologous to unidentified <i>E. coli</i> protein o530; This 530 aa orf is 33 pct identical (14 gaps) to 525 residues of an approx. 640 aa protein YHES HAEIN SW: P44808	M96343 AE000184	<i>Bacillus subtilis</i> <i>Escherichia coli</i>	136 269	44 43
ORF40	45752	45372	ABC transporter, ATP-binding protein (yheS)	AE000596	<i>Helicobacter pylori</i>	878	39
ORF41	46996	45701	putative				
ORF42	47961	47569	hypothetical protein	D64001	<i>Synechocystis sp.</i>	404	37
ORF43	48960	48040	Lon protease-like protein	X74215	<i>Homo sapiens</i>	1232	54
ORF44	51452	50133	unknown	Z54285	<i>Schizosaccharomyces pombe</i>	781	47
ORF45	52606	51335	putative				
ORF46	53684	53319	putative				
ORF47	54195	53746	heat-shock protein	U15010	<i>Legionella pneumophila</i>	975	45
ORF48	55278	56453	branched chain alpha-keto acid dehydrogenase E1-alpha	M97391	<i>Bacillus subtilis</i>	329	36
ORF49	56493	57266	branched chain alpha-keto acid dehydrogenase E1-beta	M97391	<i>Bacillus subtilis</i>	707	50
ORF50	57297	58526	putative				
ORF51	59851	58565	ComE	D90903	<i>Synechocystis sp.</i>	134	55
ORF52	61495	59924	putative				
ORF53	61324	62151	Hpr protein	X12832	<i>Bacillus subtilis</i>	136	36
ORF54	62132	62470	enzyme I (ptsI)	U32844	<i>Haemophilus influenzae</i>	381	35
ORF55	62474	63733	f831; This 831 aa orf is 46 pct identical (11 gaps) to 709 residues of an approx. 712 aa protein PT1A ECOLI SW: P32670	AE000326	<i>Escherichia coli</i>	123	34
ORF56	63881	64186	ORF107				
ORF57	64611	64318	putative	X17014	<i>Bacillus subtilis</i>	128	33
ORF58	65485	64673	dnaZX-like ORF put. DNA polymerase III	X06803	<i>Bacillus subtilis</i>	596	52
ORF59	65999	65301					

ORF	Begin	End	Homology	ID	Species	Score	I%
ORF60	66244	67281	putative				
ORF61	67265	67699	putative				
ORF62	67703	68539	putative				
ORF63	68805	70736	putative				
ORF64	69172	68831	putative				
ORF65	70642	71142	putative				
ORF66	71325	72029	putative				
ORF67	72060	73637	putative				
ORF68	74061	76175	Yqff	D84432	<i>Bacillus subtilis</i>	542	44
ORF69	78351	77680	porphobilinogen deaminase	D28503	<i>Clostridium josui</i>	262	42
ORF70	79356	78355	sms protein	D90914	<i>Synechocystis sp.</i>	736	52
ORF71	79983	79693	ribonuclease III (rnc)	AE000579	<i>Helicobacter pylori</i>	98	33
ORF72	80441	79938	ORF3	D64116	<i>Bacillus subtilis</i>	268	44
ORF73	80475	80969	putative				
ORF74	81296	83080	hypothetical protein	Y14079	<i>Bacillus subtilis</i>	893	38
ORF75	83291	83932	manganese superoxide dismutase	X77021	<i>Caenorhabditis elegans</i>	622	58
ORF76	84005	84769	acetyl-CoA carboxylase beta subunit (accD)	AE000604	<i>Helicobacter pylori</i>	602	50
ORF77	84975	85244	deoxyuridinetriphosphatase (dut)	U32776	<i>Haemophilus influenzae</i>	110	41
ORF78	85123	85425	deoxyuridine 5'-triphosphate nucleotidohydrolase (dut)	AE000596	<i>Helicobacter pylori</i>	265	68
ORF79	85397	85903	ORF2	L26916	<i>Pseudomonas aeruginosa</i>	173	34
ORF80	85909	86583	enzyme IIANtr	U18997	<i>Escherichia coli</i>	170	42
ORF81	86626	88065	putative				
ORF82	89257	91026	putative				
ORF83	91291	93030	putative				
ORF84	93295	94086	putative				
ORF85	95285	94707	putative				
ORF86	95667	96557	putative				
ORF87	96317	97456	putative				
ORF88	98435	97968	putative				
ORF89	99460	98426	putative				
ORF90	100144	101325	elongation factor Tu	L22216	<i>Chlamydia trachomatis</i>	1917	95

DRF	Begin	End	Homology	ID	Species	Score	I%
DRF91	101457	101720	putative	L10348	<i>Thermus aquaticus thermophilus</i>	376	49
DRF92	101704	102273	transcription factor	D13303	<i>Bacillus subtilis</i>	458	63
DRF93	102356	102805	ribosomal protein L11	Z11839	<i>Thermotoga maritima</i>	642	51
DRF94	102835	103530	ribosomal protein L1	M89911	<i>Streptomyces antibioticus</i>	82	31
DRF95	103549	104058	ribosomal protein L10	X53178	<i>Synechocystis PCC6803</i>	325	47
DRF96	104096	104491	rp112 (AA 1-128)	X64172	<i>Staphylococcus aureus</i>	2740	52
DRF97	104601	108386	DNA-directed RNA polymerase beta chain	V00339	<i>Escherichia coli</i>	2947	54
DRF98	108401	112054	rpoC	M22622	<i>Leptospira biflexa</i>	514	62
DRF99	112033	112590	acetylornithine deacetylase (EC 5.1.1.16)	L19437	<i>Homo sapiens</i>	755	49
DRF100	112672	113682	transaldolase				
DRF101	113726	114121	putative				
DRF102	114711	114136	putative				
DRF103	115267	115755	putative				
DRF104	115911	116543	putative	X63855	<i>Thermus aquaticus thermophilus</i>	934	50
DRF105	116736	118055	ATPase alpha-subunit	D50528	<i>Acetabularia acetabulum</i>	147	32
DRF106	117968	118522	adenosine triphosphatase A subunit	U96487	<i>Desulfurococcus sp. SY</i>	751	48
DRF107	118530	119843	V-ATPase B subunit				
DRF108	119816	120457	putative	X76913	<i>Enterococcus hirae</i>	264	35
DRF109	120451	122430	v-type Na-ATPase	U67478	<i>Melhanococcus jannaschii</i>	184	31
DRF110	122504	122950	ATP synthase, subunit K	X05891	<i>Escherichia coli</i>	1679	49
DRF111	123528	126347	valyl-tRNA synthetase	U19250	<i>Streptomyces coelicolor</i>	427	37
DRF112	126332	129166	protein kinase-like protein	D49911	<i>Thermus thermophilus</i>	3107	41
DRF113	134690	129213	UvrA	U83196	<i>Chlamydia trachomatis</i>	1748	71
DRF114	134925	136382	pyruvate kinase	X61000	<i>Escherichia coli</i>	147	38
DRF115	137870	136482	HtrB protein				
DRF116	137899	138240	putative				
DRF117	138239	137928	putative				
DRF118	139558	138257	putative				
DRF119	140352	139516	YbbP	AB002150	<i>Bacillus subtilis</i>	231	46
DRF120	140498	141841	cyanide insensitive terminal oxidase	Y10528	<i>Pseudomonas aeruginosa</i>	538	50
DRF121	141855	142658	cyanide insensitive terminal oxidase	Y10528	<i>Pseudomonas aeruginosa</i>	310	40
DRF122	144258	143050	putative				
DRF123	145258	144494	putative				

ORF	Begin	End	Homology	ID	Species	Score	I%
ORF124	145454	146749	product similar to E. coli PhoH protein	Z97025	<i>Bacillus subtilis</i>	836	47
ORF125	147318	146767	putative				
ORF126	148261	147677	putative				
ORF127	149029	152157	isoleucyl-tRNA synthetase	U04953	<i>Homo sapiens</i>	2361	52
ORF128	154108	152201	leader peptidase I	D90904	<i>Synechocystis sp.</i>	225	47
ORF129	155135	154308	putative				
ORF130	155141	155467	YtiA	AF008220	<i>Bacillus subtilis</i>	201	43
ORF131	155703	156779	orf 361; translated orf similarity to SW: RF1_SALTY peptide chain release factor 1 of <i>Salmonella typhimurium</i>	X78969	<i>Coxiella burnetii</i>	863	59
ORF132	156748	157635	product similar to E.coli PRFA2 protein	Z49782	<i>Bacillus subtilis</i>	144	37
ORF133	157653	158996	Ffh	U82109	<i>Thermus aquaticus</i>	797	45
ORF134	159363	159986	tRNA (guanine-N1)-methyltransferase (trmD)	U32705	<i>Haemophilus influenzae</i>	545	49
ORF135	159880	160446	putative				
ORF136	160477	160839	ribosomal protein L19	X72627	<i>Synechocystis sp.</i>	319	50
ORF137	160898	161539	putative protein highly homologous to E. coli RNase HII	D32253	<i>Magnetospirillum sp.</i>	427	49
ORF138	161527	162153	5'guanylate kinase (gmk)	U32848	<i>Haemophilus influenzae</i>	385	43
ORF139	162144	162443	putative				
ORF140	162437	164098	methionyl-tRNA synthetase	AB004537	<i>Schizosaccharomyces pombe</i>	861	54
ORF141	165451	164228	exodeoxyribonuclease V (recD)	U32811	<i>Haemophilus influenzae</i>	432	32
ORF142	166349	165411	putative				
ORF143	166949	168442	putative				
ORF144	169416	171029	putative				
ORF145	170857	171459	putative				
ORF146	172652	173428	putative biotin-protein ligase	Z97992	<i>Schizosaccharomyces pombe</i>	292	44
ORF147	174626	173439	putative				
ORF148	174816	175613	putative				
ORF149	175598	175954	putative				
ORF150	175958	176935	putative				

ORF	Begin	End	Homology	ID	Species	Score	I%
ORF151	177708	176938	orf 3' of chaperonin homolog hypB [Chlamydia psittaci, pigeon strain P-1041, Peptide Partial, 98 aa]	S40172	<i>Chlamydia psittaci</i>	376	74
ORF152	177128	177376	putative	M69217	<i>Chlamydia pneumoniae</i>	2678	100
ORF153	179472	177841	putative	M69217	<i>Chlamydia pneumoniae</i>	498	99
ORF154	179822	179517	putative	D88209	<i>Bacillus licheniformis</i>	1088	38
ORF155	181793	179943	Pz-peptidase	AE000174	<i>Escherichia coli</i>	401	42
ORF156	182628	181876	o247; This 247 aa orf is 51 pct identical (0 gaps) to 117 residues of an approx. 160 aa protein YPH7 CHRVI SW: P45371				
ORF157	184420	183074	glutamate-1-semialdehyde 2,1- aminomutase	X53696	<i>Escherichia coli</i>	823	41
ORF158	184988	184467	ORF o211	U28377	<i>Escherichia coli</i>	87	54
ORF159	185483	185112	hypothetical protein	D90906	<i>Synechocystis sp.</i>	91	33
ORF160	185902	185483	ribose 5-phosphate isomerase	U28377	<i>Escherichia coli</i>	111	41
ORF161	186174	185839	ribose 5-phosphate isomerase A (SP:P27252)	U32729	<i>Haemophilus influenzae</i>	190	46
ORF162	187720	186587	hypothetical	D83026	<i>Bacillus subtilis</i>	536	42
ORF163	188318	190933	ATP-dependent protease binding subunit	M29364	<i>Escherichia coli</i>	2010	53
ORF164	191090	191635	putative				
ORF165	191547	192743	putative				
ORF166	192969	193469	putative				
ORF167	194044	193610	putative				
ORF168	194196	195809	unknown				
ORF169	196088	198073	DNA ligase (EC 6.5.1.2)	Z84395	<i>Mycobacterium tuberculosis</i>	242	52
ORF170	198132	199454	putative	M24278	<i>Escherichia coli</i>	1317	46
ORF171	199351	202818	putative				
ORF172	204552	202999	PcpB	U60175	<i>Sphingomonas chlorophenolica</i>	80	41
ORF173	205648	204692	putative				
ORF174	205807	207327	leucine tRNA synthetase	AF008220	<i>Bacillus subtilis</i>	1595	57
ORF175	207182	207775	leucyl-tRNA synthetase	X06331	<i>Escherichia coli</i>	363	51
ORF176	207779	208267	transfer RNA-Leu synthetase	M88581	<i>Bacillus subtilis</i>	285	43
ORF177	208267	209577	KDO transferase	Z31593	<i>Chlamydia pneumoniae</i>	2262	100

ORF	Begin	End	Homology	ID	Species	Score	I%
ORF178	211807	211271	KDO-transferase	X80061	<i>Chlamydia psittaci</i>	105	38
ORF179	212188	211844	putative				
ORF180	214079	212448	pyrophosphate-dependent phosphofructokinase beta subunit	Z32850	<i>Ricinus communis</i>	1003	45
ORF181	214907	214083	CinI	U44893	<i>Butyrivibrio fibrisolvens</i>	111	41
ORF182	216154	215429	putative				
ORF183	216115	216678	putative				
ORF184	216728	217282	putative				
ORF185	217267	217866	putative				
ORF186	218593	218261	putative				
ORF187	219821	218994	putative				
ORF188	221382	220309	putative				
ORF189	222719	221433	GMP synthetase	M10101	<i>Escherichia coli</i>	1151	48
ORF190	223521	222724	IMP dehydrogenase	X66859	<i>Acinetobacter calcoaceticus</i>	778	58
ORF191	224499	225008	putative				
ORF192	225140	225559	putative				
ORF193	225555	226802	putative				
ORF194	227800	226892	putative				
ORF195	228335	228072	putative				
ORF196	229251	228643	putative				
ORF197	230983	229622	YqhX	D84432	<i>Bacillus subtilis</i>	1386	56
ORF198	231483	230983	acetyl-CoA carboxylase biotin carboxyl carrier protein	U38804	<i>Porphyra purpurea</i>	199	52
ORF199	232063	231509	elongation factor P	D64001	<i>Synechocystis sp.</i>	282	32
ORF200	232739	232053	pentose-5-phosphate-3-epimerase	D90911	<i>Synechocystis sp.</i>	463	43
ORF201	233166	234356	putative				
ORF202	233518	233165	putative				
ORF203	234536	235186	ORF2	L35036	<i>Chlamydia psittaci</i>	570	60
ORF204	235379	236689	putative				
ORF205	236680	237618	putative				
ORF206	237521	238345	putative				
ORF207	238281	238973	putative				
ORF208	238871	240115	putative				

ORF	Begin	End	Homology	ID	Species	Score	I%
ORF209	240191	241564	putative	D84432	<i>Bacillus subtilis</i>	379	39
ORF210	242281	241604	YqjZ	AE000284	<i>Escherichia coli</i>	382	45
ORF211	242933	242274	f222; This 222 aa orf is 48 pct identical (0 gaps) to 208 residues of an approx. 232 aa protein YCKA BACSU SW: P42399				
ORF212	243416	242976	arginine repressor protein (argR)	U32800	<i>Haemophilus influenzae</i>	229	46
ORF213	243500	244531	sialoglycoprotease	U15958	<i>Pasteurella haemolytica</i>	565	53
ORF214	244480	246021	oligopeptide permease homolog AII	AF000366	<i>Borrelia burgdorferi</i>	457	34
ORF215	246330	247811	OppAIV	AF000948	<i>Borrelia burgdorferi</i>	453	35
ORF216	247831	249174	OppA gene product	X56347	<i>Bacillus subtilis</i>	255	37
ORF217	249437	251038	dcIAE	X56678	<i>Bacillus subtilis</i>	469	37
ORF218	251325	252212	OppB gene product	X56347	<i>Bacillus subtilis</i>	652	42
ORF219	253156	254007	oligopeptidepermease	X89237	<i>Streptococcus pyogenes</i>	574	48
ORF220	253974	254852	ATP binding protein	L18760	<i>Lactococcus lactis</i>	433	40
ORF221	255258	256094	KDO-transferase	X80061	<i>Chlamydia psittaci</i>	106	46
ORF222	256640	257455	putative				
ORF223	257502	258239	2-OXOGLUTARAT	A47930	<i>Spinacia oleracea</i>	636	52
ORF224	257869	257501	putative	M55191	<i>Solanum tuberosum</i>	1055	44
ORF225	259248	260897	pyrophosphate-fructose 6-phosphate 1-phosphotransferase beta-subunit				
ORF226	262753	261788	putative				
ORF227	263059	262757	putative				
ORF228	264375	263182	putative				
ORF229	265985	264747	putative				
ORF230	266637	266059	putative				
ORF231	267338	266538	putative				
ORF232	267922	267473	putative				
ORF233	269647	270771	tRNA guanine transglycosylase	L33777	<i>Zymomonas mobilis</i>	628	44
ORF234	272777	273145	ORF 4	D00624	<i>Bacteriophage chpl</i>	100	41
ORF235	273253	273636	putative				
ORF236	273705	273977	putative				
ORF237	276016	275717	putative				
ORF238	276439	276020	putative				

ORF	Begin	End	Homology	ID	Species	Score	I%
ORF239	276792	277253	putative				
ORF240	277318	277599	putative				
ORF241	278578	277877	putative				
ORF242	279258	278554	FbpC	U33937	<i>Neisseria gonorrhoeae</i>	312	39
ORF243	280435	279533	putative				
ORF244	281547	280849	putative				
ORF245	281696	282325	CMP-2-keto-3-deoxyoctulosonic acid synthetase	U15192	<i>Chlamydia trachomatis</i>	637	63
ORF246	282459	284069	CIP synthetase	U15192	<i>Chlamydia trachomatis</i>	2000	68
ORF247	284056	284517	ORF3	U15192	<i>Chlamydia trachomatis</i>	453	65
ORF248	284606	285775	glucose 6-phosphate dehydrogenase	U83195	<i>Chlamydia trachomatis</i>	1263	77
ORF249	285592	285987	glucose 6-phosphate dehydrogenase	U83195	<i>Chlamydia trachomatis</i>	519	79
ORF250	286179	286976	glucose-6-phosphate dehydrogenase isozyme	D88189	<i>Actinobacillus actinomycetemcomitans</i>	216	40
ORF251	287583	287002	putative				
ORF252	287951	287451	putative				
ORF253	288499	288816	putative				
ORF254	289674	288505	putative				
ORF255	288839	289213	putative				
ORF256	289970	290254	putative				
ORF257	291931	292803	gamma-D-glutamyl-L-diamino acid endopeptidase II	X64809	<i>Bacillus sphaericus</i>	95	39
ORF258	293258	292755	ScoS9	U43429	<i>Sireptomyces coelicolor</i>	233	45
ORF259	293718	293272	ribosomal protein L13 (rpL13)	U32823	<i>Haemophilus influenzae</i>	364	47
ORF260	294630	293953	glutamine transport ATP-binding protein Q	U67524	<i>Methanococcus jannaschii</i>	387	46
ORF261	296153	294636	putative				
ORF262	294817	295068	putative				
ORF263	296354	297862	conserved hypothetical protein	AE000586	<i>Helicobacter pylori</i>	641	46
ORF264	298415	297879	putative				
ORF265	298777	298253	putative				
ORF266	299572	298781	putative				
ORF267	300487	299633	putative				
ORF268	301586	300702	putative				

ORF	Begin	End	Homology	ID	Species	Score	I%
ORF269	302440	301571	putative				
ORF270	302838	302437	putative				
ORF271	303335	302745	putative				
ORF272	304394	303852	putative				
ORF273	304606	305223	f311; This 311 aa orf is 22 pct identical (13 gaps) to 186 residues of an approx. 488 aa protein YACA_BACSU SW: P37563; pyu1 of D21139	AE000232	<i>Escherichia coli</i>	250	38
ORF274	305394	306236	survival protein surE	U81296	<i>Sinorhizobium meliloti</i>	156	42
ORF275	306501	307439	YqfU	D84432	<i>Bacillus subtilis</i>	547	42
ORF276	308033	307458	3-octaprenyl-4-hydroxybenzoate carboxylase	U61168	<i>Bacillus firmus</i>	403	42
ORF277	308924	308037	4-hydroxybenzoate octaprenyltransferase	U61168	<i>Bacillus firmus</i>	152	40
ORF278	309485	310180	putative				
ORF279	310426	311214	putative				
ORF280	311597	311253	putative				
ORF281	312772	311780	putative				
ORF282	313425	312772	putative				
ORF283	313646	313377	putative				
ORF284	313937	314665	lysophospholipase homolog	AF006678	<i>Schistosoma mansoni</i>	141	44
ORF285	315576	314755	dnaZX	X17014	<i>Bacillus subtilis</i>	154	39
ORF286	316157	315531	unknown	D26185	<i>Bacillus subtilis</i>	284	31
ORF287	318657	316156	DNA gyrase	L47978	<i>Aeromonas salmonicida</i>	1785	48
ORF288	321042	318676	DNA gyrase subunit B	U35453	<i>Clostridium acetobutylicum</i>	1838	59
ORF289	321445	321098	putative				
ORF290	322309	321710	putative				
ORF291	323190	322366	outer membrane protein	AE000654	<i>Helicobacter pylori</i>	376	43
ORF292	323843	323181	hypothetical	U70214	<i>Escherichia coli</i>	356	37
ORF293	324878	323856	ATP-binding protein (abc)	U32744	<i>Haemophilus influenzae</i>	545	44
ORF294	325340	326410	f374; This 374 aa orf is 30 pct identical (9 gaps) to 102 residues of an approx. 512 aa protein FLIC SALMU SW: P06177	AE000299	<i>Escherichia coli</i>	1194	62
ORF295	326433	327836	Xas A	AE000246	<i>Escherichia coli</i>	479	33

ORF	Begin	End	Homology	ID	Species	Score	I%
ORF296	328465	327839	putative				
ORF297	329360	328857	putative				
ORF298	330907	329357	putative				
ORF299	332455	330956	MgtE	U18744	<i>Bacillus firmus</i>	203	36
ORF300	334536	332395	putative				
ORF301	336091	334877	putative				
ORF302	336103	337302	putative				
ORF303	338129	338830	putative				
ORF304	338965	339501	putative				
ORF305	339508	340143	putative				
ORF306	340247	342967	putative				
ORF307	343385	343810	cAMP-dependent protein kinase type I regulatory subunit	U75932	<i>Rattus norvegicus</i>	102	37
ORF308	344171	343935	acyl carrier protein (acpP)	AE000570	<i>Helicobacter pylori</i>	198	55
ORF309	345082	344330	3-ketoacyl-ACP reductase	U39441	<i>Vibrio harveyi</i>	598	48
ORF310	346005	345082	malonyl-CoA:Acyl carrier protein transacylase	U59433	<i>Bacillus subtilis</i>	538	45
ORF311	346784	346437	beta-ketoacyl-acyl carrier protein synthase III (fabH)	AE000540	<i>Helicobacter pylori</i>	273	50
ORF312	347029	346715	beta-ketoacyl-acyl carrier protein synthase III	M77744	<i>Escherichia coli</i>	265	63
ORF313	347034	347723	recombination protein	D90916	<i>Synechocystis sp.</i>	363	42
ORF314	348075	350459	putative				
ORF315	350598	351071	putative				
ORF316	351075	352175	rifampicin resistance protein	L22690	<i>Rickettsia rickettsii</i>	495	46
ORF317	353291	352230	putative				
ORF318	353442	354467	pyruvate dehydrogenase E1 component, alpha subunit	D90915	<i>Synechocystis sp.</i>	571	44
ORF319	354451	354933	pyruvate dehydrogenase E1 beta subunit	U09137	<i>Arabidopsis thaliana</i>	495	59
ORF320	355000	355449	pyruvate dehydrogenase E1 component, beta subunit	U38804	<i>Porphyra purpurea</i>	336	47
ORF321	355448	356743	F23B12.5	Z77659	<i>Caenorhabditis elegans</i>	759	46
ORF322	355953	355642	putative				

DRF	Begin	End	Homology	ID	Species	Score	I%
DRF323	359310	356827	glycogen phosphorylase B	U47025	<i>Homo sapiens</i>	2193	57
DRF324	359120	359377	putative				
DRF325	359525	359908	putative				
DRF326	361290	359947	DnaA	D89066	<i>Staphylococcus aureus</i>	375	46
DRF327	363785	361362	hypothetical	U32781	<i>Haemophilus influenzae</i>	394	44
DRF328	364496	363888	putative				
DRF329	364832	365290	putative				
DRF330	365304	365669	dpi	M76470	<i>Escherichia coli</i>	160	45
DRF331	366599	365667	NADPH thioredoxin reductase	AC002329	<i>Arabidopsis thaliana</i>	975	60
DRF332	367291	369030	ribosomal protein S1 (rpS1)	U32801	<i>Haemophilus influenzae</i>	1209	41
DRF333	369134	369808	NusA	U74759	<i>Chlamydia trachomatis</i>	995	87
DRF334	369917	370438	NusA	U74759	<i>Chlamydia trachomatis</i>	760	87
DRF335	370365	372647		U74759	<i>Chlamydia trachomatis</i>	2173	61
DRF336	372557	373066	initiation factor IF2-beta (infB; gtg start codon)	X00513	<i>Escherichia coli</i>	333	39
DRF337	373020	373442	ORF6 gene product	Z18631	<i>Bacillus subtilis</i>	192	34
DRF338	373467	374195	tRNA pseudouridine 55 synthase	D90917	<i>Synechocystis sp.</i>	358	47
DRF339	374176	375099	hypothetical 34.6 kD protein in rpsT-ileS intergenic region	AE000113	<i>Escherichia coli</i>	395	39
DRF340	375676	375083	hypothetical GTP-binding protein in pth 3' region	AE000219	<i>Escherichia coli</i>	507	53
DRF341	376173	375634	hypothetical	U32723	<i>Haemophilus influenzae</i>	480	59
DRF342	376564	377643	YscU	U08019	<i>Yersinia enterocolitica</i>	538	37
DRF343	377956	379773	lcrD gene product	X67771	<i>Yersinia enterocolitica</i>	1302	47
DRF344	379781	380425	putative				
DRF345	380281	381000	putative				
DRF346	381008	381460	putative				
DRF347	381460	383037	4-alpha-glucanotransferase	L37874	<i>Clostridium butyricum</i>	302	38
DRF348	383257	383523	ribosomal protein L28 (rpL28)	U32776	<i>Haemophilus influenzae</i>	175	55
DRF349	383553	385304	hypothetical protein	D90901	<i>Synechocystis sp.</i>	565	38
DRF350	385397	386458	comE ORF1	D64002	<i>Synechocystis sp.</i>	187	10
DRF351	387242	386514	putative				
DRF352	388764	387013	putative				

ORF	Begin	End	Homology	ID	Species	Score	I%
ORF353	390120	390932	methylentetrahydrofolate dehydrogenase	D64000	<i>Synechocystis sp.</i>	588	53
ORF354	390919	391818	f351; Residues 1-121 are 100 pct identical to YOJL_ECOLI SW: P33944 (122 aa) and aa 152-351 are 100 pct identical to YOJK_ECOLI SW: P33943	AE000310	<i>Escherichia coli</i>	186	39
ORF355	392379	391885	small protein	D90914	<i>Synechocystis sp.</i>	387	46
ORF356	392582	392986	putative				
ORF357	392776	393684	putative				
ORF358	394151	394804	RecF protein	D90907	<i>Synechocystis sp.</i>	232	34
ORF359	394928	395308	putative				
ORF360	395259	395990	putative				
ORF361	397815	395953	hypothetical	U32773	<i>Haemophilus influenzae</i>	391	36
ORF362	398850	397831	H. influenzae predicted coding region H10807	U32763	<i>Haemophilus influenzae</i>	580	39
ORF363	400085	399099	putative				
ORF364	401245	400073	YtgC	AF008220	<i>Bacillus subtilis</i>	244	30
ORF365	401474	401136	putative				
ORF366	402199	401423	unknown	U52850	<i>Erysipelothrix rhusiopathiae</i>	534	46
ORF367	403193	402186	putative				
ORF368	403650	404165	putative				
ORF369	404343	405914	adenine nucleotide translocase	Z49227	<i>Arabidopsis thaliana</i>	1280	55
ORF370	405984	407327	putative				
ORF371	407712	408806	putative				
ORF372	410439	409075	putative				
ORF373	411826	410954	putative				
ORF374	412482	414302	lepA gene product	X91655	<i>Bacillus subtilis</i>	1827	59
ORF375	415402	414407	6-phosphogluconate dehydrogenase, decarboxylating (gnd)	U32737	<i>Haemophilus influenzae</i>	687	51
ORF376	415848	415237	6-phosphogluconate dehydrogenase, 6PGD [Ceratitis capitata=medflies, Peptide, 481 aa]	S67873	<i>Ceratitis capitata</i>	695	64
ORF377	417131	415866	tyrosyl-tRNA synthetase (tyrS)	J01719	<i>Escherichia coli</i>	821	45
ORF378	417258	417566	putative				

RF	Begin	End	Homology	ID	Species	Score	I%
RF379	418326	417454	whiG-Stv gene product	X68709	<i>Sireptovercillium griseocarneum</i>	464	41
RF380	420057	418426	FLHA gene product	X63698	<i>Bacillus subtilis</i>	455	49
RF381	420448	420720	ferredoxin IV	M59855	<i>Rhodobacter capsulatus</i>	174	63
RF382	420980	421552	putative				
RF383	421556	422029	putative				
RF384	422461	422925	putative				
RF385	423562	424320	putative				
RF386	424250	424591	putative				
RF387	424830	426047	putative				
RF388	426240	427397	putative				
RF389	428841	430703	GepE	D90908	<i>Synechocystis sp.</i>	877	47
RF390	430694	431446	YfiH	U50134	<i>Escherichia coli</i>	136	35
RF391	431597	432100	putative				
RF392	432165	432779	putative				
RF393	433272	432832	dihydrolipoamide succinyltransferase (sucB)	U32839	<i>Haemophilus influenzae</i>	475	64
RF394	433925	433227	dihydrolipoamide succinyltransferase (sucB)	U32839	<i>Haemophilus influenzae</i>	332	45
RF395	436678	433934	alpha-ketoglutarate dehydrogenase	U41762	<i>Rhodobacter capsulatus</i>	1530	44
RF396	437176	438357	oxygen-independent coproporphyrinogen III oxidase (hemN)	AE000628	<i>Helicobacter pylori</i>	442	42
RF397	440317	438518	putative				
RF398	440001	440345	putative				
RF399	441233	440517	ORF f286	U18997	<i>Escherichia coli</i>	168	45
RF400	440719	441012	putative				
RF401	442192	441230	putative				
RF402	442888	442343	putative				
RF403	442371	442961	putative				
RF404	443578	443003	[karp] gene products	M86605	<i>Chlamydia trachomatis</i>	505	78
RF405	444500	443526	aminopeptidase	D17450	<i>Mycoplasma salivarium</i>	273	39
RF406	444842	444528	putative				
RF407	445009	444743	putative	L39923	<i>Mycobacterium leprae</i>	133	33

ORF	Begin	End	Homology	ID	Species	Score	I%
ORF408	44518	445182	putative				
ORF409	445807	447804	Sulp	U18908	<i>Zea mays</i>	1307	52
ORF410	448738	447803	putative				
ORF411	449628	448618	RuvB protein	U38840	<i>Thermotoga maritima</i>	845	53
ORF412	450298	450867	deoxycytidine triphosphate deaminase (dcd)	AE000554	<i>Helicobacter pylori</i>	573	58
ORF413	450713	451207	putative				
ORF414	451211	452452	hemolysin	D90914	<i>Synechocystis sp.</i>	227	39
ORF415	452448	453659	similar to [SwissProt Accession Number P37908]	D90888	<i>Escherichia coli</i>	96	33
ORF416	454843	453725	NifS gene product	L34879	<i>Anabaena azollae</i>	533	38
ORF417	455608	454865	hypothetical protein	D90908	<i>Synechocystis sp.</i>	371	36
ORF418	456243	457007	putative				
ORF419	457016	457708	putative				
ORF420	458368	457979	unknown	D26185	<i>Bacillus subtilis</i>	152	36
ORF421	459496	458372	mutY homolog	U63329	<i>Homo sapiens</i>	466	46
ORF422	459493	460194	hypothetical protein	D90914	<i>Synechocystis sp.</i>	98	38
ORF423	461446	460355	putative				
ORF424	462298	461450	putative				
ORF425	462444	463349	enoyl-ACP reductase	Y13861	<i>Nicotiana tabacum</i>	1008	69
ORF426	464241	463342	putative				
ORF427	464574	465065	putative				
ORF428	465129	465611	putative				
ORF429	465571	466317	putative				
ORF430	466317	467093	H. pylori predicted coding region HP0152	AE000536	<i>Helicobacter pylori</i>	246	36
ORF431	466999	467502	putative				
ORF432	469691	467715	unidentified transporter-ATP binding	Z82044	<i>Bacillus subtilis</i>	496	45
ORF433	470691	469660	acetyl-CoA carboxylase subunit	AF008220	<i>Bacillus subtilis</i>	781	52
ORF434	472010	470709	putative				
ORF435	471545	471799	putative				
ORF436	472359	472045	putative				
ORF437	473523	472732	orf1	X75413	<i>Escherichia coli</i>	313	42
ORF438	474889	473441	murE gene product	Z15056	<i>Bacillus subtilis</i>	679	37
ORF439	477323	475365	penicillin-binding protein 2	X59630	<i>Neisseria meningitidis</i>	451	42

ORF	Begin	End	Homology	ID	Species	Score	I%
ORF440	478496	477597	hypothetical protein	D90906	<i>Synechocystis sp.</i>	534	52
ORF441	478722	479273	putative				
ORF442	479277	479705	putative	D90909	<i>Synechocystis sp.</i>	793	40
ORF443	480050	481450	chromosomal replication initiator protein				
			DnaA	U35673	<i>Borrelia burgdorferi</i>	157	37
ORF444	481469	482053	OrfH				
ORF445	482600	482025	putative	Z37111	<i>Vibrio alginolyticus</i>	801	49
ORF446	482654	484204	NADH:ubiquinone oxidoreductase subunit B				
ORF447	484211	485170	NADH:ubiquinone oxidoreductase (GP:Z37111 4)	U32702	<i>Haemophilus influenzae</i>	258	48
ORF448	485170	485838	NADH:ubiquinone oxidoreductase	Z37111	<i>Vibrio alginolyticus</i>	543	55
ORF449	485813	486580	unidentified protein of Na ⁺ -translocating NADH-quinone reductase	D49364	<i>Vibrio alginolyticus</i>	488	48
ORF450	486976	486638	putative				
ORF451	489071	487764	putative				
ORF452	489341	489090	putative				
ORF453	489958	489152	putative				
ORF454	490549	489962	putative				
ORF455	491163	490522	putative				
ORF456	491396	491112	putative				
ORF457	492121	491390	putative	U02604	<i>Bacillus subtilis</i>	2370	46
ORF458	492304	494838	ClpC adenosine triphosphatase	AE000213	<i>Escherichia coli</i>	927	53
ORF459	495943	494822	hypothetical protein in purB 5' region				
ORF460	496011	496565	putative				
ORF461	496569	497228	putative				
ORF462	497358	497834	putative				
ORF463	497770	498327	putative				
ORF464	499209	499589	putative				
ORF465	499520	499792	putative	U72499	<i>Chlamydia psittaci</i>	1215	45
ORF466	500774	504169	putative 98 kDa outer membrane protein	U72499	<i>Chlamydia psittaci</i>	319	47
ORF467	504139	504600	putative 98 kDa outer membrane protein	U72499	<i>Chlamydia psittaci</i>	992	42
ORF468	504865	506877	putative 98 kDa outer membrane protein				

ORF	Begin	End	Homology	ID	Species	Score	I%
ORF469	506790	507671	putative 98 kDa outer membrane protein	U72499	<i>Chlamydia psittaci</i>	739	46
ORF470	507718	510507	putative 98 kDa outer membrane protein	U72499	<i>Chlamydia psittaci</i>	1813	42
ORF471	508325	507912	putative				
ORF472	510660	513440	POMP90A precursor	U65942	<i>Chlamydia psittaci</i>	1830	46
ORF473	514965	513787	hypothetical	D83026	<i>Bacillus subtilis</i>	482	48
ORF474	517347	515419	putative 98 kDa outer membrane protein	U72499	<i>Chlamydia psittaci</i>	1554	51
ORF475	517058	517363	putative				
ORF476	517798	517277	putative 98 kDa outer membrane protein	U72499	<i>Chlamydia psittaci</i>	222	41
ORF477	518200	517847	POMP91B precursor	U65943	<i>Chlamydia psittaci</i>	162	42
ORF478	518300	521146	putative 98 kDa outer membrane protein	U72499	<i>Chlamydia psittaci</i>	1900	45
ORF479	521392	522948	POMP91A	U65942	<i>Chlamydia psittaci</i>	490	39
ORF480	523244	524809	putative 98 kDa outer membrane protein	U72499	<i>Chlamydia psittaci</i>	507	35
ORF481	524379	524125	putative				
ORF482	524649	526238	putative 98 kDa outer membrane protein	U72499	<i>Chlamydia psittaci</i>	969	41
ORF483	526265	527104	putative				
ORF484	526947	526702	putative				
ORF485	526975	528450	putative 98 kDa outer membrane protein	U72499	<i>Chlamydia psittaci</i>	197	48
ORF486	528408	529199	putative outer membrane protein	U72499	<i>Chlamydia psittaci</i>	154	37
ORF487	530612	529542	putative				
ORF488	531656	530616	putative				
ORF489	533974	532067	putative				
ORF490	536432	534324	putative				
ORF491	537150	536707	putative				
ORF492	537928	537080	putative				
ORF493	538438	537932	putative				
ORF494	538737	538333	putative				
ORF495	539594	539127	putative				
ORF496	541215	539590	putative				
ORF497	542571	541282	putative				
ORF498	543014	542457	putative				
ORF499	543369	542962	putative				
ORF500	543809	546628	putative 98 kDa outer membrane protein	U72499	<i>Chlamydia psittaci</i>	506	89
ORF501	546619	549525	POMP91A	U65942	<i>Chlamydia psittaci</i>	128	50

ORF	Begin	End	Homology	ID	Species	Score	I%
ORF502	547293	546994	putative				
ORF503	549699	550523	putative 98 kDa outer membrane protein	U72499	<i>Chlamydia psittaci</i>	96	32
ORF504	550490	551551	putative 98 kDa outer membrane protein	U72499	<i>Chlamydia psittaci</i>	223	33
ORF505	551448	552623	putative 98 kDa outer membrane protein	U72499	<i>Chlamydia psittaci</i>	139	46
ORF506	552652	555117	putative 98 kDa outer membrane protein	U72499	<i>Chlamydia psittaci</i>	487	48
ORF507	555029	555493	putative				
ORF508	558006	555673	putative				
ORF509	559694	558162	putative				
ORF510	558208	558573	putative				
ORF511	561692	559899	putative				
ORF512	561412	561708	putative				
ORF513	563942	561777	1,4-alpha-glucan branching enzyme	X73903	<i>Sireptomyces coelicolor</i>	1743	45
ORF514	564969	563950	putative	D84432	<i>Bacillus subtilis</i>	639	38
ORF515	566204	564936	YqeV	U00005	<i>Escherichia coli</i>	686	41
ORF516	567717	566302	putative GTPase required for high frequency lysogenization by bacteriophage lambda				
ORF517	568526	567708	putative				
ORF518	569467	568742	putative				
ORF519	571065	569431	putative				
ORF520	571828	571118	arginine-binding periplasmic protein I precursor	AE000188	<i>Escherichia coli</i>	197	45
ORF521	572202	573308	putative				
ORF522	573146	575056	putative				
ORF523	575023	575916	carboxysome formation protein	D90901	<i>Synechocystis sp.</i>	557	59
ORF524	577891	576497	putative				
ORF525	578914	578204	putative				
ORF526	579924	578857	putative				
ORF527	580187	579858	protein kinase C inhibitor	D90906	<i>Synechocystis sp.</i>	260	49
ORF528	580017	580406	putative				
ORF529	581086	580187	Yer156cp	U18917	<i>Saccharomyces cerevisiae</i>	176	34
ORF530	581367	581828	putative				
ORF531	581678	582367	putative				

ORF	Begin	End	Homology	ID	Species	Score	I%
ORF532	582361	583428	putative				
ORF533	584690	583431	putative				
ORF534	585237	584950	putative				
ORF535	585626	586888	hypothetical protein	D64004	<i>Synechocystis sp.</i>	805	45
ORF536	586846	587907	putative				
ORF537	589049	588180	putative				
ORF538	590500	589301	putative				
ORF539	590755	592458	aminoacyl-tRNA synthetase	L25105	<i>Chlamydia trachomatis</i>	2125	71
ORF540	592526	592903	has homology to putative heat shock proteins of <i>Bacillus subtilis</i> and <i>Clostridium acetobutylicum</i> ; ORFA; putative	L25105	<i>Chlamydia trachomatis</i>	324	59
ORF541	592836	593747	Possible negative regulator of CIRCE element; Homologs in <i>B. subtilis</i> and <i>Clostridia</i> spp. referred to as hrcA or orfA	U52216	<i>Chlamydia trachomatis</i>	960	65
ORF542	593747	594298	grpE	M62819	<i>Chlamydia trachomatis</i>	661	71
ORF543	594331	595947	DnaK protein homolog; 71,550 Da; putative	M69227	<i>Chlamydia pneumoniae</i>	2619	100
ORF544	595905	596309	DnaK protein homolog; 71,550 Da; putative	M69227	<i>Chlamydia pneumoniae</i>	674	100
ORF545	596514	597215	putative				
ORF546	597184	597957	vacB gene product	U14003	<i>Escherichia coli</i>	306	48
ORF547	597755	598612	ORF-2	D11024	<i>Shigella flexneri</i>	168	46
ORF548	598602	599204	homologous to DNA glycosylases; hypothetical	D83026	<i>Bacillus subtilis</i>	374	47
ORF549	599373	599939	putative				
ORF550	600903	602072	hemolysin	X73141	<i>Serpulina hyodysenteriae</i>	362	36
ORF551	602240	602587	hypothetical protein	D90908	<i>Synechocystis sp.</i>	182	35
ORF552	602637	603272	putative				
ORF553	603142	604512	putative				
ORF554	604627	605853	conserved hypothetical protein	AE000579	<i>Helicobacter pylori</i>	423	40
ORF555	605790	606620	putative				
ORF556	606571	607281	putative	L14679	<i>Lactococcus lactis</i>	384	45
ORF557	609004	607355	putative				

ORF	Begin	End	Homology	ID	Species	Score	I%
ORF558	610906	609932	putative				
ORF559	611786	611004	diaminopimelate epimerase	D90917	<i>Synechocystis</i> sp.	207	55
ORF560	612333	611746	ATP-dependent Clp protease proteolytic subunit	D90915	<i>Synechocystis</i> sp.	389	44
ORF561	613897	612341	serine hydroxymethyltransferase	D90903	<i>Synechocystis</i> sp.	909	52
ORF562	615179	616279	putative				
ORF563	616610	617383	putative			413	45
ORF564	618796	617810	ORF o328	U18997	<i>Escherichia coli</i>	688	41
ORF565	620004	618826	branched chain alpha-keto acid dehydrogenase E2	M97391	<i>Bacillus subtilis</i>		
ORF566	619649	619918	putative	Y14083	<i>Bacillus subtilis</i>	727	37
ORF567	621265	620021	Hypothetical protein	U32691	<i>Haemophilus influenzae</i>	294	52
ORF568	622359	621265	hypothetical	D90913	<i>Synechocystis</i> sp.	244	38
ORF569	623420	622560	rRNA methylase	U67605	<i>Methanococcus jannaschii</i>	147	35
ORF570	624297	623335	hypothetical protein (SP:P39587)	AE000261	<i>Escherichia coli</i>	424	50
ORF571	624773	624174	riboflavin synthase alpha chain	D28752	<i>Synechococcus</i> sp.	323	43
ORF572	625029	625484	ORF 168	AF008220	<i>Bacillus subtilis</i>	172	35
ORF573	625488	625883	YteA	X78084	<i>Staphylococcus carnosus</i>	204	38
ORF574	625892	626395	signalpeptidase II	U32770	<i>Haemophilus influenzae</i>	566	33
ORF575	626444	627790	D-alanine permease (dagA)				
ORF576	627912	628607	putative				
ORF577	628774	629697	putative	U65942	<i>Chlamydia psittaci</i>	579	44
ORF578	629660	631639	POMP91A				
ORF579	631725	633551	putative			266	45
ORF580	633520	636957	putative 98 kDa outer membrane protein	U72499	<i>Chlamydia psittaci</i>	267	38
ORF581	637232	638098	adhesion protein	D90903	<i>Synechocystis</i> sp.	759	45
ORF582	640648	639593	GTP-binding protein	D90901	<i>Synechocystis</i> sp.	265	65
ORF583	640979	640728	50S ribosomal protein L27	U38804	<i>Porphyra purpurea</i>	210	41
ORF584	641327	641007	50S ribosomal subunit protein L21	U18997	<i>Escherichia coli</i>	76	39
ORF585	641687	642283	hypothetical protein	D90906	<i>Synechocystis</i> sp.	284	42
ORF586	643023	642286	assimilatory sulfite reductase	L26503	<i>Saccharomyces cerevisiae</i>		
ORF587	643330	643076	putative			349	69
ORF588	643704	643351	ribosomal protein S10 (rpS10)	U32761	<i>Haemophilus influenzae</i>		

ORF	Begin	End	Homology	ID	Species	Score	I%
ORF589	645628	643676	translation elongation factor EF-G (fusA)	AE000625	<i>Helicobacter pylori</i>	1991	58
ORF590	645783	645538	elongation factor G (AA 1-691)	X16278	<i>Thermus aquaticus thermophilus</i>	170	80
ORF591	646269	645793	ribosomal protein S7	Z11567	<i>Chlamydia trachomatis</i>	730	88
ORF592	646751	646314	ribosomal protein S12 (AA 1-123)	X52912	<i>Cryptomonas phi</i>	485	67
ORF593	647848	647045	putative				
ORF594	648393	650336	ORF of prc gene (alt.)	D00674	<i>Escherichia coli</i>	554	42
ORF595	651016	650420	hypothetical sulfur-rich protein	U41759	<i>Chlamydia psittaci</i>	301	50
ORF596	652956	651289	60kDa CrP	X53511	<i>Chlamydia pneumoniae</i>	2951	100
ORF597	653395	653126	9kDa CrP	X53511	<i>Chlamydia pneumoniae</i>	502	99
ORF598	655740	654193	glutamyl-tRNA synthetase homolog	U41759	<i>Chlamydia psittaci</i>	2259	82
ORF599	656508	655966	early stage-specific transcription experimentally demonstrated; early upstream open reading frame (EUO)	L13598	<i>Chlamydia psittaci</i>	666	62
ORF600	658140	657022	unknown	U41759	<i>Chlamydia psittaci</i>	950	44
ORF601	660216	658525	RecJ recombination protein	U41759	<i>Chlamydia psittaci</i>	807	73
ORF602	663238	660248	protein-export membrane protein SecD	D64000	<i>Synechocystis sp.</i>	413	41
ORF603	664461	663157	putative				
ORF604	665735	664635	putative				
ORF605	666212	666994	hypothetical protein	D64006	<i>Synechocystis sp.</i>	538	58
ORF606	666998	667921	o298; This 298 aa orf is 33 pct identical (24 gaps) to 248 residues of an approx. 256 aa protein CDSA_ECOLI SW: P06466	AE000238	<i>Escherichia coli</i>	253	45
ORF607	667909	668568	cytidylate kinase	AE000193	<i>Escherichia coli</i>	400	48
ORF608	668502	669203	hypothetical protein	D90915	<i>Synechocystis sp.</i>	225	33
ORF609	669154	670893	arginyl-tRNA-synthetase	D64006	<i>Synechocystis sp.</i>	1365	49
ORF610	672226	670853	UDP-N-acetylglucosamine enolpyruvyl transferase (murZ)	U32788	<i>Haemophilus influenzae</i>	642	40
ORF611	671137	671424	putative				
ORF612	672453	673001	putative				
ORF613	673072	674721	putative				
ORF614	674549	674262	putative				
ORF615	675518	674796	ORF246 gene product	X59551	<i>Escherichia coli</i>	520	43
ORF616	676083	675499	putative				

ORF	Begin	End	Homology	ID	Species	Score	I%
ORF617	676630	676067	putative	D10279	<i>Bacillus subtilis</i>	361	63
ORF618	677016	676600	ORF3	X99401	<i>Bacillus firmus</i>	427	43
ORF619	677647	677015	peptide release factor 2	Z49939	<i>Saccharomyces cerevisiae</i>	175	48
ORF620	677990	678259	unknown	D26185	<i>Bacillus subtilis</i>	263	38
ORF621	679444	680097	unknown	D64126	<i>Bacillus subtilis</i>	506	45
ORF622	680097	680897	unknown				
ORF623	681637	680849	putative				
ORF624	681409	682281	putative				
ORF625	682453	682821	putative	L39904	<i>Myxococcus xanthus</i>	190	48
ORF626	682763	683902	sensor protein				
ORF627	684616	683969	putative				
ORF628	685169	684534	putative				
ORF629	685986	685117	putative	U17902	<i>Escherichia coli</i>	820	45
ORF630	686278	687288	NtrC/NifA-like protein regulator				
ORF631	687483	688151	putative				
ORF632	688740	689501	putative				
ORF633	690242	689622	putative	Z48008	<i>Saccharomyces cerevisiae</i>	380	46
ORF634	690470	691126	unknown				
ORF635	692600	691497	putative	U32810	<i>Haemophilus influenzae</i>	593	45
ORF636	692674	695064	phenylalanyl-tRNA synthetase beta-subunit (pheT)				
ORF637	695049	696032	putative			371	37
ORF638	697964	696585	OppC-like protein	D85103	<i>Synechococcus sp.</i>	197	40
ORF639	699803	698274	OppB gene product	X56347	<i>Bacillus subtilis</i>	324	43
ORF640	701926	699788	AppA	U20909	<i>Bacillus subtilis</i>		
ORF641	703196	702567	putative				
ORF642	704221	703208	putative			266	42
ORF643	704240	705289	ferrochelatase	X73417	<i>Arabidopsis thaliana</i>	128	31
ORF644	706070	705300	histidine periplasmic binding protein P29	U58045	<i>Campylobacter jejuni</i>	155	37
ORF645	706841	706254	conserved hypothetical protein	AE000592	<i>Helicobacter pylori</i>		
ORF646	707596	706811	putative			595	43
ORF647	708666	707677	ADP-glucose pyrophosphorylase	X55650	<i>Solanum tuberosum</i>	400	44
ORF648	709793	709119	pyrE-F gene product	X71842	<i>Arabidopsis thaliana</i>		

ORF	Begin	End	Homology	ID	Species	Score	I%
ORF649	711523	710132	transcription termination factor	J01673	<i>Escherichia coli</i>	1251	60
ORF650	712236	711523	putative				
ORF651	714734	712125	DNA polymerase I	J04479	<i>Streptococcus pneumoniae</i>	1334	43
ORF652	715759	714761	protease IV	U67512	<i>Methanococcus jannaschii</i>	101	55
ORF653	717538	715886	adenine nucleotide translocase	Z49227	<i>Arabidopsis thaliana</i>	832	39
ORF654	719113	720243	replicative DNA helicase	D26185	<i>Bacillus subtilis</i>	776	44
ORF655	720590	722422	homologous to E.coli gidA	X62540	<i>Pseudomonas putida</i>	1575	52
ORF656	722406	723056	putative				
ORF657	723551	723120	nucleoside 5'-diphosphate phosphotransferase (EC 2.7.4.6)	J05207	<i>Myxococcus xanthus</i>	451	62
ORF658	724246	723626	Holliday junction DNA helicase (ruvA)	U32716	<i>Haemophilus influenzae</i>	293	43
ORF659	724754	724251	crossover junction endodeoxyribonuclease (ruvC)	U32717	<i>Haemophilus influenzae</i>	296	53
ORF660	725868	724900	putative				
ORF661	727115	726270	putative				
ORF662	728126	727119	glyceraldehyde-3-phosphate dehydrogenase	U83198	<i>Chlamydia trachomatis</i>	1340	75
ORF663	728594	728208	ribosomal protein L17	L33834	<i>Chlamydia trachomatis</i>	439	82
ORF664	729614	728604	RNA polymerase alpha-subunit	L33834	<i>Chlamydia trachomatis</i>	1356	89
ORF665	729778	729533	RNA polymerase alpha-subunit	L33834	<i>Chlamydia trachomatis</i>	273	82
ORF666	730149	729751	ribosomal protein S11	L33834	<i>Chlamydia trachomatis</i>	562	90
ORF667	730539	730174	ribosomal protein S13	L33834	<i>Chlamydia trachomatis</i>	544	89
ORF668	731983	730598	homolog	L25077	<i>Chlamydia trachomatis</i>	1956	83
ORF669	732427	731996	ribosomal protein CtrL15e	M80325	<i>Chlamydia trachomatis</i>	563	77
ORF670	732917	732423	ribosomal protein CtrS5e	M80325	<i>Chlamydia trachomatis</i>	702	84
ORF671	733598	733320	ribosomal protein L6	M60652	<i>Chlamydia trachomatis</i>	316	87
ORF672	733869	733492	ribosomal protein L6	M60652	<i>Chlamydia trachomatis</i>	469	77
ORF673	734298	733900	ribosomal protein CtrS8e	M80325	<i>Chlamydia trachomatis</i>	572	82
ORF674	734858	734319	ribosomal protein CtrL5e	M80325	<i>Chlamydia trachomatis</i>	730	90
ORF675	735195	734863	ribosomal protein CtrL24e	M80325	<i>Chlamydia trachomatis</i>	420	70
ORF676	735578	735342	ribosomal protein CtrL14e	M80325	<i>Chlamydia trachomatis</i>	270	95
ORF677	735861	735604	ribosomal protein S17e	M80325	<i>Chlamydia trachomatis</i>	322	77
ORF678	736492	736079	50S ribosomal protein L16	D90905	<i>Synechocystis sp.</i>	439	60

ORF	Begin	End	Homology	ID	Species	Score	I%
ORF679	737192	736524	ribosomal protein S3	D64071	<i>Actinobacillus actinomycetemcomitans</i>	612	58
ORF680	737555	737211	ribosomal protein L22	Z21677	<i>Thermotoga maritima</i>	228	48
ORF681	738688	737837	50S ribosomal subunit protein L2	U18997	<i>Escherichia coli</i>	769	62
ORF682	739048	738713	putative	X67014	<i>Bacillus stearothermophilus</i>	308	46
ORF683	739736	739065	ribosomal protein L4	Z46265	<i>Thermus aquaticus thermophilus</i>	463	50
ORF684	740477	739773	ribosomal protein L3				
ORF685	740659	740958	putative				
ORF686	741722	740721	putative				
ORF687	742789	741827	methionyl-tRNA formyltransferase	D64001	<i>Synechocystis sp.</i>	511	48
ORF688	743618	742782	UDP-N-acetylglucosamine acyltransferase	L22690	<i>Rickettsia rickettsii</i>	542	43
ORF689	744092	743634	(3R)-hydroxymyristol acyl carrier protein dehydrase	D90910	<i>Synechocystis sp.</i>	339	55
ORF690	744604	744107	UDP-3-0-acyl N-acetylglucosamine deacetylase	D90902	<i>Synechocystis sp.</i>	287	45
ORF691	744953	744498	UDP-3-O-acyl-GlcNAc deacetylase	U67855	<i>Pseudomonas aeruginosa</i>	262	51
ORF692	746608	744986	apolipoprotein N-acyltransferase (cute)	U32716	<i>Haemophilus influenzae</i>	194	50
ORF693	747085	746621	low homology to P14 protein of <i>Haemophilus influenzae</i> and 14.2 kDa protein of <i>Escherichia coli</i>	D78189	<i>Bacillus subtilis</i>	235	37
ORF694	747974	747219	polymerase III	M22996	<i>Bacillus subtilis</i>	180	34
ORF695	748594	748169	hypothetical protein	D90914	<i>Synechocystis sp.</i>	160	43
ORF696	749145	748573	putative	L39892	<i>Chlamydia psittaci</i>	393	72
ORF697	749652	749957	trxA	L39892	<i>Chlamydia psittaci</i>	559	72
ORF698	750446	749979	spoU	L39892	<i>Chlamydia psittaci</i>	948	60
ORF699	751219	750446	mip	D90910	<i>Synechocystis sp.</i>	1347	47
ORF700	753042	751291	aspartyl-tRNA synthetase	Z17214	<i>Streptococcus equisimilis</i>	757	44
ORF701	754309	753020	histidine--tRNA ligase	M89480	<i>Salmonella typhimurium</i>	870	49
ORF702	755120	756175	hexosephosphate transport protein	M89479	<i>Escherichia coli</i>	321	45
ORF703	756120	756485	hexosephosphate transport protein	AE000646	<i>Helicobacter pylori</i>	1977	42
ORF704	756499	760227	DNA polymerase III alpha-subunit (dnaE)				
ORF705	761217	760297	putative				
ORF706	761297	761809	putative				

ORF	Begin	End	Homology	ID	Species	Score	I%
ORF707	761782	762282	putative				
ORF708	762260	762895	putative				
ORF709	762867	763316	hypothetical protein	D90908	<i>Synechocystis sp.</i>	177	43
ORF710	763780	763325	putative				
ORF711	763861	765168	DD-carboxypeptidase	M85047	<i>Bacillus subtilis</i>	292	37
ORF712	766809	765697	fmu and fmv protein	D90902	<i>Synechocystis sp.</i>	130	36
ORF713	768051	766888	putative				
ORF714	768566	768321	putative				
ORF715	769342	768551	putative				
ORF716	770532	769378	putative				
ORF717	771451	770804	putative				
ORF718	773058	771847	3-phosphoglycerate kinase	U83197	<i>Chlamydia trachomatis</i>	1540	72
ORF719	773094	773456	putative				
ORF720	774376	773093	putative phosphate permease	U84890	<i>Mesembryanthemum crystallinum</i>	870	45
ORF721	775123	774380	putative				
ORF722	775398	774916	putative				
ORF723	775046	776077	sporulation protein	M57689	<i>Bacillus subtilis</i>	698	43
ORF724	776070	777041	was dppE	U00039	<i>Escherichia coli</i>	565	56
ORF725	777964	777536	orf288; translated orf similarity to SWISS-PROT: YG12_PSEPU hypothetical 32.4 kDa protein of <i>Pseudomonas putida</i>	Y10436	<i>Coxiella burnetii</i>	256	46
ORF726	778176	777904	B. subtilis genes rpmH, mpA, 50kd, gidA and gidB	X62539	<i>Bacillus subtilis</i>	112	37
ORF727	778621	779334	putative				
ORF728	781173	780307	f406; This 406 aa orf is 28 pct identical (12 gaps) to 264 residues of an approx. 440 aa protein YAOA SCHPO SW: O10089	AE000263	<i>Escherichia coli</i>	603	40
ORF729	781526	781116	f406; This 406 aa orf is 28 pct identical (12 gaps) to 264 residues of an approx. 440 aa protein YAOA SCHPO SW: O10089	AE000263	<i>Escherichia coli</i>	258	45
ORF730	782784	781555	f423; This 423 aa orf is 29 pct identical (1 gaps) to 172 residues of an approx. 488 aa protein YC24 CYAPA SW: P48260	AE000263	<i>Escherichia coli</i>	197	44

ORF	Begin	End	Homology	ID	Species	Score	I%
ORF731	783572	782805	hypothetical chloroplast ORF 16	U38804	<i>Porphyra purpurea</i>	597	52
ORF732	785032	783581	ABC transporter subunit	D64004	<i>Synechocystis sp.</i>	1720	62
ORF733	786412	785360	putative				
ORF734	788429	786450	pbp	Y14206	<i>Sireptomyces coelicolor</i>	148	55
ORF735	788944	788528	penicillin-binding protein 3	X84053	<i>Pseudomonas aeruginosa</i>	148	38
ORF736	789758	788901	putative				
ORF737	790332	791504	major outer membrane protein	M64064	<i>Chlamydia pneumoniae</i>	2028	99
ORF738	791846	792721	ribosomal protein S2	U60196	<i>Chlamydia trachomatis</i>	904	70
ORF739	792724	793569	elongation factor Ts	U60196	<i>Chlamydia trachomatis</i>	1023	71
ORF740	793580	794323	UMP kinase	U60196	<i>Chlamydia trachomatis</i>	891	72
ORF741	794304	794843	ribosome-releasing factor	U60196	<i>Chlamydia trachomatis</i>	673	73
ORF742	795217	795732	unknown	D26185	<i>Bacillus subtilis</i>	105	42
ORF743	795722	796795	unknown	D26185	<i>Bacillus subtilis</i>	208	33
ORF744	798735	797053	putative	L33796	<i>Vibrio cholerae</i>	386	34
ORF745	799823	798681	putative				
ORF746	799297	799578	putative			345	33
ORF747	801313	799808	Pkn5	U40656	<i>Myxococcus xanthus</i>		
ORF748	802453	801332	putative				
ORF749	803299	802457	putative				
ORF750	803811	803290	putative				
ORF751	805151	803826	YscN	U02499	<i>Yersinia enterocolitica</i>	1185	53
ORF752	805860	805156	putative				
ORF753	806604	806332	putative				
ORF754	806913	806608	putative				
ORF755	808222	806903	putative				
ORF756	808751	808146	putative				
ORF757	809437	808673	putative				
ORF758	809939	809454	putative				
ORF759	811235	810213	delta-aminolevulinate synthase (EC 2.3.1.37)	M30785	<i>Escherichia coli</i>	172	40
ORF760	811779	813056	DNA gyrase subunit B	U35453	<i>Clostridium acetobutylicum</i>	584	38
ORF761	812890	812516	putative				
ORF762	812954	813583	DNA gyrase subunit B	Z19108	<i>Spiroplasma citri</i>	371	39

ORF	Begin	End	Homology	ID	Species	Score	I%
ORF763	813587	815023	gyrA	X92503	<i>Mycobacterium smegmatis</i>	414	55
ORF764	815420	815746	putative				
ORF765	816036	817010	orf-X; hypothetical protein; Method: conceptual translation supplied by author	U48870	<i>Bacillus subtilis</i>	569	47
ORF766	817111	817356	unknown	Z74024	<i>Mycobacterium tuberculosis</i>	114	34
ORF767	817791	818609	3-deoxy-d-manno-octulosonic acid 8- phosphate synthetase	Z50747	<i>Chlamydia psittaci</i>	1112	78
ORF768	818609	819094	protein of unknown function	Z50747	<i>Chlamydia psittaci</i>	545	65
ORF769	819104	819823	ATP binding protein	U72493	<i>Chlamydia trachomatis</i>	1099	88
ORF770	820722	819826	putative				
ORF771	822313	821000	putative				
ORF772	823503	822238	putative				
ORF773	823678	825612	putative				
ORF774	825461	826312	putative				
ORF775	827280	826645	putative				
ORF776	828604	827171	76 kDa protein	L23921	<i>Chlamydia pneumoniae</i>	2179	100
ORF777	830026	828713	76 kDa protein	L23921	<i>Chlamydia pneumoniae</i>	1162	100
ORF778	831047	830085	mviB homolog	U50732	<i>Chlamydia trachomatis</i>	982	58
ORF779	831725	831051	mviB homolog	U50732	<i>Chlamydia trachomatis</i>	740	65
ORF780	832220	833098	T05H10.2	Z47812	<i>Caenorhabditis elegans</i>	407	34
ORF781	833851	833396	ribosomal protein S4 (tps4)	AE000633	<i>Helicobacter pylori</i>	372	53
ORF782	834068	835039	This ORF is homologous to a 40.0 kd hypothetical protein in the htrB 3' region from <i>E. coli</i> . Accession Number X61000	L22217	<i>Mycoplasma-like organism</i>	377	49
ORF783	835792	835127	uridine kinase	L31783	<i>Mus musculus</i>	436	43
ORF784	837624	836116	ORF f397	U29581	<i>Escherichia coli</i>	92	38
ORF785	838951	840882	putative				
ORF786	840869	842185	exodeoxyribonuclease V (recB)	U32811	<i>Haemophilus influenzae</i>	409	40
ORF787	841989	843455	DNA helicase II	U39703	<i>Mycoplasma genitalium</i>	110	46
ORF788	843242	844021	exodeoxyribonuclease V (recB)	U32811	<i>Haemophilus influenzae</i>	196	40
ORF789	845018	843987	MreC protein	M31792	<i>Escherichia coli</i>	76	53
ORF790	846174	844990	aspartate aminotransferase (aspC)	X03629	<i>Escherichia coli</i>	754	40
ORF791	848509	846311	GreA	U02878	<i>Rickettsia prowazekii</i>	190	35

ORF	Begin	End	Homology	ID	Species	Score	I%
ORF792	848568	849014	putative				
ORF793	849082	850488	NADH:ubiquinone oxidoreductase subunit A (GP:Z37111_2)	U32702	<i>Haemophilus influenzae</i>	445	37
ORF794	851512	850574	porphobilinogen synthase	U38348	<i>Chlorobium vibrioforme</i>	769	45
ORF795	852064	852447	putative				
ORF796	852398	853690	putative				
ORF797	855118	854243	geranylgeranyl pyrophosphate synthase	D85029	<i>Arabidopsis thaliana</i>	408	41
ORF798	855751	855128	f147; This 147 aa orf is 26 pct identical (1 gaps) to 99 residues of an approx. 728 aa protein E2BE RABIT SW: P47823	AE000143	<i>Escherichia coli</i>	187	36
ORF799	856551	855829	membrane associated regulatory protein	M28368	<i>Salmonella typhimurium</i>	172	36
ORF800	856730	858556	unknown function	Z32530	<i>Chlamydia trachomatis</i>	842	35
ORF801	858717	859601	exodeoxyribonuclease V (recD)	U32811	<i>Haemophilus influenzae</i>	182	51
ORF802	859591	860205	exonuclease V alpha subunit (AA 1-608)	X04582	<i>Escherichia coli</i>	235	45
ORF803	861132	860284	putative				
ORF804	861426	861163	30S ribosomal protein S20	Z67753	<i>Odontella sinensis</i>	153	41
ORF805	861701	862921	putative				
ORF806	863026	864798	major sigma factor	U04442	<i>Chlamydia psittaci</i>	2661	94
ORF807	864831	865256	putative				
ORF808	865226	866581	dihydropterin pyrophosphokinase /dihydropteroate synthase	Y08611	<i>Pisum sativum</i>	455	48
ORF809	866562	867119	dehydrofolate reductase, type I (folA)	U32772	<i>Haemophilus influenzae</i>	213	49
ORF810	867025	867816	M. jannaschii predicted coding region MJ0768	U67522	<i>Methanococcus jannaschii</i>	207	36
ORF811	867820	868497	putative				
ORF812	869743	868661	RecA	U16739	<i>Chlamydia trachomatis</i>	1512	87
ORF813	870633	870094	unknown function	Z32530	<i>Chlamydia trachomatis</i>	308	45
ORF814	871929	870646	unknown function	Z32530	<i>Chlamydia trachomatis</i>	1410	63
ORF815	872538	872086	putative				
ORF816	873908	872517	putative				
ORF817	874281	874670	nifR3-like gene product	Z37984	<i>Azospirillum brasilense</i>	181	32
ORF818	874582	875286	ORF1 gene product	X62399	<i>Escherichia coli</i>	307	42
ORF819	877857	875377	DNA topoisomerase I	L27797	<i>Bacillus subtilis</i>	1488	50

ORF	Begin	End	Homology	ID	Species	Score	I%
ORF820	878446	879255	putative				
ORF821	880635	879268	sigma factor (ntrA) (AA 1-502)	X05888	<i>Azotobacter vinelandii</i>	257	47
ORF822	882524	880593	DNA helicase II	D90906	<i>Synechocystis</i> sp.	1140	50
ORF823	882612	883319	ipa-57d gene product	X73124	<i>Bacillus subtilis</i>	601	51
ORF824	884155	883538	hypothetical protein	D90915	<i>Synechocystis</i> sp.	344	39
ORF825	884340	885611	19/20 residue stretch (32-51) identical to N-terminal putative signal sequence of unknown, partly cloned <i>B. subtilis</i> gene.; putative	L19954	<i>Bacillus subtilis</i>	456	37
ORF826	885722	887302	heat shock protein	L12004	<i>Chlamydia trachomatis</i>	915	39
ORF827	887587	888153	bas1 protein	Z34917	<i>Hordeum vulgare</i>	474	50
ORF828	888627	888220	putative				
ORF829	889330	888716	hypothetical protein	Y14079	<i>Bacillus subtilis</i>	223	55
ORF830	889898	889323	peptidoglycan-associated lipoprotein	X65796	<i>Escherichia coli</i>	222	50
ORF831	891190	889898	TolB	U32470	<i>Haemophilus influenzae</i>	280	35
ORF832	891828	891247	putative				
ORF833	892421	892017	exbD peptide	M28819	<i>Escherichia coli</i>	77	48
ORF834	893116	892421	inner membrane protein (tolQ)	U32722	<i>Haemophilus influenzae</i>	157	54
ORF835	892521	892925	putative				
ORF836	893392	895419	inner membrane copper tolerance protein	Z36905	<i>Escherichia coli</i>	120	35
ORF837	895745	896527	unknown	D26185	<i>Bacillus subtilis</i>	381	41
ORF838	896668	897558	succinate dehydrogenase subunit C	Y08563	<i>Paenibacillus macerans</i>	253	40
ORF839	897565	899442	succinate dehydrogenase subunit A	Y08563	<i>Paenibacillus macerans</i>	1667	57
ORF840	899420	900229	succinate dehydrogenase subunit B	Y08563	<i>Paenibacillus macerans</i>	656	54
ORF841	903230	900237	putative				
ORF842	905081	903234	putative				
ORF843	906931	905045	sigma factor SibG regulation protein RsbU	D90905	<i>Synechocystis</i> sp.	117	35
ORF844	907248	907832	putative				
ORF845	907784	908128	putative				
ORF846	908132	908677	putative				
ORF847	908589	909320	putative				
ORF848	909405	911465	putative				
ORF849	911677	912360	putative				

DRF	Begin	End	Homology	ID	Species	Score	I%
DRF850	912303	912821	putative				
DRF851	912937	913983	putative				
DRF852	915128	914067	putative				
DRF853	916658	915303	enolase	L29475	<i>Bacillus subtilis</i>	1036	60
DRF854	915627	915376	enolase	U43738	<i>Mycoplasma pneumoniae</i>	226	65
DRF855	917707	916853	excinuclease ABC subunit B (uvrB)	U32804	<i>Haemophilus influenzae</i>	724	46
DRF856	918837	917722	excinuclease ABC subunit B (uvrB)	U32804	<i>Haemophilus influenzae</i>	1029	54
DRF857	919868	918837	tryptophanyl-tRNA synthetase (trpS)	U32746	<i>Haemophilus influenzae</i>	376	40
DRF858	920434	919880	putative				
DRF859	921187	920438	ORF8	X82078	<i>Chlamydia sp.</i>	164	50
DRF860	921959	921195	hypothetical protein	X62475	<i>Chlamydia psittaci</i>	511	44
DRF861	923773	921995	Threonyl tRNA Synthetase	Z80360	<i>Bacillus subtilis</i>	1476	44
DRF862	922146	922415	putative				
DRF863	923943	923674	putative				
DRF864	924077	925006	putative				
DRF865	925436	925083	putative				
DRF866	926524	925349	putative				
DRF867	927920	926433	putative				
DRF868	928319	927951	putative				
DRF869	928963	928334	putative			585	40
DRF870	929248	930987	DNA mismatch repair protein (mutL)	U32692	<i>Haemophilus influenzae</i>	445	39
DRF871	930995	932059	YqhT	D84432	<i>Bacillus subtilis</i>		
DRF872	932121	933515	putative				
DRF873	932881	932513	putative				
DRF874	933485	935746	pulD (ttg start codon)	M32613	<i>Klebsiella pneumoniae</i>	210	33
DRF875	935724	937082	epsE	M96172	<i>Vibrio cholerae</i>	890	55
DRF876	937229	938410	PilG	U32588	<i>Neisseria gonorrhoeae</i>	280	38
DRF877	938281	938805	putative				
DRF878	938809	939255	putative				
DRF879	939165	939782	putative				
DRF880	939760	940791	putative				
DRF881	940822	941106	putative				
DRF882	940977	941351	putative				

ORF	Begin	End	Homology	ID	Species	Score	I%
ORF883	942537	941623	yscT	L25667	<i>Yersinia pseudotuberculosis</i>	169	44
ORF884	942784	942500	yscS	L25667	<i>Yersinia pseudotuberculosis</i>	173	42
ORF885	943149	942799	HrcR	AE000107	<i>Rhizobium sp. NGR234</i>	265	52
ORF886	943799	943029	pathogenicity protein	M64094	<i>Xanthomonas campestris</i>	252	41
ORF887	944055	943732	putative	M74011	<i>Yersinia enterocolitica</i>	112	33
ORF888	944413	943994	putative				
ORF889	945395	944556	putative				
ORF890	945853	945389	putative				
ORF891	946392	945751	HrcJ	U56662	<i>Erwinia amylovora</i>	229	44
ORF892	947410	948081	putative				
ORF893	949871	948915	ORF YOR196c	Z75104	<i>Saccharomyces cerevisiae</i>	702	44
ORF894	951058	949868	dihydrolipoamide dehydrogenase E3 subunit	M57435	<i>Bacillus subtilis</i>	745	39
ORF895	951249	950959	dihydrolipoamide acetyltransferase E3 subunit	M73535	<i>Staphylococcus aureus</i>	166	49
ORF896	951664	952134	putative				
ORF897	952674	952165	SNF	X98455	<i>Bacillus cereus</i>	229	47
ORF898	953491	952589	helicase	U39680	<i>Mycoplasma genitalium</i>	307	42
ORF899	955324	953495	F01G4.1	Z68341	<i>Caenorhabditis elegans</i>	133	57
ORF900	955823	955281	putative				
ORF901	957082	955847	branched-chain amino acid carrier	Z48676	<i>Lactobacillus delbrueckii</i>	297	40
ORF902	957902	957270	endonuclease III	U11289	<i>Bacillus subtilis</i>	317	37
ORF903	959231	957906	homologous to E.coli 50K	X62539	<i>Bacillus subtilis</i>	805	45
ORF904	959376	960284	phosphatidylserine decarboxylase	U72715	<i>Chlamydia trachomatis</i>	776	51
ORF905	960266	961669	putative				
ORF906	961856	964765	secretory component	U06928	<i>Caulobacter crescentus</i>	1812	55
ORF907	966855	965395	28.2% of identity to the Escherichia coli GTP-binding protein Era; putative	L47648	<i>Bacillus subtilis</i>	778	41
ORF908	968204	966975	poly(A) polymerase	L47709	<i>Bacillus subtilis</i>	383	41
ORF909	968791	968237	ClpX-like protein	U18229	<i>Bacillus subtilis</i>	340	39
ORF910	969498	968731	ATP-dependent protease ATPase subunit	D64006	<i>Synechocystis sp.</i>	846	66
ORF911	969858	969511	ClpP	U16135	<i>Synechococcus sp.</i>	257	54

DRF	Begin	End	Homology	ID	Species	Score	I%
DRF912	970118	969762	ATP-dependent clp protease proteolytic component (clpP)	AE000591	<i>Helicobacter pylori</i>	362	63
DRF913	970593	970300	putative				
DRF914	971261	970542	putative				
DRF915	971680	971123	putative				
DRF916	971876	975100	SNF	X98455	<i>Bacillus cereus</i>	778	49
DRF917	975419	976516	MreB protein	M96343	<i>Bacillus subtilis</i>	960	55
DRF918	976584	978320	phospho enol pyruvate carboxykinase	S56812	<i>Chlorobium limicola</i>	1667	64
DRF919	977680	977231	putative				
DRF920	978399	980738	putative				
DRF921	980756	981928	putative			97	50
DRF922	982974	981931	precursor protein (AA -22 to 371)	X52557	<i>Chlamydia trachomatis</i>	618	43
DRF923	984120	983119	NAD+ dependent glycerol-3-phosphate dehydrogenase	L47648	<i>Bacillus subtilis</i>		
ORF924	985502	984120	AgX-1 antigen [human, infertile patient, testis. Peptide, 505 aa]	S73498	<i>Homo sapiens</i>	254	34
ORF925	987180	985882	ORF 4	M72718	<i>Bacillus subtilis</i>	697	38
ORF926	987172	987444	putative				
ORF927	989846	989049	nifU-like protein	AE000542	<i>Helicobacter pylori</i>	302	31
ORF928	991048	989846	putative				
ORF929	991638	990955	phosphoglyceromutase	L09651	<i>Zymomonas mobilis</i>	471	53
ORF930	991794	992498	ORFX13	L09228	<i>Bacillus subtilis</i>	403	39
ORF931	993619	993041	biotin [acetyl-CoA-carboxylase] ligase	L47709	<i>Bacillus subtilis</i>	136	38
ORF932	993530	994792	rod-shape-determining protein	M22857	<i>Escherichia coli</i>	312	44
ORF933	995970	994795	cadmium-transporting ATPase	D64005	<i>Synechocystis sp.</i>	358	47
ORF934	996857	995739	ATPase	L28104	<i>Transposon Tn5422</i>	449	39
ORF935	997603	996782	putative				
ORF936	998969	997572	seryl-trna synthetase	Y09924	<i>Staphylococcus aureus</i>	851	42
ORF937	998896	1000023	orf2, homologue to B.subtilis ribG	X64395	<i>Escherichia coli</i>	596	40
ORF938	1000087	1001340	GTP cyclohydrolase II	D90912	<i>Synechocystis sp.</i>	1078	52
ORF939	1001357	1001818	riboflavin synthase beta subunit	U27202	<i>Actinobacillus pleuropneumoniae</i>	278	36
ORF940	1003288	1001873	putative				
ORF941	1003487	1004146	putative				

ORF	Begin	End	Homology	ID	Species	Score	I%
ORF942	1004485	1005639	D-alanine glycine permease (dagA)	AE000603	<i>Helicobacter pylori</i>	394	33
ORF943	1005643	1005972	hypothetical protein MTCY180.08	Z97193	<i>Mycobacterium tuberculosis</i>	274	58
ORF944	1006784	1006116	similar to trithorax protein in final three exons	U13875	<i>Caenorhabditis elegans</i>	155	46
ORF945	1007563	1006769	ycyJ	D78193	<i>Bacillus subtilis</i>	406	38
ORF946	1009226	1007568	YtpI	AF008220	<i>Bacillus subtilis</i>	992	47
ORF947	1009989	1009336	putative				
ORF948	1015852	1016337	putative				
ORF949	1016561	1016181	putative				
ORF950	1016297	1017532	putative				
ORF951	1016802	1016452	putative				
ORF952	1018993	1017701	phenolhydroxylase component	U32702	<i>Haemophilus influenzae</i>	909	47
ORF953	1019454	1019137	ORF	M63939	<i>Escherichia coli</i>	96	45
ORF954	1020764	1019562	pCTHom1 gene product	M94254	<i>Chlamydia trachomatis</i>	1185	65
ORF955	1021405	1021037	histone H1-like protein	M80324	<i>Chlamydia psittaci</i>	319	62
ORF956	1021821	1024286	phosphoprotein	L25078	<i>Chlamydia trachomatis</i>	739	41
ORF957	1024697	1024248	putative				
ORF958	1025569	1024508	protoporphyrinogen oxidase	U25114	<i>Mus musculus</i>	86	38
ORF959	1026969	1025590	oxygen independent coprophorphyrinogen III oxidase	D90912	<i>Synechocystis sp.</i>	880	42
ORF960	1027789	1026947	uroporphyrinogen decarboxylase	M97208	<i>Bacillus subtilis</i>	372	38
ORF961	1031199	1027945	transcription-repair coupling factor (trcF) (mfd)	U32805	<i>Haemophilus influenzae</i>	1584	42
ORF962	1031717	1031172	alanyl-tRNA synthetase	X95571	<i>Thiobacillus ferrooxidans</i>	76	31
ORF963	1033057	1031612	alanyl-tRNA synthetase	AE000353	<i>Escherichia coli</i>	889	40
ORF964	1033425	1033039	alanyl-tRNA synthetase (alaS)	AE000629	<i>Helicobacter pylori</i>	327	51
ORF965	1033784	1033200	alanyl-tRNA synthetase	X59956	<i>Rhizobium leguminosarum</i>	416	47
ORF966	1033963	1036038	transketolase	Z73234	<i>Bacillus subtilis</i>	1398	44
ORF967	1036945	1036010	AMP nucleosidase	AE000290	<i>Escherichia coli</i>	265	42
ORF968	1037110	1037679	elongation factor P	U14003	<i>Escherichia coli</i>	458	51
ORF969	1037696	1037944	putative				
ORF970	1038916	1037975	putative				
ORF971	1040582	1039026	HSP60 chaperonin	X62914	<i>Clostridium perfringens</i>	284	31

ORF	Begin	End	Homology	ID	Species	Score	I%
ORF972	1040997	1042337	PROBABLE UDP-N-ACETYL MURAMOYLALANYL-D-GLUTAMYL-2, 6-DIAMINOLIGASE (EC 6.3.2.15)	AB001488	<i>Bacillus subtilis</i>	446	39
ORF973	1042357	1043403	ORF-Y (AA 1-360)	X51584	<i>Escherichia coli</i>	582	45
ORF974	1043367	1044623	UDP-N-acetylmuramoylalanine-D-glutamate ligase (murD)	U32793	<i>Haemophilus influenzae</i>	348	42
ORF975	1044607	1045362	hypothetical protein	Y14079	<i>Bacillus subtilis</i>	115	38
ORF976	1045384	1046538	spoVE gene product (AA 1-366)	X51419	<i>Bacillus subtilis</i>	479	35
ORF977	1046447	1047517	mur	Y13922	<i>Enterococcus hirae</i>	256	45
ORF978	1047521	1049956	UDP-N-acetylmuramate-alanine ligase (murC)	U32794	<i>Haemophilus influenzae</i>	756	38
ORF979	1050611	1050036	unknown	Z74024	<i>Mycobacterium tuberculosis</i>	78	44
ORF980	1050925	1050566	cycY gene product	U14003	<i>Escherichia coli</i>	179	34
ORF981	1051728	1051090	putative	D90908	<i>Synechocystis sp.</i>	135	33
ORF982	1051743	1052063	hypothetical protein	Z98209	<i>Mycobacterium tuberculosis</i>	441	37
ORF983	1052101	1053126	trna delta(2)-isopentenylpyrophosphate transferase	AE000579	<i>Helicobacter pylori</i>	826	44
ORF984	1054201	1053107	conserved hypothetical protein				
ORF985	1054242	1055555	putative				
ORF986	1055483	1055908	putative	D84432	<i>Bacillus subtilis</i>	202	38
ORF987	1056609	1056965	YqeL	L13242	<i>Ricinus communis</i>	1266	55
ORF988	1056961	1058232	beta-ketoacyl-ACP synthase	U30313	<i>Homo sapiens</i>	122	42
ORF989	1058238	1058687	diadenosine tetraphosphatase	AE000576	<i>Helicobacter pylori</i>	209	39
ORF990	1059371	1058727	inorganic pyrophosphatase (ppa)	U51099	<i>Bacillus cereus</i>	680	45
ORF991	1059526	1060578	leucine dehydrogenase LeuDH	U40433	<i>Arabidopsis thaliana</i>	335	43
ORF992	1061553	1060579	3'(2'),5'-bispophosphate nucleotidase				
ORF993	1061674	1062411	putative	U29581	<i>Escherichia coli</i>	383	44
ORF994	1062377	1064077	2-acylglycerophosphoethanolamine acyl transferase/acyl carrier protein synthetase	M29291	<i>Bacillus sphaericus</i>	200	35
ORF995	1064116	1065243	7-keto-8-aminopelargonic acid synthetase (bioF)	Y10304	<i>Bacillus subtilis</i>	1009	43
ORF996	1067451	1065178	priA				

ORF	Begin	End	Homology	ID	Species	Score	I%
ORF997	1068065	1067376	putative				
ORF998	1068209	1068706	putative				
ORF999	1069958	1068819	unknown	U41759	<i>Chlamydia psittaci</i>	777	41
ORF1000	1071163	1070033	unknown	U41759	<i>Chlamydia psittaci</i>	381	36
ORF1001	1072438	1071332	unknown	U41759	<i>Chlamydia psittaci</i>	254	37
ORF1002	1072997	1073476	putative				
ORF1003	1074239	1075864	lysyl-tRNA synthetase	D90906	<i>Synechocystis sp.</i>	1007	48
ORF1004	1076790	1075867	cysteinyI-tRNA synthetase	L14580	<i>Bacillus subtilis</i>	395	52
ORF1005	1077268	1076573	cys-tRNA synthetase (cysS)	U32693	<i>Haemophilus influenzae</i>	431	56
ORF1006	1077999	1078724	putative				
ORF1007	1079088	1078672	ribonuclease P protein component (gtg start codon)	M11056	<i>Escherichia coli</i>	78	46
ORF1008	1079642	1079944	30S ribosomal subunit protein S14	U18997	<i>Escherichia coli</i>	260	50
ORF1009	1080501	1079995	F18C12.2	Z75536	<i>Caenorhabditis elegans</i>	118	38
ORF1010	1080775	1081341	putative				
ORF1011	1083158	1081350	deoxyribodipyrimidine photolyase	J03294	<i>Bacillus subtilis</i>	687	44
ORF1012	1084677	1083235	DNA mismatch repair protein	U71154	<i>Aquifex pyrophilus</i>	735	48
ORF1013	1085648	1084632	DNA mismatch repair protein	D90909	<i>Synechocystis sp.</i>	565	39
ORF1014	1086117	1086737	DNA primase (dnaG)	U32735	<i>Haemophilus influenzae</i>	303	40
ORF1015	1086692	1087897	DnaG	Z83860	<i>Mycobacterium tuberculosis</i>	222	37
ORF1016	1088646	1089005	putative				
ORF1017	1089146	1089805	putative				
ORF1018	1092931	1089890	glycyl-tRNA synthetase	U20547	<i>Chlamydia trachomatis</i>	2569	48
ORF1019	1093179	1092889	putative				
ORF1020	1093584	1094204	phosphatidylglycerophosphate synthase	U87792	<i>Bacillus subtilis</i>	163	55
ORF1021	1095619	1094192	glycogen (starch) synthase	D90899	<i>Synechocystis sp.</i>	574	40
ORF1022	1096074	1096628	partial ctc gene product (AA 1-186)	X16518	<i>Bacillus subtilis</i>	86	37
ORF1023	1096633	1097082	peptidyl-tRNA hydrolase	U31570	<i>Chlamydia trachomatis</i>	378	53
ORF1024	1097266	1097601	ribosomal protein S6 (rps6)	AE000630	<i>Helicobacter pylori</i>	179	39
ORF1025	1097622	1097867	ribosomal protein S18 homolog; putative	M62820	<i>Chlamydia trachomatis</i>	324	86
ORF1026	1097886	1098392	putative heat shock protein ORF; putative	M62820	<i>Chlamydia trachomatis</i>	190	79
ORF1027	1099521	1099279	putative				
ORF1028	1099689	1101053	putative				

ORF	Begin	End	Homology	ID	Species	Score	I%
ORF1029	1102192	1101107	putative				
ORF1030	1104950	1102116	glycerol-3-phosphate acyltransferase	M80571	<i>Cucumis sativus</i>	574	43
ORF1031	1106508	1104946	ORF_f495; orfF of ECMRED, uses 2nd start	U18997	<i>Escherichia coli</i>	855	38
ORF1032	1106722	1107249	putative				
ORF1033	1107463	1108101	PlsX	U59433	<i>Bacillus subtilis</i>	282	45
ORF1034	1108041	1108421	fatty acid/phospholipid synthesis protein (plsX)	AE000540	<i>Helicobacter pylori</i>	205	35
ORF1035	1108520	1113370	putative 98 kDa outer membrane protein	U72499	<i>Chlamydia psittaci</i>	352	44
ORF1036	1114958	1113447	putative				
ORF1037	1116915	1115071	lipid A disaccharide synthetase (lpxB)	U32786	<i>Haemophilus influenzae</i>	477	42
ORF1038	1118183	1116894	poly(A) polymerase	AE000123	<i>Escherichia coli</i>	555	46
ORF1039	1118846	1120030	putative	L12968	<i>Escherichia coli</i>	880	50
ORF1040	1120040	1120522	glucosamine fructose-6-phosphate aminotransferase (isomerizing) (glmS)	AE000651	<i>Helicobacter pylori</i>	396	52
ORF1041	1120510	1121430	glutamine amidotransferase; glucosamine--fructose-6-phosphate aminotransferase	AE000450	<i>Escherichia coli</i>	494	44
ORF1042	1121321	1121866	L-glutamine:D-fructose-6-P amidotransferase precursor	U17352	<i>Thermus aquaticus thermophilus</i>	374	50
ORF1043	1122123	1122899	tyrosine-specific transport protein	AE000284	<i>Escherichia coli</i>	281	41
ORF1044	1124842	1125564	putative				
ORF1045	1126526	1125579	cell division protein (ftsY)	U32760	<i>Haemophilus influenzae</i>	497	41
ORF1046	1126519	1127676	succinyl-CoA synthetase beta-subunit	J01619	<i>Escherichia coli</i>	784	43
ORF1047	1127672	1128571	succinyl coenzyme A synthetase alpha subunit	U23408	<i>Dictyostelium discoideum</i>	978	63
ORF1048	1130230	1131336	putative				
ORF1049	1131480	1132553	putative				
ORF1050	1132830	1133843	putative				
ORF1051	1134121	1134855	serine protease HtrA	D90905	<i>Synechocystis sp.</i>	307	51
ORF1052	1134642	1135592	GsrA protein	D78376	<i>Yersinia enterocolitica</i>	497	41
ORF1053	1135964	1135653	putative				
ORF1054	1137132	1135954	R11H6.1	Z93386	<i>Caenorhabditis elegans</i>	445	37
ORF1055	1137169	1140102	Ydr430cp; CAI: 0.15	U33007	<i>Saccharomyces cerevisiae</i>	559	40

ORF	Begin	End	Homology	ID	Species	Score	I%
ORF1056	1141365	1140112	hypothetical 54.7 kD protein in udp 3' region precursor (o475)	AE000459	<i>Escherichia coli</i>	222	34
ORF1057	1142150	1141356	phosphatidylserine synthase (pssA)	AE000614	<i>Helicobacter pylori</i>	307	41
ORF1058	1142520	1145660	ribonucleotide reductase subunit M1	K02927	<i>Mus musculus</i>	1433	45
ORF1059	1145627	1146721	ribonucleoside diphosphate reductase, beta subunit (nrdB)	AE000553	<i>Helicobacter pylori</i>	443	32
ORF1060	1146862	1147545	unknown	Z95398	<i>Mycobacterium leprae</i>	191	35
ORF1061	1147666	1148190	YtgB	AF008220	<i>Bacillus subtilis</i>	262	44
ORF1062	1148514	1148224	ORF2	U01958	<i>Bacillus licheniformis</i>	135	54
ORF1063	1149136	1148348	ORF2	M31827	<i>Bacillus subtilis</i>	268	40
ORF1064	1149702	1149166	putative				
ORF1065	1150031	1150591	unknown	Z85982	<i>Mycobacterium tuberculosis</i>	445	49
ORF1066	1150785	1151147	ribosomal protein L20 (AA 1-119)	X16188	<i>Bacillus stearothermophilus</i>	273	44
ORF1067	1151165	1152181	phenylalanyl-tRNA synthetase beta subunit	Z75208	<i>Bacillus subtilis</i>	777	40
ORF1068	1152522	1154591	putative				
ORF1069	1155666	1154566	putative				
ORF1070	1156743	1155670	putative				
ORF1071	1156859	1157815	hypothetical	U32723	<i>Haemophilus influenzae</i>	252	42
ORF1072	1157982	1160735	ATP-binding protein	U01376	<i>Escherichia coli</i>	1314	56
ORF1073	1162620	1160917	polynucleotide phosphorylase	AF010578	<i>Pisum sativum</i>	1416	52
ORF1074	1162970	1162590	polyribonucleotide phosphorylase	U52048	<i>Spinacia oleracea</i>	312	53
ORF1075	1163532	1164020	orf150 gene product	X95938	<i>Porphyromonas gingivalis</i>	335	43
ORF1076	1163995	1164294	putative				
ORF1077	1165569	1165030	putative				
ORF1078	1166108	1165566	putative				
ORF1079	1166644	1166141	putative				
ORF1080	1167055	1168374	putative				
ORF1081	1169218	1168337	methionine aminopeptidase	D64003	<i>Synechocystis sp.</i>	488	54
ORF1082	1169823	1169218	ORF o197	U18997	<i>Escherichia coli</i>	281	30
ORF1083	1171324	1170572	putative				
ORF1084	1172085	1171177	hypothetical	U32720	<i>Haemophilus influenzae</i>	162	44
ORF1085	1172394	1173773	fumarase	D64000	<i>Synechocystis sp.</i>	1292	57
ORF1086	1175209	1173881	prs-associated putative membrane protein	U02424	<i>Escherichia coli</i>	570	39

ORF	Begin	End	Homology	ID	Species	Score	I%
ORF1087	1175555	1175127	hypothetical protein in pth-prs intergenic region	AE000219	<i>Escherichia coli</i>	278	46
ORF1088	1175778	1177043	hypothetical protein	Z96072	<i>Mycobacterium tuberculosis</i>	109	43
ORF1089	1177177	1179048	putative	U32781	<i>Haemophilus influenzae</i>	731	54
ORF1090	1179156	1180085	penicillin tolerance protein (lytB)				
ORF1091	1180045	1180779	putative				
ORF1092	1181942	1180788	putative				
ORF1093	1182296	1181961	putative				
ORF1094	1183844	1182300	putative				
ORF1095	1184420	1183848	putative				
ORF1096	1185382	1184366	putative				
ORF1097	1185858	1185226	putative				
ORF1098	1186164	1186481	putative	U92524	<i>Salmonella typhimurium</i>	401	48
ORF1099	1187386	1186484	site-specific recombinase	L40822	<i>Chlamydia trachomatis</i>	1154	63
ORF1100	1187370	1189028	phophoglucosyltransferase-like protein				
ORF1101	1189321	1190889	putative	L40958	<i>Flavaria bidentis</i>	775	46
ORF1102	1191142	1192146	NADP-malate dehydrogenase				
ORF1103	1191974	1191729	putative				
ORF1104	1193815	1192991	putative	AE000256	<i>Escherichia coli</i>	1022	44
ORF1105	1195702	1194248	o460; This 460 aa orf is 46 pct identical (26 gaps) to 458 residues of an approx. 488 aa protein ARCD PSEAE SW: P18275				
ORF1106	1196303	1195716	putative				
ORF1107	1196831	1196337	putative				
ORF1108	1197807	1196746	putative				
ORF1109	1198740	1197883	putative	U67551	<i>Methanococcus jannaschii</i>	245	37
ORF1110	1200232	1198721	shikimate 5-dehydrogenase	U32705	<i>Haemophilus influenzae</i>	478	45
ORF1111	1201286	1200135	3-dehydroquinase synthase (aroB)	L29562	<i>Vibrio anguillarum</i>	780	50
ORF1112	1202386	1201259	2,3-dihydroxybenzoic acid				
ORF1113	1202901	1202350	putative				
ORF1114	1204162	1202816	5-enolpyruvylshikimate 3-phosphate synthase	U67500	<i>Methanococcus jannaschii</i>	520	40
ORF1115	1203177	1203464	putative				

ORF	Begin	End	Homology	ID	Species	Score	I%
ORF1116	1205028	1204180	putative				
ORF1117	1206392	1204878	bioA gene product	A02587	unidentified	834	48
ORF1118	1206742	1206086	dethiobiotin synthase (bioD)	U32830	<i>Haemophilus influenzae</i>	243	37
ORF1119	1207872	1206724	L-alanine - pimelyl CoA ligase	U51868	<i>Bacillus subtilis</i>	601	41
ORF1120	1208852	1207851	biotin synthase	U24147	<i>Arabidopsis thaliana</i>	892	52
ORF1121	1210518	1209742	tryptophan hydroxylase	U26428	<i>Gallus gallus</i>	237	34
ORF1122	1210703	1211494	dihydrodipicolinate reductase	U47017	<i>Pseudomonas syringae pv. tabaci</i>	345	37
ORF1123	1211870	1212754	aspartate-semialdehyde dehydrogenase	U67476	<i>Methanococcus jannaschii</i>	444	43
ORF1124	1212742	1214064	aspartokinase III	U00006	<i>Escherichia coli</i>	473	47
ORF1125	1214046	1214858	dihydrodipicolinate synthase	D64006	<i>Synechocystis sp.</i>	238	40
ORF1126	1215551	1216318	putative				
ORF1127	1216493	1216849	putative				
ORF1128	1217183	1219612	putative				
ORF1129	1220068	1219673	putative				
ORF1130	1219710	1220669	putative				
ORF1131	1220630	1221376	putative				
ORF1132	1221645	1223681	unknown	D26185	<i>Bacillus subtilis</i>	621	43
ORF1133	1223894	1224988	putative				
ORF1134	1225000	1225830	high level kasamycin resistance	D26185	<i>Bacillus subtilis</i>	422	41
ORF1135	1227810	1225879	hypothetical protein	D90903	<i>Synechocystis sp.</i>	1129	43
ORF1136	1226528	1226908	putative				
ORF1137	1229972	1228311	exonuclease VII, large subunit (xseA)	U32723	<i>Haemophilus influenzae</i>	666	46
ORF1138	47569	47018	Integrase/recombinase	AE001308	<i>Chlamydia trachomatis</i>	716	72
ORF1139	49980	49117	putative				
ORF1140	53356	52898	putative				
ORF1141	54477	54884	O-Sialoglycoprotein Endopeptidase	AE001307	<i>Chlamydia trachomatis</i>	311	51
ORF1142	63753	63998	PTS PEP Phosphotransferase	AE001306	<i>Chlamydia trachomatis</i>	198	61
ORF1143	77164	77487	putative				
ORF1144	79724	79302	Sms Protein	AE001302	<i>Chlamydia trachomatis</i>	458	57
ORF1145	88721	88951	putative				
ORF1146	94067	94429	putative				
ORF1147	122832	123341	hypothetical protein	AE001303	<i>Chlamydia trachomatis</i>	398	61
ORF1148	147536	147234	putative				

ORF	Begin	End	Homology	ID	Species	Score	I%
ORF1149	15890	159346	S16 Ribosomal Protein	AE001277	<i>Chlamydia trachomatis</i>	467	78
ORF1150	168470	168979	putative				
ORF1151	169183	169452	putative	AE001278	<i>Chlamydia trachomatis</i>	262	68
ORF1152	171785	171504	Cationic Amino Acid Transporter	AE001278	<i>Chlamydia trachomatis</i>	533	48
ORF1153	172518	171775	Cationic Amino Acid Transporter				
ORF1154	193599	194045	putative	AE001288	<i>Chlamydia trachomatis</i>	536	82
ORF1155	195704	196075	S/T Protein Kinase	X80061	<i>Chlamydia pneumoniae</i>	856	96
ORF1156	210687	210145	KDO-transferase				
ORF1157	211100	210708	putative				
ORF1158	215420	215088	putative				
ORF1159	217914	218246	putative				
ORF1160	218925	218701	putative				
ORF1161	223785	223525	IMP dehydrogenase	U13372	<i>Borrelia burgdorferi</i>	270	63
ORF1162	224271	223999	putative				
ORF1163	228691	228407	putative				
ORF1164	235050	235334	(Methylase)	AE001287	<i>Chlamydia trachomatis</i>	331	66
ORF1165	252308	253021	Oligopeptide Permease	AE001293	<i>Chlamydia trachomatis</i>	838	72
ORF1166	258280	258912	Dicarboxylate Translocator	AE001294	<i>Chlamydia trachomatis</i>	909	80
ORF1167	261325	261567	putative				
ORF1168	268195	268878	hypothetical protein	AE001287	<i>Chlamydia trachomatis</i>	556	52
ORF1169	269447	268881	putative				
ORF1170	271263	271538	putative				
ORF1171	271957	272346	putative				
ORF1172	274176	274550	putative				
ORF1173	275736	275314	Disulfide bond Oxidoreductase	AE001291	<i>Chlamydia trachomatis</i>	519	73
ORF1174	276490	276927	hypothetical protein	AE001291	<i>Chlamydia trachomatis</i>	249	53
ORF1175	277577	277861	hypothetical protein	AE001291	<i>Chlamydia trachomatis</i>	256	52
ORF1176	288163	287909	putative				
ORF1177	290130	289789	putative				
ORF1178	290989	291225	putative				
ORF1179	291372	291860	adenylate cyclase	AE001286	<i>Chlamydia trachomatis</i>	388	48
ORF1180	311239	311622	putative				
ORF1181	328665	328384	putative				

ORF	Begin	End	Homology	ID	Species	Score	I%
ORF1182	337348	338289	sodium-dependent transporter	AF017105	<i>Chlamydia psittaci</i>	1112	72
ORF1183	364764	364369	Prolipoprotein Diacylglycerol Transferase	AE001298	<i>Chlamydia trachomatis</i>	300	54
ORF1184	389623	390135	hypothetical protein	AE001282	<i>Chlamydia trachomatis</i>	75	33
ORF1185	393729	394343	ABC superfamily ATPase	AE001282	<i>Chlamydia trachomatis</i>	473	52
ORF1186	407379	407621	putative				
ORF1187	410944	410708	putative				
ORF1188	427632	427988	putative				
ORF1189	428172	428486	putative				
ORF1190	436761	437246	hypothetical protein	AE001279	<i>Chlamydia trachomatis</i>	661	81
ORF1191	460911	461159	putative				
ORF1192	477597	477313	hypothetical protein	AE001300	<i>Chlamydia trachomatis</i>	309	62
ORF1193	487303	487001	putative				
ORF1194	487764	487534	Glycine Cleavage System H Protein	AE001300	<i>Chlamydia trachomatis</i>	221	67
ORF1195	498502	499017	hypothetical protein	AE001275	<i>Chlamydia trachomatis</i>	206	32
ORF1196	499795	500466	putative				
ORF1197	571928	572344	putative				
ORF1198	572367	572131	putative				
ORF1199	588184	587915	hypothetical protein	AE001312	<i>Chlamydia trachomatis</i>	256	62
ORF1200	600587	600907	(Metalloenzyme)	AE001316	<i>Chlamydia trachomatis</i>	314	61
ORF1201	609731	608895	putative				
ORF1202	614039	614755	hypothetical protein	AE001317	<i>Chlamydia trachomatis</i>	475	46
ORF1203	614823	615152	putative				
ORF1204	638244	638831	ABC Transporter ATPase	AE001315	<i>Chlamydia trachomatis</i>	614	61
ORF1205	638819	639094	(Metal Transport Protein)	AE001315	<i>Chlamydia trachomatis</i>	265	63
ORF1206	639073	639636	(Metal Transport Protein)	AE001315	<i>Chlamydia trachomatis</i>	687	69
ORF1207	647901	648236	hypothetical protein	AE001317	<i>Chlamydia trachomatis</i>	139	38
ORF1208	678510	679469	phosphohydrolase	AE001320	<i>Chlamydia trachomatis</i>	995	63
ORF1209	688178	688732	hypothetical protein	AE001320	<i>Chlamydia trachomatis</i>	366	43
ORF1210	696045	696563	methyltransferase	AE001321	<i>Chlamydia trachomatis</i>	369	49
ORF1211	708998	708588	Glucose-1-P Adenylyltransferase	AE001322	<i>Chlamydia trachomatis</i>	507	83
ORF1212	709808	710089	putative				
ORF1213	718240	717737	Glycerol-3-P Phosphatidyltransferase	AE001323	<i>Chlamydia trachomatis</i>	573	66
ORF1214	737828	737565	S19 Ribosomal Protein	AE001323	<i>Chlamydia trachomatis</i>	439	94

ORF	Begin	End	Homology	ID	Species	Score	I%
ORF1215	779502	780257	hypothetical protein	AE001322	<i>Chlamydia trachomatis</i>	476	48
ORF1216	806310	805864	hypothetical protein	AE001337	<i>Chlamydia trachomatis</i>	512	67
ORF1217	820931	820707	putative	AE001334	<i>Chlamydia trachomatis</i>	967	49
ORF1218	837696	839096	Exodeoxyribonuclease V, Gamma				
ORF1219	883307	883549	putative				
ORF1220	892010	891726	putative				
ORF1221	893277	893564	putative				
ORF1222	936998	937225	Gen. Secretion Protein E	AE001327	<i>Chlamydia trachomatis</i>	256	67
ORF1223	946865	947419	putative				
ORF1224	975187	975411	SWF/SNF family helicase	AE001341	<i>Chlamydia trachomatis</i>	363	96
ORF1225	985882	985517	hypothetical protein	AE001342	<i>Chlamydia trachomatis</i>	166	33
ORF1226	987713	987180	hypothetical protein	AE001342	<i>Chlamydia trachomatis</i>	447	59
ORF1227	988215	987733	Flagellar M-Ring Protein	AE001342	<i>Chlamydia trachomatis</i>	304	44
ORF1228	988754	988530	Flagellar M-Ring Protein	AE001342	<i>Chlamydia trachomatis</i>	92	36
ORF1229	992542	992841	hypothetical protein	AE001343	<i>Chlamydia trachomatis</i>	112	39
ORF1230	992759	993067	hypothetical protein	AE001343	<i>Chlamydia trachomatis</i>	100	32
ORF1231	1004247	1004528	D-Ala/Gly Permease	AE001344	<i>Chlamydia trachomatis</i>	283	64
ORF1232	1015013	1014294	235aa long hypothetical protein	AB009472	<i>Pyrococcus horikoshii</i>	104	54
ORF1233	1056147	1056545	putative				
ORF1234	1077682	1078035	predicted disulfide bond isomerase	AE001351	<i>Chlamydia trachomatis</i>	233	46
ORF1235	1088121	1088381	putative				
ORF1236	1098430	1098852	Predicted Kinase	AE001352	<i>Chlamydia trachomatis</i>	384	59
ORF1237	1098798	1099319	Predicted Kinase	AE001352	<i>Chlamydia trachomatis</i>	322	45
ORF1238	1123198	1123515	Transport Permease	AE001354	<i>Chlamydia trachomatis</i>	313	72
ORF1239	1123606	1124256	Tyrosine Transport	AE001354	<i>Chlamydia trachomatis</i>	577	58
ORF1240	1124453	1124797	Tyrosine Transport	AE001354	<i>Chlamydia trachomatis</i>	323	50
ORF1241	1129253	1129567	putative				
ORF1242	1164947	1164474	hypothetical protein	AE001357	<i>Chlamydia trachomatis</i>	412	56
ORF1243	1170457	1170053	hypothetical protein	AE001358	<i>Chlamydia trachomatis</i>	283	59
ORF1244	1172342	1171863	ABC transporter permease	AE001358	<i>Chlamydia trachomatis</i>	457	55
ORF1245	1192155	1192835	putative				
ORF1246	1192759	1192992	putative				
ORF1247	1193861	1194142	putative				

ORF	Begin	End	Homology	ID	Species	Score	I%
ORF1248	1194036	1193779	(D-Amino Acid Dehydrogenase)	AE001311	<i>Chlamydia trachomatis</i>	269	79
ORF1249	1209748	1209053	conserved hypothetical protein	AE000958	<i>Archaeoglobus fulgidus</i>	121	38
ORF1250	1215111	1215419	putative				
ORF1251	1216302	1216538	putative				
ORF1252	1228072	1227818	hypothetical protein	AE001306	<i>Chlamydia trachomatis</i>	134	39
ORF1253	1228304	1228080	xseB	AL021897	<i>Mycobacterium tuberculosis</i>	89	33
ORF1254	26599	26222	putative				
ORF1255	27609	27367	putative				
ORF1256	67206	66967	putative				
ORF1257	70612	70352	putative				
ORF1258	132703	132945	putative				
ORF1259	178073	178393	putative				
ORF1260	208576	208349	putative				
ORF1261	209156	208929	putative				
ORF1262	209263	209024	putative				
ORF1263	210304	210639	putative				
ORF1264	299009	299452	putative				
ORF1265	352106	351717	putative				
ORF1266	420182	419949	Flagellar Secretion Protein	AE001280	<i>Chlamydia trachomatis</i>	115	43
ORF1267	553602	553381	putative				
ORF1268	556538	556807	putative				
ORF1269	594348	593797	putative				
ORF1270	595169	594876	putative				
ORF1271	662148	662381	putative				
ORF1272	706528	706893	putative				
ORF1273	803315	803650	putative				
ORF1274	849551	849306	putative				
ORF1275	913676	913275	putative				
ORF1276	927087	926836	putative				
ORF1277	930587	930360	putative				
ORF1278	986531	986764	ORF 12	M72718	<i>Bacillus subtilis</i>	106	48
ORF1279	996229	996486	putative				
ORF1280	1000373	1000002	putative				

DRF	Begin	End	Homology	ID	Species	Score	I%
DRF1281	1010291	1010037	putative				
DRF1282	1011128	1010793	106aa long hypothetical protein	AB009472	<i>Pyrococcus horikoshii</i>	159	50
DRF1283	1012924	1012694	putative				
DRF1284	1028659	1028913	putative				
DRF1285	1086481	1086762	putative				
DRF1286	1118658	1118879	Phosphoglucomutase	AE001354	<i>Chlamydia trachomatis</i>	291	84
DRF1287	1170098	1169835	hypothetical protein	AE001358	<i>Chlamydia trachomatis</i>	187	53
DRF1288	1180828	1181184	putative				
DRF1289	1182658	1183035	putative				
DRF1290	1195076	1194795	putative				
DRF1291	1195890	1196183	putative				

Table 2

ORF Nos	begin	end	potential start
2	42	794	42
3	1258	1614	1261
4	1807	2418	1807
5	3393	2491	3393
6	3639	4067	3639
7	5649	4270	5649
8	7463	6012	7463
9	8051	8962	8051
10	9129	9959	9138
11	10687	10361	10639
12	10927	11232	10927
13	11246	12727	11246
14	12691	14190	12691
15	14484	17249	14484
16	16039	15770	16036
17	17845	20853	17845
18	21137	22042	21137
19	22046	23476	22046
20	23681	26110	23681
21	26109	25861	26109
22	26241	26978	26241
23	26960	27754	26960
24	27747	28577	27747
25	28887	29492	28950
26	29432	30028	29432
27	30024	31472	30024
28	31758	32288	31758
29	32201	33991	32201
30	33852	34541	33852
31	34783	36063	34783
32	36009	37529	36009
33	37881	39362	37881
34	39418	39161	39418

ORF Nos	begin	end	potential start
35	39366	40715	39366
36	43076	41094	43076
37	43800	43066	43800
38	44828	43785	44768
39	45340	44753	45340
40	45752	45372	45752
41	46996	45701	46996
42	47961	47569	47961
43	48960	48040	48960
44	51452	50133	51452
45	52606	51335	52606
46	53684	53319	53684
47	54195	53746	54195
48	55278	56453	55278
49	56493	57266	56493
50	57297	58526	57297
51	59851	58565	59851
52	61495	59924	61495
53	61324	62151	61324
54	62132	62470	62132
55	62474	63733	62474
56	63881	64186	63881
57	64611	64318	64611
58	65485	64673	65485
59	65999	65301	65999
60	66244	67281	66244
61	67265	67699	67265
62	67703	68539	67760
63	68805	70736	68805
64	69172	68831	69172
65	70642	71142	70642
66	71325	72029	71325
67	72060	73637	72060
68	74061	76175	74061

ORF Nos	begin	end	potential start
69	78351	77680	78351
70	79356	78355	79356
71	79983	79693	79983
72	80441	79938	80441
73	80475	80969	80475
74	81296	83080	81332
75	83291	83932	83291
76	84005	84769	84005
77	84975	85244	84975
78	85123	85425	85123
79	85397	85903	85397
80	85909	86583	85909
81	86626	88065	86626
82	89257	91026	89257
83	91291	93030	91291
84	93295	94086	93295
85	95285	94707	95279
86	95667	96557	95667
87	96317	97456	96317
88	98435	97968	98435
89	99460	98426	99460
90	100144	101325	100144
91	101457	101720	101457
92	101704	102273	101704
93	102356	102805	102356
94	102835	103530	102835
95	103549	104058	103549
96	104096	104491	104096
97	104601	108386	104601
98	108401	112054	108401
99	112033	112590	112033
100	112672	113682	112672
101	113726	114121	113726
102	114711	114136	114711

ORF Nos	begin	end	potential start
103	115267	115755	115267
104	115911	116543	115911
105	116736	118055	116778
106	117968	118522	117968
107	118530	119843	118530
108	119816	120457	119816
109	120451	122430	120451
110	122504	122950	122504
111	123528	126347	123528
112	126332	129166	126332
113	134690	129213	134690
114	134925	136382	134931
115	137870	136482	137867
116	137899	138240	137899
117	138239	137928	138239
118	139558	138257	139558
119	140352	139516	140352
120	140498	141841	140498
121	141855	142658	141855
122	144258	143050	144258
123	145258	144494	145258
124	145454	146749	145454
125	147318	146767	147318
126	148261	147677	148261
127	149029	152157	149029
128	154108	152201	154108
129	155135	154308	155135
130	155141	155467	155141
131	155703	156779	155703
132	156748	157635	156748
133	157653	158996	157653
134	159363	159986	159363
135	159880	160446	159880
136	160477	160839	160477

ORF Nos	begin	end	potential start
137	160898	161539	160898
138	161527	162153	161527
139	162144	162443	162144
140	162437	164098	162437
141	165451	164228	165451
142	166349	165411	166349
143	166949	168442	166949
144	169416	171029	169416
145	170857	171459	170857
146	172652	173428	172652
147	174626	173439	174626
148	174816	175613	174816
149	175598	175954	175598
150	175958	176935	175958
151	177708	176938	177708
152	177128	177376	177128
153	179472	177841	179472
154	179822	179517	179822
155	181793	179943	181793
156	182628	181876	182628
157	184420	183074	184420
158	184988	184467	184988
159	185483	185112	185483
160	185902	185483	185902
161	186174	185839	186174
162	187720	186587	187720
163	188318	190933	188318
164	191090	191635	191090
165	191547	192743	191547
166	192969	193469	192969
167	194044	193610	194044
168	194196	195809	194196
169	196088	198073	196088
170	198132	199454	198132

ORF Nos	begin	end	potential start
171	199351	202818	199351
172	204552	202999	204552
173	205648	204692	205639
174	205807	207327	205807
175	207182	207775	207182
176	207779	208267	207779
177	208267	209577	208267
178	211807	211271	211807
179	212188	211844	212188
180	214079	212448	214079
181	214907	214083	214907
182	216154	215429	216154
183	216115	216678	216115
184	216728	217282	216728
185	217267	217866	217267
186	218593	218261	218590
187	219821	218994	219821
188	221382	220309	221382
189	222719	221433	222719
190	223521	222724	223521
191	224499	225008	224499
192	225140	225559	225140
193	225555	226802	225555
194	227800	226892	227743
195	228335	228072	228335
196	229251	228643	229251
197	230983	229622	230983
198	231483	230983	231483
199	232063	231509	232063
200	232739	232053	232739
201	233166	234356	233166
202	233518	233165	233518
203	234536	235186	234536
204	235379	236689	235379

ORF Nos	begin	end	potential start
205	236680	237618	236689
206	237521	238345	237521
207	238281	238973	238281
208	238871	240115	238871
209	240191	241564	240191
210	242281	241604	242281
211	242933	242274	242933
212	243416	242976	243416
213	243500	244531	243500
214	244480	246021	244480
215	246330	247811	246330
216	247831	249174	247870
217	249437	251038	249455
218	251325	252212	251325
219	253156	254007	253156
220	253974	254852	253974
221	255258	256094	255258
222	256640	257455	256640
223	257502	258239	257502
224	257869	257501	257869
225	259248	260897	259248
226	262753	261788	262753
227	263059	262757	263059
228	264375	263182	264375
229	265985	264747	265985
230	266637	266059	266637
231	267338	266538	267338
232	267922	267473	267922
233	269647	270771	269647
234	272777	273145	272777
235	273253	273636	273253
236	273705	273977	273705
237	276016	275717	276016
238	276439	276020	276418

ORF Nos	begin	end	potential start
239	276792	277253	276792
240	277318	277599	277318
241	278578	277877	278578
242	279258	278554	279258
243	280435	279533	280435
244	281547	280849	281547
245	281696	282325	281717
246	282459	284069	282459
247	284056	284517	284056
248	284606	285775	284606
249	285592	285987	285592
250	286179	286976	286179
251	287583	287002	287583
252	287951	287451	287951
253	288499	288816	288499
254	289674	288505	289674
255	288839	289213	288839
256	289970	290254	289970
257	291931	292803	291931
258	293258	292755	293258
259	293718	293272	293718
260	294630	293953	294630
261	296153	294636	296153
262	294817	295068	294817
263	296354	297862	296354
264	298415	297879	298415
265	298777	298253	298777
266	299572	298781	299572
267	300487	299633	300487
268	301586	300702	301568
269	302440	301571	302440
270	302838	302437	302838
271	303335	302745	303335
272	304394	303852	304394

ORF Nos	begin	end	potential start
273	304606	305223	304606
274	305394	306236	305394
275	306501	307439	306501
276	308033	307458	308033
277	308924	308037	308924
278	309485	310180	309485
279	310426	311214	310426
280	311597	311253	311504
281	312772	311780	312772
282	313425	312772	313425
283	313646	313377	313646
284	313937	314665	313937
285	315576	314755	315576
286	316157	315531	316157
287	318657	316156	318657
288	321042	318676	321042
289	321445	321098	321445
290	322309	321710	322309
291	323190	322366	323181
292	323843	323181	323843
293	324878	323856	324878
294	325340	326410	325340
295	326433	327836	326433
296	328465	327839	328465
297	329360	328857	329360
298	330907	329357	330907
299	332455	330956	332455
300	334536	332395	334536
301	336091	334877	336091
302	336103	337302	336103
303	338129	338830	338129
304	338965	339501	338965
305	339508	340143	339508
306	340247	342967	340247

ORF Nos	begin	end	potential start
307	343385	343810	343385
308	344171	343935	344171
309	345082	344330	345073
310	346005	345082	346005
311	346784	346437	346784
312	347029	346715	347029
313	347034	347723	347034
314	348075	350459	348075
315	350598	351071	350598
316	351075	352175	351096
317	353291	352230	353267
318	353442	354467	353442
319	354451	354933	354451
320	355000	355449	355000
321	355448	356743	355448
322	355953	355642	355953
323	359310	356827	359310
324	359120	359377	359120
325	359525	359908	359525
326	361290	359947	361290
327	363785	361362	363746
328	364496	363888	364496
329	364832	365290	364832
330	365304	365669	365304
331	366599	365667	366599
332	367291	369030	367291
333	369134	369808	369134
334	369917	370438	369917
335	370365	372647	370365
336	372557	373066	372557
337	373020	373442	373020
338	373467	374195	373467
339	374176	375099	374176
340	375676	375083	375676

ORF Nos	begin	end	potential start
341	376173	375634	376173
342	376564	377643	376564
343	377956	379773	377956
344	379781	380425	379805
345	380281	381000	380281
346	381008	381460	381008
347	381460	383037	381460
348	383257	383523	383257
349	383553	385304	383553
350	385397	386458	385400
351	387242	386514	387242
352	388764	387013	388764
353	390120	390932	390120
354	390919	391818	390961
355	392379	391885	392379
356	392582	392986	392582
357	392776	393684	392776
358	394151	394804	394151
359	394928	395308	394928
360	395259	395990	395259
361	397815	395953	397815
362	398850	397831	398850
363	400085	399099	400085
364	401245	400073	401236
365	401474	401136	401474
366	402199	401423	402199
367	403193	402186	403166
368	403650	404165	403650
369	404343	405914	404343
370	405984	407327	405984
371	407712	408806	407712
372	410439	409075	410439
373	411826	410954	411826
374	412482	414302	412482

ORF Nos	begin	end	potential start
375	415402	414407	415402
376	415848	415237	415848
377	417131	415866	417131
378	417258	417566	417258
379	418326	417454	418326
380	420057	418426	420057
381	420448	420720	420448
382	420980	421552	420980
383	421556	422029	421556
384	422461	422925	422461
385	423562	424320	423562
386	424250	424591	424250
387	424830	426047	424830
388	426240	427397	426240
389	428841	430703	428841
390	430694	431446	430694
391	431597	432100	431597
392	432165	432779	432165
393	433272	432832	433272
394	433925	433227	433922
395	436678	433934	436678
396	437176	438357	437176
397	440317	438518	440317
398	440001	440345	440001
399	441233	440517	441233
400	440719	441012	440719
401	442192	441230	442192
402	442888	442343	442888
403	442371	442961	442371
404	443578	443003	443578
405	444500	443526	444500
406	444842	444528	444842
407	445009	444743	445009
408	445718	445182	445718

ORF Nos	begin	end	potential start
409	445807	447804	445807
410	448738	447803	448738
411	449628	448618	449628
412	450298	450867	450298
413	450713	451207	450713
414	451211	452452	451211
415	452448	453659	452448
416	454843	453725	454843
417	455608	454865	455608
418	456243	457007	456243
419	457016	457708	457016
420	458368	457979	458368
421	459496	458372	459496
422	459493	460194	459493
423	461446	460355	461446
424	462298	461450	462298
425	462444	463349	462444
426	464241	463342	464241
427	464574	465065	464574
428	465129	465611	465129
429	465571	466317	465571
430	466317	467093	466317
431	466999	467502	466999
432	469691	467715	469691
433	470691	469660	470691
434	472010	470709	472010
435	471545	471799	471545
436	472359	472045	472359
437	473523	472732	473523
438	474889	473441	474889
439	477323	475365	477323
440	478496	477597	478496
441	478722	479273	478722
442	479277	479705	479277

ORF Nos	begin	end	potential start
443	480050	481450	480050
444	481469	482053	481469
445	482600	482025	482600
446	482654	484204	482654
447	484211	485170	484211
448	485170	485838	485170
449	485813	486580	485813
450	486976	486638	486976
451	489071	487764	489071
452	489341	489090	489341
453	489958	489152	489958
454	490549	489962	490549
455	491163	490522	491163
456	491396	491112	491396
457	492121	491390	492121
458	492304	494838	492304
459	495943	494822	495943
460	496011	496565	496170
461	496569	497228	496569
462	497358	497834	497358
463	497770	498327	497770
464	499209	499589	499209
465	499520	499792	499520
466	500774	504169	500774
467	504139	504600	504139
468	504865	506877	504865
469	506790	507671	506790
470	507718	510507	507718
471	508325	507912	508325
472	510660	513440	510660
473	514965	513787	514920
474	517347	515419	517347
475	517058	517363	517058
476	517798	517277	517798

ORF Nos	begin	end	potential start
477	518200	517847	518200
478	518300	521146	518363
479	521392	522948	521407
480	523244	524809	523322
481	524379	524125	524379
482	524649	526238	524649
483	526265	527104	526268
484	526947	526702	526947
485	526975	528450	526975
486	528408	529199	528408
487	530612	529542	530612
488	531656	530616	531656
489	533974	532067	533974
490	536432	534324	536432
491	537150	536707	537150
492	537928	537080	537928
493	538438	537932	538438
494	538737	538333	538737
495	539594	539127	539594
496	541215	539590	541215
497	542571	541282	542571
498	543014	542457	543014
499	543369	542962	543369
500	543809	546628	543815
501	546619	549525	546619
502	547293	546994	547293
503	549699	550523	549699
504	550490	551551	550490
505	551448	552623	551448
506	552652	555117	552652
507	555029	555493	555029
508	558006	555673	558006
509	559694	558162	559694
510	558208	558573	558208

ORF Nos	begin	end	potential start
511	561692	559899	561692
512	561412	561708	561412
513	563942	561777	563942
514	564969	563950	564969
515	566204	564936	566198
516	567717	566302	567717
517	568526	567708	568526
518	569467	568742	569467
519	571065	569431	571065
520	571828	571118	571783
521	572202	573308	572202
522	573146	575056	573146
523	575023	575916	575023
524	577891	576497	577891
525	578914	578204	578914
526	579924	578857	579924
527	580187	579858	580187
528	580017	580406	580017
529	581086	580187	581086
530	581367	581828	581367
531	581678	582367	581678
532	582361	583428	582361
533	584690	583431	584690
534	585237	584950	585237
535	585626	586888	585626
536	586846	587907	586888
537	589049	588180	589049
538	590500	589301	590455
539	590755	592458	590755
540	592526	592903	592526
541	592836	593747	592836
542	593747	594298	593747
543	594331	595947	594331
544	595905	596309	595905

ORF Nos	begin	end	potential start
545	596514	597215	596514
546	597184	597957	597184
547	597755	598612	597755
548	598602	599204	598602
549	599373	599939	599373
550	600903	602072	600903
551	602240	602587	602240
552	602637	603272	602637
553	603142	604512	603142
554	604627	605853	604627
555	605790	606620	605790
556	606571	607281	606571
557	609004	607355	609004
558	610906	609932	610906
559	611786	611004	611786
560	612333	611746	612333
561	613897	612341	613897
562	615179	616279	615179
563	616610	617383	616610
564	618796	617810	618796
565	620004	618826	620004
566	619649	619918	619649
567	621265	620021	621265
568	622359	621265	622359
569	623420	622560	623420
570	624297	623335	624297
571	624773	624174	624773
572	625029	625484	625029
573	625488	625883	625488
574	625892	626395	625892
575	626444	627790	626444
576	627912	628607	627930
577	628774	629697	628774
578	629660	631639	629660

ORF Nos	begin	end	potential start
579	631725	633551	631725
580	633520	636957	633520
581	637232	638098	637232
582	640648	639593	640648
583	640979	640728	640979
584	641327	641007	641327
585	641687	642283	641687
586	643023	642286	643023
587	643330	643076	643330
588	643704	643351	643704
589	645628	643676	645628
590	645783	645538	645756
591	646269	645793	646269
592	646751	646314	646751
593	647848	647045	647848
594	648393	650336	648393
595	651016	650420	651007
596	652956	651289	652956
597	653395	653126	653395
598	655740	654193	655740
599	656508	655966	656508
600	658140	657022	658140
601	660216	658525	660216
602	663238	660248	663238
603	664461	663157	664452
604	665735	664635	665735
605	666212	666994	666212
606	666998	667921	666998
607	667909	668568	667909
608	668502	669203	668502
609	669154	670893	669175
610	672226	670853	672226
611	671137	671424	671137
612	672453	673001	672453

ORF Nos	begin	end	potential start
613	673072	674721	673072
614	674549	674262	674549
615	675518	674796	675518
616	676083	675499	676083
617	676630	676067	676630
618	677016	676600	677016
619	677647	677015	677647
620	677990	678259	677990
621	679444	680097	679444
622	680097	680897	680097
623	681637	680849	681637
624	681409	682281	681409
625	682453	682821	682453
626	682763	683902	682763
627	684616	683969	684616
628	685169	684534	685169
629	685986	685117	685986
630	686278	687288	686278
631	687483	688151	687483
632	688740	689501	688740
633	690242	689622	690242
634	690470	691126	690470
635	692600	691497	692600
636	692674	695064	692674
637	695049	696032	695064
638	697964	696585	697964
639	699803	698274	699803
640	701926	699788	701926
641	703196	702567	703196
642	704221	703208	704221
643	704240	705289	704240
644	706070	705300	706070
645	706841	706254	706838
646	707596	706811	707596

ORF Nos	begin	end	potential start
647	708666	707677	708666
648	709793	709119	709793
649	711523	710132	711523
650	712236	711523	712236
651	714734	712125	714734
652	715759	714761	715759
653	717538	715886	717538
654	719113	720243	719113
655	720590	722422	720590
656	722406	723056	722406
657	723551	723120	723551
658	724246	723626	724246
659	724754	724251	724754
660	725868	724900	725868
661	727115	726270	727115
662	728126	727119	728126
663	728594	728208	728594
664	729614	728604	729614
665	729778	729533	729778
666	730149	729751	730149
667	730539	730174	730539
668	731983	730598	731983
669	732427	731996	732427
670	732917	732423	732917
671	733598	733320	733598
672	733869	733492	733869
673	734298	733900	734298
674	734858	734319	734858
675	735195	734863	735195
676	735578	735342	735578
677	735861	735604	735861
678	736492	736079	736492
679	737192	736524	737192
680	737555	737211	737555

ORF Nos	begin	end	potential start
681	738688	737837	738688
682	739048	738713	739048
683	739736	739065	739736
684	740477	739773	740477
685	740659	740958	740659
686	741722	740721	741722
687	742789	741827	742789
688	743618	742782	743618
689	744092	743634	744092
690	744604	744107	744604
691	744953	744498	744953
692	746608	744986	746608
693	747085	746621	747085
694	747974	747219	747974
695	748594	748169	748594
696	749145	748573	749145
697	749652	749957	749652
698	750446	749979	750446
699	751219	750446	751219
700	753042	751291	753042
701	754309	753020	754309
702	755120	756175	755120
703	756120	756485	756120
704	756499	760227	756499
705	761217	760297	761178
706	761297	761809	761330
707	761782	762282	761782
708	762260	762895	762299
709	762867	763316	762867
710	763780	763325	763780
711	763861	765168	763861
712	766809	765697	766809
713	768051	766888	768051
714	768566	768321	768566

ORF Nos	begin	end	potential start
715	769342	768551	769342
716	770532	769378	770532
717	771451	770804	771451
718	773058	771847	773058
719	773094	773456	773094
720	774376	773093	774376
721	775123	774380	775123
722	775398	774916	775398
723	775046	776077	775046
724	776070	777041	776070
725	777964	777536	777964
726	778176	777904	778176
727	778621	779334	778684
728	781173	780307	781173
729	781526	781116	781526
730	782784	781555	782784
731	783572	782805	783572
732	785032	783581	785032
733	786412	785360	786412
734	788429	786450	788429
735	788944	788528	788944
736	789758	788901	789758
737	790332	791504	790338
738	791846	792721	791846
739	792724	793569	792724
740	793580	794323	793580
741	794304	794843	794304
742	795217	795732	795217
743	795722	796795	795722
744	798735	797053	798735
745	799823	798681	799823
746	799297	799578	799297
747	801313	799808	801313
748	802453	801332	802453

ORF Nos	begin	end	potential start
749	803299	802457	803299
750	803811	803290	803811
751	805151	803826	805151
752	805860	805156	805860
753	806604	806332	806604
754	806913	806608	806913
755	808222	806903	808222
756	808751	808146	808751
757	809437	808673	809437
758	809939	809454	809939
759	811235	810213	811235
760	811779	813056	811779
761	812890	812516	812890
762	812954	813583	812954
763	813587	815023	813587
764	815420	815746	815420
765	816036	817010	816036
766	817111	817356	817111
767	817791	818609	817797
768	818609	819094	818609
769	819104	819823	819104
770	820722	819826	820722
771	822313	821000	822313
772	823503	822238	823503
773	823678	825612	823678
774	825461	826312	825461
775	827280	826645	827280
776	828604	827171	828604
777	830026	828713	830026
778	831047	830085	831047
779	831725	831051	831725
780	832220	833098	832220
781	833851	833396	833851
782	834068	835039	834068

ORF Nos	begin	end	potential start
783	835792	835127	835792
784	837624	836116	837624
785	838951	840882	838951
786	840869	842185	840869
787	841989	843455	841989
788	843242	844021	843242
789	845018	843987	844997
790	846174	844990	846174
791	848509	846311	848509
792	848568	849014	848568
793	849082	850488	849088
794	851512	850574	851512
795	852064	852447	852064
796	852398	853690	852398
797	855118	854243	855118
798	855751	855128	855751
799	856551	855829	856551
800	856730	858556	856730
801	858717	859601	858717
802	859591	860205	859591
803	861132	860284	861132
804	861426	861163	861426
805	861701	862921	861701
806	863026	864798	863026
807	864831	865256	864831
808	865226	866581	865226
809	866562	867119	866562
810	867025	867816	867025
811	867820	868497	867820
812	869743	868661	869743
813	870633	870094	870633
814	871929	870646	871929
815	872538	872086	872538
816	873908	872517	873908

ORF Nos	begin	end	potential start
817	874281	874670	874281
818	874582	875286	874582
819	877857	875377	877857
820	878446	879255	878446
821	880635	879268	880635
822	882524	880593	882524
823	882612	883319	882612
824	884155	883538	884155
825	884340	885611	884343
826	885722	887302	885722
827	887587	888153	887587
828	888627	888220	888627
829	889330	888716	889330
830	889898	889323	889898
831	891190	889898	891190
832	891828	891247	891828
833	892421	892017	892421
834	893116	892421	893116
835	892521	892925	892521
836	893392	895419	893392
837	895745	896527	895745
838	896668	897558	896668
839	897565	899442	897565
840	899420	900229	899420
841	903230	900237	903230
842	905081	903234	905081
843	906931	905045	906931
844	907248	907832	907299
845	907784	908128	907784
846	908132	908677	908132
847	908589	909320	908589
848	909405	911465	909405
849	911677	912360	911725
850	912303	912821	912303

ORF Nos	begin	end	potential start
851	912937	913983	912937
852	915128	914067	915128
853	916658	915303	916658
854	915627	915376	915627
855	917707	916853	917707
856	918837	917722	918837
857	919868	918837	919868
858	920434	919880	920434
859	921187	920438	921187
860	921959	921195	921959
861	923773	921995	923773
862	922146	922415	922146
863	923943	923674	923943
864	924077	925006	924077
865	925436	925083	925436
866	926524	925349	926524
867	927920	926433	927920
868	928319	927951	928319
869	928963	928334	928963
870	929248	930987	929248
871	930995	932059	930995
872	932121	933515	932175
873	932881	932513	932881
874	933485	935746	933485
875	935724	937082	935724
876	937229	938410	937229
877	938281	938805	938281
878	938809	939255	938824
879	939165	939782	939165
880	939760	940791	939790
881	940822	941106	940822
882	940977	941351	940977
883	942537	941623	942429
884	942784	942500	942763

ORF Nos	begin	end	potential start
885	943149	942799	943149
886	943799	943029	943799
887	944055	943732	944055
888	944413	943994	944404
889	945395	944556	945395
890	945853	945389	945853
891	946392	945751	946392
892	947410	948081	947431
893	949871	948915	949871
894	951058	949868	951058
895	951249	950959	951249
896	951664	952134	951664
897	952674	952165	952674
898	953491	952589	953491
899	955324	953495	955324
900	955823	955281	955823
901	957082	955847	957082
902	957902	957270	957902
903	959231	957906	959231
904	959376	960284	959376
905	960266	961669	960347
906	961856	964765	961856
907	966855	965395	966855
908	968204	966975	968204
909	968791	968237	968791
910	969498	968731	969498
911	969858	969511	969858
912	970118	969762	970118
913	970593	970300	970593
914	971261	970542	971261
915	971680	971123	971680
916	971876	975100	971876
917	975419	976516	975419
918	976584	978320	976584

ORF Nos	begin	end	potential start
919	977680	977231	977680
920	978399	980738	978399
921	980756	981928	980756
922	982974	981931	982962
923	984120	983119	984120
924	985502	984120	985502
925	987180	985882	987180
926	987172	987444	987172
927	989846	989049	989846
928	991048	989846	991048
929	991638	990955	991638
930	991794	992498	991794
931	993619	993041	993619
932	993530	994792	993548
933	995970	994795	995970
934	996857	995739	996857
935	997603	996782	997603
936	998969	997572	998969
937	998896	1000023	998896
938	1000087	1001340	1000087
939	1001357	1001818	1001357
940	1003288	1001873	1003288
941	1003487	1004146	1003496
942	1004485	1005639	1004689
943	1005643	1005972	1005643
944	1006784	1006116	1006784
945	1007563	1006769	1007563
946	1009226	1007568	1009226
947	1009989	1009336	1009989
948	1015852	1016337	1015852
949	1016561	1016181	1016561
950	1016297	1017532	1016297
951	1016802	1016452	1016802
952	1018993	1017701	1018993

ORF Nos	begin	end	potential start
953	1019454	1019137	1019454
954	1020764	1019562	1020764
955	1021405	1021037	1021405
956	1021821	1024286	1021821
957	1024697	1024248	1024697
958	1025569	1024508	1025551
959	1026969	1025590	1026969
960	1027789	1026947	1027789
961	1031199	1027945	1031199
962	1031717	1031172	1031717
963	1033057	1031612	1033057
964	1033425	1033039	1033425
965	1033784	1033200	1033784
966	1033963	1036038	1033963
967	1036945	1036010	1036945
968	1037110	1037679	1037110
969	1037696	1037944	1037696
970	1038916	1037975	1038916
971	1040582	1039026	1040582
972	1040997	1042337	1040997
973	1042357	1043403	1042357
974	1043367	1044623	1043367
975	1044607	1045362	1044607
976	1045384	1046538	1045384
977	1046447	1047517	1046447
978	1047521	1049956	1047521
979	1050611	1050036	1050611
980	1050925	1050566	1050925
981	1051728	1051090	1051728
982	1051743	1052063	1051743
983	1052101	1053126	1052101
984	1054201	1053107	1054201
985	1054242	1055555	1054242
986	1055483	1055908	1055483

ORF Nos	begin	end	potential start
987	1056609	1056965	1056609
988	1056961	1058232	1056985
989	1058238	1058687	1058238
990	1059371	1058727	1059371
991	1059526	1060578	1059526
992	1061553	1060579	1061553
993	1061674	1062411	1061674
994	1062377	1064077	1062377
995	1064116	1065243	1064116
996	1067451	1065178	1067451
997	1068065	1067376	1068065
998	1068209	1068706	1068230
999	1069958	1068819	1069958
1000	1071163	1070033	1071163
1001	1072438	1071332	1072438
1002	1072997	1073476	1072997
1003	1074239	1075864	1074239
1004	1076790	1075867	1076790
1005	1077268	1076573	1077268
1006	1077999	1078724	1077999
1007	1079088	1078672	1079088
1008	1079642	1079944	1079642
1009	1080501	1079995	1080468
1010	1080775	1081341	1080775
1011	1083158	1081350	1083158
1012	1084677	1083235	1084677
1013	1085648	1084632	1085648
1014	1086117	1086737	1086117
1015	1086692	1087897	1086692
1016	1088646	1089005	1088646
1017	1089146	1089805	1089146
1018	1092931	1089890	1092931
1019	1093179	1092889	1093179
1020	1093584	1094204	1093584

ORF Nos	begin	end	potential start
1021	1095619	1094192	1095619
1022	1096074	1096628	1096074
1023	1096633	1097082	1096633
1024	1097266	1097601	1097266
1025	1097622	1097867	1097622
1026	1097886	1098392	1097886
1027	1099521	1099279	1099521
1028	1099689	1101053	1099704
1029	1102192	1101107	1102192
1030	1104950	1102116	1104950
1031	1106508	1104946	1106508
1032	1106722	1107249	1106722
1033	1107463	1108101	1107463
1034	1108041	1108421	1108041
1035	1108520	1113370	1108520
1036	1114958	1113447	1114958
1037	1116915	1115071	1116915
1038	1118183	1116894	1118183
1039	1118846	1120030	1118846
1040	1120040	1120522	1120040
1041	1120510	1121430	1120510
1042	1121321	1121866	1121321
1043	1122123	1122899	1122123
1044	1124842	1125564	1124842
1045	1126526	1125579	1126526
1046	1126519	1127676	1126519
1047	1127672	1128571	1127672
1048	1130230	1131336	1130230
1049	1131480	1132553	1131480
1050	1132830	1133843	1132830
1051	1134121	1134855	1134121
1052	1134642	1135592	1134642
1053	1135964	1135653	1135964
1054	1137132	1135954	1137132

ORF Nos	begin	end	potential start
1055	1137169	1140102	1137169
1056	1141365	1140112	1141344
1057	1142150	1141356	1142150
1058	1142520	1145660	1142520
1059	1145627	1146721	1145627
1060	1146862	1147545	1146862
1061	1147666	1148190	1147666
1062	1148514	1148224	1148514
1063	1149136	1148348	1149136
1064	1149702	1149166	1149702
1065	1150031	1150591	1150031
1066	1150785	1151147	1150785
1067	1151165	1152181	1151165
1068	1152522	1154591	1152522
1069	1155666	1154566	1155666
1070	1156743	1155670	1156740
1071	1156859	1157815	1156859
1072	1157982	1160735	1157982
1073	1162620	1160917	1162620
1074	1162970	1162590	1162970
1075	1163532	1164020	1163532
1076	1163995	1164294	1163995
1077	1165569	1165030	1165569
1078	1166108	1165566	1166108
1079	1166644	1166141	1166644
1080	1167055	1168374	1167055
1081	1169218	1168337	1169218
1082	1169823	1169218	1169823
1083	1171324	1170572	1171324
1084	1172085	1171177	1172085
1085	1172394	1173773	1172394
1086	1175209	1173881	1175209
1087	1175555	1175127	1175360
1088	1175778	1177043	1175778

ORF Nos	begin	end	potential start
1089	1177177	1179048	1177177
1090	1179156	1180085	1179156
1091	1180045	1180779	1180045
1092	1181942	1180788	1181942
1093	1182296	1181961	1182296
1094	1183844	1182300	1183844
1095	1184420	1183848	1184420
1096	1185382	1184366	1185382
1097	1185858	1185226	1185858
1098	1186164	1186481	1186185
1099	1187386	1186484	1187386
1100	1187370	1189028	1187370
1101	1189321	1190889	1189321
1102	1191142	1192146	1191142
1103	1191974	1191729	1191974
1104	1193815	1192991	1193815
1105	1195702	1194248	1195702
1106	1196303	1195716	1196303
1107	1196831	1196337	1196831
1108	1197807	1196746	1197651
1109	1198740	1197883	1198668
1110	1200232	1198721	1200232
1111	1201286	1200135	1201286
1112	1202386	1201259	1202350
1113	1202901	1202350	1202901
1114	1204162	1202816	1204162
1115	1203177	1203464	1203177
1116	1205028	1204180	1205028
1117	1206392	1204878	1206392
1118	1206742	1206086	1206742
1119	1207872	1206724	1207872
1120	1208852	1207851	1208852
1121	1210518	1209742	1210518
1122	1210703	1211494	1210703

ORF Nos	begin	end	potential start
1123	1211870	1212754	1211870
1124	1212742	1214064	1212742
1125	1214046	1214858	1214046
1126	1215551	1216318	1215551
1127	1216493	1216849	1216493
1128	1217183	1219612	1217183
1129	1220068	1219673	1220068
1130	1219710	1220669	1219710
1131	1220630	1221376	1220630
1132	1221645	1223681	1221645
1133	1223894	1224988	1223900
1134	1225000	1225830	1225000
1135	1227810	1225879	1227810
1136	1226528	1226908	1226528
1137	1229972	1228311	1229972
1138	47569	47018	47569
1139	49980	49117	49980
1140	53356	52898	53356
1141	54477	54884	54477
1142	63753	63998	63753
1143	77164	77487	77164
1144	79724	79302	79724
1145	88721	88951	88721
1146	94067	94429	94067
1147	122832	123341	122832
1148	147536	147234	147536
1149	158990	159346	158990
1150	168470	168979	168470
1151	169183	169452	169204
1152	171785	171504	171785
1153	172518	171775	172518
1154	193599	194045	193599
1155	195704	196075	195704
1156	210687	210145	210684

ORF Nos	begin	end	potential start
1157	211100	210708	211100
1158	215420	215088	215420
1159	217914	218246	217914
1160	218925	218701	218925
1161	223785	223525	223785
1162	224271	223999	224271
1163	228691	228407	228691
1164	235050	235334	235050
1165	252308	253021	252308
1166	258280	258912	258280
1167	261325	261567	261325
1168	268195	268878	268195
1169	269447	268881	269447
1170	271263	271538	271263
1171	271957	272346	271957
1172	274176	274550	274176
1173	275736	275314	275736
1174	276490	276927	276490
1175	277577	277861	277577
1176	288163	287909	288163
1177	290130	289789	290130
1178	290989	291225	290989
1179	291372	291860	291372
1180	311239	311622	311239
1181	328665	328384	328665
1182	337348	338289	337348
1183	364764	364369	364764
1184	389623	390135	389623
1185	393729	394343	393729
1186	407379	407621	407379
1187	410944	410708	410944
1188	427632	427988	427632
1189	428172	428486	428172
1190	436761	437246	436761

ORF Nos	begin	end	potential start
1191	460911	461159	460911
1192	477597	477313	477597
1193	487303	487001	487303
1194	487764	487534	487764
1195	498502	499017	498502
1196	499795	500466	499795
1197	571928	572344	571928
1198	572367	572131	572367
1199	588184	587915	588184
1200	600587	600907	600587
1201	609731	608895	609731
1202	614039	614755	614039
1203	614823	615152	614823
1204	638244	638831	638244
1205	638819	639094	638819
1206	639073	639636	639073
1207	647901	648236	647901
1208	678510	679469	678510
1209	688178	688732	688178
1210	696045	696563	696045
1211	708998	708588	708998
1212	709808	710089	709808
1213	718240	717737	718240
1214	737828	737565	737828
1215	779502	780257	779502
1216	806310	805864	806310
1217	820931	820707	820931
1218	837696	839096	837696
1219	883307	883549	883307
1220	892010	891726	892010
1221	893277	893564	893277
1222	936998	937225	936998
1223	946865	947419	946865
1224	975187	975411	975187

ORF Nos	begin	end	potential start
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1227	988215	987733	988215
1228	988754	988530	988754
1229	992542	992841	992542
1230	992759	993067	992759
1231	1004247	1004528	1004268
1232	1015013	1014294	1015013
1233	1056147	1056545	1056147
1234	1077682	1078035	1077682
1235	1088121	1088381	1088121
1236	1098430	1098852	1098430
1237	1098798	1099319	1098798
1238	1123198	1123515	1123198
1239	1123606	1124256	1123606
1240	1124453	1124797	1124453
1241	1129253	1129567	1129253
1242	1164947	1164474	1164947
1243	1170457	1170053	1170457
1244	1172342	1171863	1172342
1245	1192155	1192835	1192155
1246	1192759	1192992	1192759
1247	1193861	1194142	1193861
1248	1194036	1193779	1194036
1249	1209748	1209053	1209748
1250	1215111	1215419	1215111
1251	1216302	1216538	1216302
1252	1228072	1227818	1228072
1253	1228304	1228080	1228304
1254	26599	26222	26599
1255	27609	27367	27609
1256	67206	66967	67197
1257	70612	70352	70588
1258	132703	132945	132703

ORF Nos	begin	end	potential start
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1260	208576	208349	208576
1261	209156	208929	209156
1262	209263	209024	209263
1263	210304	210639	210304
1264	299009	299452	299030
1265	352106	351717	352061
1266	420182	419949	420170
1267	553602	553381	553602
1268	556538	556807	556538
1269	594348	593797	594342
1270	595169	594876	595160
1271	662148	662381	662160
1272	706528	706893	706528
1273	803315	803650	803339
1274	849551	849306	849551
1275	913676	913275	913676
1276	927087	926836	927087
1277	930587	930360	930587
1278	986531	986764	986531
1279	996229	996486	996229
1280	1000373	1000002	1000334
1281	1010291	1010037	1010273
1282	1011128	1010793	1011128
1283	1012924	1012694	1012924
1284	1028659	1028913	1028659
1285	1086481	1086762	1086481
1286	1118658	1118879	1118658
1287	1170098	1169835	1170098
1288	1180828	1181184	1180828
1289	1182658	1183035	1182658
1290	1195076	1194795	1195055
1291	1195890	1196183	1195890
1292	189042	188809	189030

ORF Nos	begin	end	potential start
1293	691250	691567	691250
1294	914544	914780	914556
1295	928525	928833	928579
1296	1040685	1040948	1040712
1297	377646	378068	377646

Table 4

<i>SEQ ID NO (ORF)</i>	<i>Fp</i>	<i>Fd</i>	<i>Bp</i>	<i>Bd</i>
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5	1298	1299	3802	3803
6	1300	1301	3804	3805
7	1302	1303	3806	3807
8	1304	1305	3808	3809
9	1306	1307	3810	3811
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37	1362	1363	3866	3867
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39	1366	1367	3870	3871
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41	1370	1371	3874	3875
42	1374	1375	3878	3879
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44	1380	1381	3884	3885
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91	1488	1489	3992	3993
92	1490	1491	3994	3995
93	1492	1493	3996	3997
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96	1498	1499	4002	4003
97	1500	1501	4004	4005
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99	1504	1505	4008	4009
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143	1598	1599	4102	4103
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394	2180	2181	4684	4685
395	2182	2183	4686	4687
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425	2246	2247	4750	4751
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TABLE 5

<i>SEQ ID</i>	<i>or.</i>	<i>5'position</i>	<i>SEQ ID</i>	<i>or.</i>	<i>5'position</i>	<i>SEQ ID</i>	<i>or.</i>	<i>5'position</i>
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1297	F	1229711	3017	F	833938	4737	B	459836
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2866	F	765438	4586	B	387508	6306	F	70130
2867	F	763525	4587	B	389369	6307	F	68200
2868	F	766664	4588	B	388984	6308	F	132477
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2870	F	768045	4590	B	390387	6310	F	177854
2871	F	766196	4591	B	392260	6311	F	175906
2872	F	768329	4592	B	391202	6312	F	208127
2873	F	766429	4593	B	393055	6313	F	206180
2874	F	769107	4594	B	392044	6314	F	208688
2875	F	767244	4595	B	393959	6315	F	206807
2876	F	770507	4596	B	392615	6316	F	208732
2877	F	768633	4597	B	394499	6317	F	206877
2878	F	771618	4598	B	393218	6318	F	210051
2879	F	769725	4599	B	395123	6319	F	208141
2880	F	772865	4600	B	393909	6320	F	298801
2881	F	770975	4601	B	395807	6321	F	296907
2882	F	772865	4602	B	394566	6322	F	351495
2883	F	770970	4603	B	396498	6323	F	349572
2884	F	774810	4604	B	395027	6324	F	419727
2885	F	772927	4605	B	396931	6325	F	417822
2886	F	774131	4606	B	395531	6326	F	553133
2887	F	772232	4607	B	397467	6327	F	551247
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2889	F	772782	4609	B	398132	6329	F	554410
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2989	F	818555
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2991	F	818878
2992	F	821982
2993	F	820080
2994	F	823403
2995	F	821559
2996	F	825235
2997	F	823320
2998	F	826405
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3000	F	826945
3001	F	825046
3002	F	828489
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TABLE 6

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790332G10#	6458	6654	A
790271B6#	6459	6655	A
790253H6#	6460	6656	A
790214E8#	6461	6657	A
790352D2#	6462	6658	A
790373F2#	6463	6659	A
790424A7#	6464	6660	A
790282F3#	6465	6661	A
790272F5#	6466	6662	A
790424F6#	6467	6663	A
890033H11#	6468	6664	A
790264H10#	6469	6665	A
790293A5#	6470	6666	A
790391E8#	6471	6667	A
890022B8#	6472	6668	A
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790251B9#	6474	6670	A
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790323F3#	6476	6672	B
790231G2#	6477	6673	B
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790394F2#	6481	6677	B
790222G5#	6482	6678	B
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790283F6#	6484	6680	B

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790323B12#	6502	6698	B
790263E5#	6503	6699	B
790223C8#	6504	6700	B
790231H2#	6505	6701	B
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790222E8#	6508	6704	B
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790331F3#	6552	6748	B
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790024H5#	6579	6775	B
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790293B2#	6597	6793	B
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790381C6#	6603	6799	B
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790421G8#	6605	6801	B
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790254A4#	6616	6812	C
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790394D2#	6620	6816	C
790214D2#	6621	6817	C
790014A4#	6622	6818	C
790324H4#	6623	6819	C
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790324A6#	6625	6821	C
790424A12#	6626	6822	C
790044G8#	6627	6823	C
790323C6#	6628	6824	C
790312G4#	6629	6825	C
790053C11#	6630	6826	C
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TABLE 7

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6457	B	32264
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6459	B	33582
6460	B	33519
6461	B	34836
6462	B	35795
6463	B	35548
6464	B	35825
6465	B	37239
6466	B	36761
6467	B	37045
6468	B	36761
6469	B	37958
6470	B	38636
6471	B	39813
6472	B	41140
6473	B	40575
6474	B	40526
6475	B	501495
6476	B	502410
6477	B	502586
6478	B	503233
6479	B	503749
6480	B	504488
6481	B	504206
6482	B	504310
6483	B	505455
6484	B	505877

SEQ ID	or.	5'position
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6584	B	547184
6585	B	547684
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6587	B	548946
6588	B	549071
6589	B	550054
6590	B	549989
6591	B	550426
6592	B	550055
6593	B	550132
6594	B	550132
6595	B	551400
6596	B	551572
6597	B	551468
6598	B	550849
6599	B	552137
6600	B	552325
6601	B	552583
6602	B	553033
6603	B	553629
6604	B	553960
6605	B	553914
6606	B	554354
6607	B	555783
6608	B	555687
6609	B	556441
6610	B	557054
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6612	B	557292
6613	B	557050
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6615	B	817104

SEQ ID	or.	5'position
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6721	F	522328
6722	F	522567
6723	F	522915
6724	F	523300
6725	F	523791
6726	F	523959
6727	F	524369
6728	F	524801
6729	F	525085
6730	F	525241
6731	F	525738
6732	F	526263
6733	F	526628
6734	F	526779
6735	F	527004
6736	F	527230
6737	F	527381
6738	F	527545
6739	F	527691
6740	F	527932
6741	F	527995
6742	F	528167
6743	F	528610
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WHAT IS CLAIMED IS:

- 1- An isolated polynucleotide having a nucleotide sequence of a *Chlamydia pneumoniae* genome, comprising
- 5 (a) the a nucleotide sequence of SEQ ID No. 1;
(b) the nucleotide sequence contained within the *Chlamydia pneumoniae* genomic DNA in ATCC Deposit No. _____;
(c) the nucleotide sequence contained in a clone insert in ATCC Deposit No. _____;
10 (d) a nucleotide sequence exhibiting at least 99.9% identity with the sequence of SEQ ID No. 1; or
(e) a nucleotide sequence exhibiting at least 80% homology to SEQ ID No. 1.
- 15 2- An isolated polynucleotide which hybridizes to SEQ ID No. 1 or to the *Chlamydia pneumoniae* genomic DNA contained in ATCC deposit No. _____ or to a clone insert in ATCC Deposit No. _____ under conditions of high stringency.
- 3- An isolated polynucleotide which hybridizes to SEQ ID No. 1 or to the *Chlamydia*
20 *pneumoniae* genomic DNA contained in ATCC deposit No. _____ under conditions of intermediate stringency.
- 4- An isolated polynucleotide having a nucleotide sequence of an open reading frame (ORF) of a *Chlamydia pneumoniae* genome, comprising:
- 25 (a) a nucleotide sequence chosen from one of ORF2 to ORF 1297;
(b) a nucleotide sequence exhibiting at least 99.9% identity with one of ORF2 to ORF 1297; or
(c) a nucleotide sequence exhibiting at least 80% homology to one of ORF2 to ORF 1297.
- 30 5- An isolated polynucleotide which hybridizes to one of ORF2 to ORF 1297 under conditions of high stringency.
- 6- An isolated polynucleotide which hybridizes to one of ORF2 to ORF 1297 under
35 conditions of intermediate stringency.
- 7- The polynucleotide of Claims 2, 3, 4, 5, or 6 which encodes the following polypeptides or fragments thereof:
- 40 (a) a *Chlamydia pneumoniae* transmembrane polypeptide having between 1 and 3 transmembrane domains;

- 5 (b) a *Chlamydia pneumoniae* transmembrane polypeptide having between 4 and 6 transmembrane domains;
- (c) a *Chlamydia pneumoniae* transmembrane polypeptide having at least 7 transmembrane domains;
- (d) a *Chlamydia pneumoniae* polypeptide involved in intermediate metabolism of sugars and/or cofactors;
- (e) a *Chlamydia pneumoniae* polypeptide involved in intermediate metabolism of nucleotides or nucleic acids;
- 10 (f) a *Chlamydia pneumoniae* polypeptide involved in metabolism of amino acids or polypeptides;
- (g) a *Chlamydia pneumoniae* polypeptide having involved in metabolism of fatty acids;
- (h) a *Chlamydia pneumoniae* polypeptide involved in the synthesis of the cell wall;
- 15 (i) a *Chlamydia pneumoniae* polypeptide involved in transcription, translation, and/or maturation process;
- (j) a *Chlamydia pneumoniae* transport polypeptide;
- (k) a *Chlamydia pneumoniae* polypeptide involved in the virulence process;
- 20 (l) a *Chlamydia pneumoniae* polypeptide involved in the secretory system and/or which is secreted;
- (m) a *Chlamydia pneumoniae* polypeptide of the cellular envelope or outer cellular envelope of *Chlamydia pneumoniae*.
- (n) a *Chlamydia pneumoniae* surface exposed polypeptide;
- 25 (o) a *Chlamydia pneumoniae* lipoprotein;
- (p) a *Chlamydia pneumoniae* polypeptide involved in lipopolysaccharide biosynthesis;
- (q) a *Chlamydia pneumoniae* KDO-related polypeptide;
- (r) a *Chlamydia pneumoniae* phosphomannomutase-related polypeptide;
- 30 (s) a *Chlamydia pneumoniae* lipid A component-related polypeptide;
- (t) a *Chlamydia pneumoniae* phosphoglucomutase-related polypeptide;
- 35 (u) a *Chlamydia pneumoniae* polypeptide that contains an RGD sequence;
- (v) a *Chlamydia pneumoniae* Type III secreted polypeptide;
- (w) a *Chlamydia pneumoniae* cell wall anchored surface polypeptide; or

- (x) a *Chlamydia pneumoniae* polypeptide that is not found in *Chlamydia trachomatis*.

8- A polynucleotide encoding a fusion protein, comprising one of ORF2 to ORF1297 of Claim 4, 5, or 6 ligated in frame to a polynucleotide encoding a heterologous polypeptide.

9- A recombinant vector that contains the polynucleotide of Claim 1, 2, 3, 4, 5 or 6.

10- A recombinant vector that contains the polynucleotide of Claim 8.

10

11- A recombinant vector that contains the polynucleotide of Claim 4, 5 or 6, operatively associated with a regulatory sequence that controls gene expression.

12- A recombinant vector that contains the polynucleotide of Claim 8 operatively associated with a regulatory sequence that controls gene expression.

15

13- A genetically engineered host cell that contains the polynucleotide of Claim 1, 2, 3, 4, 5 or 6.

20 14- A genetically engineered host cell that contains the polynucleotide of Claim 8.

15- A genetically engineered host cell that contains the polynucleotide of Claim 4, 5 or 6 operatively associated with a regulatory sequence that controls gene expression in the host cell.

25

16- A genetically engineered host cell that contains the polynucleotide of Claim 8 operatively associated with a regulatory sequence that controls gene expression in the host cell.

17- A method for producing a polypeptide, comprising:

30

- (a) culturing the genetically engineered host cell of Claim 15 under conditions suitable to produce the polypeptide encoded by the polynucleotide; and
- (b) recovering the polypeptide from the culture.

35 18- A method for producing a fusion protein, comprising:

- (a) culturing the genetically engineered host cell of Claim 16 under conditions suitable to produce the fusion protein encoded by the polynucleotide; and
- (b) recovering the fusion protein from the culture.

19- A polypeptide encoded by the polynucleotide of Claim 4, 5 or 6.

20- The polypeptide of Claim 19 which immunoreacts with seropositive serum of an individual infected with *Chlamydia pneumoniae*.

21- The polypeptide of Claim 19 which comprises the following polypeptides or fragments thereof:

- 10 (a) a *Chlamydia pneumoniae* transmembrane polypeptide having between 1 and 3 transmembrane domains;
- (b) a *Chlamydia pneumoniae* transmembrane polypeptide having between 4 and 6 transmembrane domains;
- (c) a *Chlamydia pneumoniae* transmembrane polypeptide having at least 7 transmembrane domains;
- 15 (d) a *Chlamydia pneumoniae* polypeptide involved in intermediate metabolism of sugars and/or cofactors;
- (e) a *Chlamydia pneumoniae* polypeptide involved in intermediate metabolism of nucleotides or nucleic acids;
- (f) a *Chlamydia pneumoniae* polypeptide involved in metabolism of amino acids or polypeptides;
- 20 (g) a *Chlamydia pneumoniae* polypeptide involved in metabolism of fatty acids;
- (h) a *Chlamydia pneumoniae* polypeptide involved in the synthesis of the cell wall;
- 25 (i) a *Chlamydia pneumoniae* polypeptide involved in transcription, translation, and/or maturation process;
- (j) a *Chlamydia pneumoniae* transport polypeptide;
- (k) a *Chlamydia pneumoniae* polypeptide involved in the virulence process;
- 30 (l) a *Chlamydia pneumoniae* polypeptide involved in the secretory system and/or which is secreted;
- (m) a *Chlamydia pneumoniae* polypeptide of the cellular envelope or outer cellular envelope of *Chlamydia pneumoniae*.
- (n) a *Chlamydia pneumoniae* surface exposed polypeptide;
- 35 (o) a *Chlamydia pneumoniae* lipoprotein;
- (p) a *Chlamydia pneumoniae* polypeptide involved in lipopolysaccharide biosynthesis;
- (q) a *Chlamydia pneumoniae* KDO-related polypeptide;

- (r) a *Chlamydia pneumoniae* phosphomannomutase-related polypeptide;
- (s) a *Chlamydia pneumoniae* phosphoglucomutase-related polypeptide;
- 5 (t) a *Chlamydia pneumoniae* lipid A component-related polypeptide;
- (u) a *Chlamydia pneumoniae* polypeptide that contains an RGD sequence;
- (v) a *Chlamydia pneumoniae* Type III secreted polypeptide;
- 10 (w) a *Chlamydia pneumoniae* cell wall anchored surface polypeptide; or
- (x) a *Chlamydia pneumoniae* polypeptide that is not found in *Chlamydia trachomatis*.

15 22- A fusion protein encoded by the polynucleotide of Claim 8.

23- The fusion protein of Claim 22 which immunoreacts with seropositive serum of an individual infected with *Chlamydia pneumoniae*.

20 24- An antibody that immunospecifically binds to the polypeptide of Claim 19.

25- An antibody that immunospecifically binds to the fusion protein of Claim 22.

26- A method for the detection and/or identification of *Chlamydia pneumoniae* in a biological
25 sample, comprising:

- (a) contacting the sample with a polynucleotide primer of Claim 1, 2, 3, 4, 5, or 6 in the presence of a polymerase enzyme and nucleotides under conditions which permit primer extension; and
- 30 (b) detecting the presence of primer extension products in the sample in which the detection of primer extension products indicates the presence of *Chlamydia pneumoniae* in the sample.

27- A method for the detection and/or identification of *Chlamydia pneumoniae* in a biological
35 sample, comprising:

- (a) contacting the sample with a polynucleotide probe of Claim 1, 2, 3, 4, 5, or 6 under conditions which permit hybridization of complementary base pairs; and

- (b) detecting the presence of hybridization complexes in the sample in which the detection of hybridization complexes indicates the presence of *Chlamydia pneumoniae* in the sample.

5 28- A method for the detection and/or identification of *Chlamydia pneumoniae* in a biological sample, comprising:

- (a) contacting the sample with the antibody of Claim 24 under conditions suitable for the formation of immune complexes; and
- (b) detecting the presence of immune complexes in the sample, in
10 which the detection of immune complexes indicates the presence of *Chlamydia pneumoniae* in the sample.

29- A method for the detection and/or identification of antibodies to *Chlamydia pneumoniae* in a biological sample, comprising:

- 15 (a) contacting the sample with a polypeptide of Claim 19 under conditions suitable for the formation of immune complexes; and
- (b) detecting the presence of immune complexes in the sample, in which the detection of immune complexes indicates the presence of *Chlamydia pneumoniae* in the sample.

20

30- A DNA chip containing an array of polynucleotides comprising at least one of the polynucleotides of Claim 1, 2, 3, 4, 5, or 6.

31- A protein chip containing an array of polypeptides comprising at least one of the
25 polypeptides of Claim 19.

32- An immunogenic composition comprising the polypeptide of Claim 19 and a pharmaceutically acceptable carrier.

30 33- An immunogenic composition comprising the polypeptide of Claim 20 and a pharmaceutically acceptable carrier.

34- An immunogenic composition comprising the fusion protein of Claim 22 and a pharmaceutically acceptable carrier.

35

35- An immunogenic composition comprising the fusion protein of Claim 23 and a pharmaceutically acceptable carrier.

- 36- A pharmaceutical composition comprising the polypeptide of Claim 19 and a pharmaceutically acceptable carrier.
- 37- A pharmaceutical composition comprising the polypeptide of Claim 20 and a pharmaceutically acceptable carrier.
- 38- A pharmaceutical composition comprising the polypeptide of Claim 22 and a pharmaceutically acceptable carrier.
- 39- A pharmaceutical composition comprising the polypeptide of Claim 23 and a pharmaceutically acceptable carrier.
- 40- A method of immunizing against *Chlamydia pneumoniae*, comprising: administering to a host an immunizing amount of the immunogenic composition of Claim 32.
- 41- A method of immunizing against *Chlamydia pneumoniae*, comprising: administering to a host an immunizing amount of the immunogenic composition of Claim 33.
- 42- A method of immunizing against *Chlamydia pneumoniae*, comprising administering to a host an immunizing amount of the immunogenic composition of Claim 34.
- 43- A method of immunizing against *Chlamydia pneumoniae*, comprising: administering to a host an immunizing amount of the immunogenic composition of Claim 35.
- 44- A DNA immunogenic composition comprising the expression vector of Claim 11.
- 45- The DNA composition of Claim 44, wherein the DNA composition directs the expression of a neutralizing epitope of *Chlamydia pneumoniae*.
- 46- A DNA immunogenic composition comprising the expression vector of Claim 12.
- 47- The DNA composition of Claim 46, wherein the DNA composition directs the expression of a neutralizing epitope of *Chlamydia pneumoniae*.
- 48- A screening assay, comprising:
- (a) contacting a test compound with an isolated polynucleotide of Claim 1, 2, 3, 4, 5 or 6; and
 - (b) detecting whether binding occurs.

- 49- A screening assay, comprising:
- (a) contacting a test compound with the polypeptide of Claim 19;
 - and
 - (b) detecting whether binding occurs.
- 5
- 50- A screening assay, comprising:
- (a) contacting a test compound with the polypeptide of Claim 22;
 - and
 - (b) detecting whether binding occurs.
- 10 51- A kit comprising a container containing an isolated polynucleotide of Claim 1, 2, 3, 4, 5 or 6.
- 52- The kit of Claim 51 wherein the polynucleotide is a primer or a probe.
- 15 53- The kit of Claim 51 wherein the polynucleotide is a primer and the kit further comprises a container containing a polymerase.
- 54- The kit of Claim 51 which further comprises a container containing deoxynucleotide triphosphates.
- 20 55- A kit comprising a container containing an antibody that immunospecifically binds to the polypeptide of Claim 19.
- 56- A kit comprising a container containing an antibody that immunospecifically binds to the
- 25 fusion protein of Claim 22.

Figure 1.

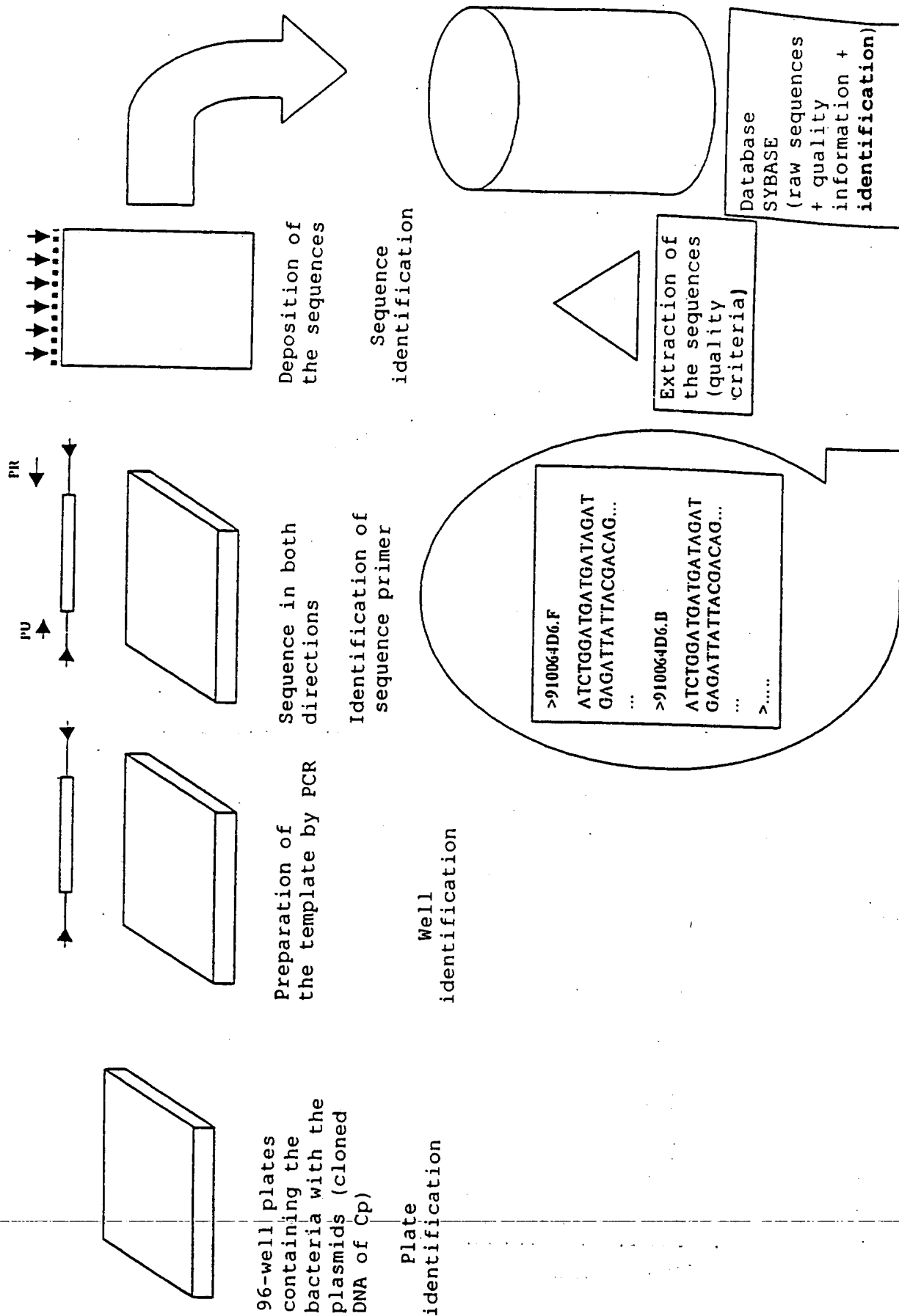


Figure 2.

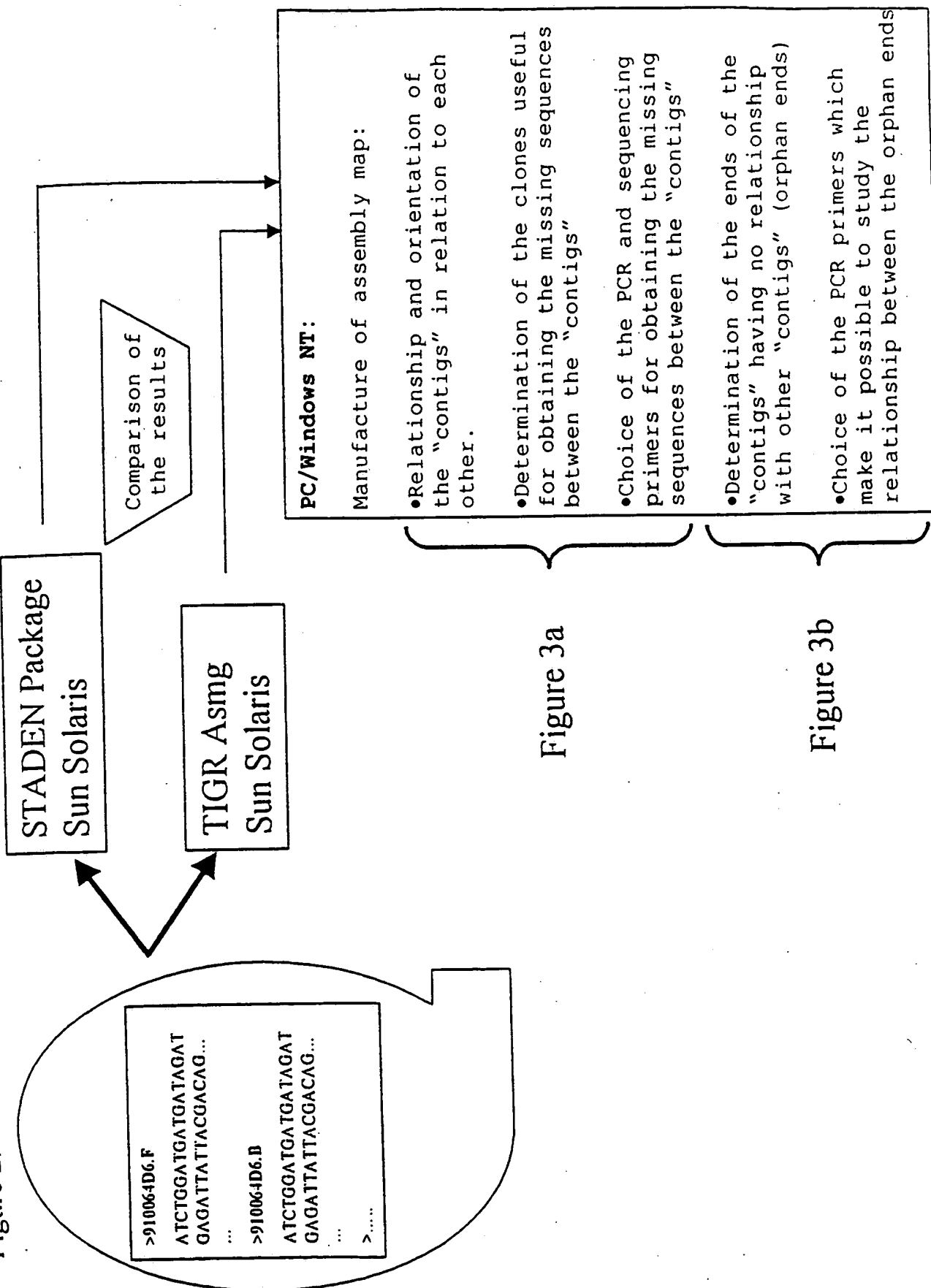
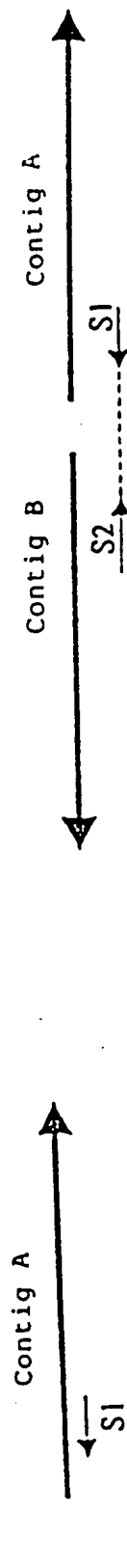


Figure 3a

Figure 3b

FIGURE 3A



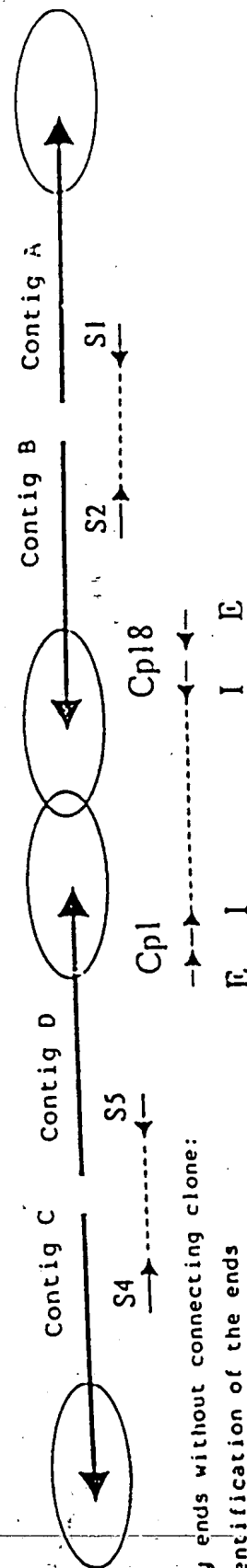
Distribution and position of the sequences on the contigs:

- 1- Define the arrangement of the contigs in relation to each other
- 2- Define the PCR primers which make it possible to fill the sequence

Statistical determination of the sequences:

- 1- Belonging to the same clone
- 2- Situated on two different contigs

FIGURE 3B



Contig ends without connecting clone:

- 1- Identification of the ends
- 2- Determination of outer and inner PCR primers for studying the relationships between the contigs

E: outer primers
I: inner primers

SEQUENCE LISTING

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<213>Chlamydia pneumoniae

<400>1

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<210>2

<211>251

<212>PRT

<213>Chlamydia pneumoniae

<400>2

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 20 25 30
 Lys Glu Tyr Val Gln Thr Leu Ala Ser Xaa Leu Gln Gly Glu Pro Leu
 35 40 45
 Ser Cys Thr Ile Gly Ile Ala Ser Pro Phe Thr Ser Leu Arg Ala Ile
 50 55 60
 His Glu Met Ile Asn Thr Gly Ala Phe Leu Trp Leu Gly Ala Gln
 65 70 75 80
 Asn Val His Pro Glu Leu Ser Gly Ala Phe Thr Gly Glu Ile Ser Leu
 85 90 95
 Pro Met Leu Lys Glu Val Gly Val Glu Phe Val Leu Val Gly His Ser
 100 105 110
 Glu Arg Arg His Ile Phe Gly Glu Ser Asp Ala Phe Ile Ala Ser Lys
 115 120 125
 Val Lys Ser Val Ala Gln Ala Gly Leu Val Pro Val Leu Cys Val Gly
 130 135 140
 Glu Ser Leu Glu Val Arg Glu Glu Gly Lys Ala His Gln Val Ile Lys
 145 150 155 160
 Lys Gln Leu Leu Gly Leu Glu Gln Met Asp Asn Gly Ser Glu Phe
 165 170 175
 Leu Ile Ala Tyr Glu Pro Val Trp Ala Ile Gly Thr Gly Lys Val Ala
 180 185 190
 Glu Ala Ser Asp Val Gln Asp Ile His Met Phe Cys Arg Glu Val Val
 195 200 205

Ala Glu Arg Phe Ser Glu Ala Thr Ala Glu Glu Ile Ser Ile Leu Tyr
 210 215 220
 Gly Gly Ser Val Lys Val Asp Asn Ala Gln Arg Phe Gly Gln Cys Ser
 225 230 235 240
 Asp Val Asp Gly Leu Leu Val Gly Gly Xaa Leu
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<210>3

<211>119

<212>PRT

<213>Chlamydia pneumoniae

<400>3

Ser Met Ser Leu Asn Lys Glu Ile Gly Met Thr Val Leu Phe Tyr Ala
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 20 25 30
 Leu Val Gln Glu Ser Lys Ser Met Gly Leu Gly Ser Ser Phe Gly Val
 35 40 45
 Asp Ser Gly Asp Ser Val Phe Gly Val Ser Thr Pro Asp Ile Leu Lys
 50 55 60
 Lys Val Thr Ser Xaa Cys Ala Val Ala Phe Cys Ile Gly Cys Leu Leu
 65 70 75 80
 Leu Ser Phe Ser Thr Asn Leu Leu Gly Lys Lys Leu Asp Ala Lys Glu
 85 90 95
 Phe Leu Leu Pro Ala Ala Glu Glu Ser Asp Thr Gln Ala Ser Ser Glu
 100 105 110
 Ser Val Glu Ala Asp Glu Ser
 115

<210>4

<211>204

<212>PRT

<213>Chlamydia pneumoniae

<400>4

Val Leu Val Val Arg Asp Phe Phe Thr Glu Leu Cys Gln Ala His Val
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 Gln Thr Met Ile Arg Arg Leu Glu Tyr Tyr Gly Ser Pro Ile Leu Arg
 20 25 30
 Lys Lys Ser Ser Pro Ile Ala Glu Ile Thr Asp Glu Ile Arg Asn Leu
 35 40 45
 Val Ser Asp Met Cys Asp Thr Met Glu Ala His Arg Gly Val Gly Leu
 50 55 60
 Ala Ala Pro Gln Val Gly Lys Asn Val Ser Leu Phe Val Met Cys Val
 65 70 75 80
 Asp Arg Glu Thr Glu Asp Gly Glu Leu Ile Phe Ser Glu Ser Pro Arg
 85 90 95
 Val Phe Ile Asn Pro Val Leu Ser Asp Pro Ser Glu Thr Pro Ile Ile
 100 105 110
 Gly Lys Glu Gly Cys Leu Ser Ile Pro Gly Leu Arg Gly Glu Val Phe
 115 120 125
 Arg Pro Gln Lys Ile Thr Val Thr Ala Met Asp Leu Asn Gly Lys Ile
 130 135 140
 Phe Thr Glu His Leu Glu Gly Phe Thr Ala Arg Ile Ile Met His Glu
 145 150 155 160
 Thr Asp His Leu Asn Gly Val Leu Tyr Ile Asp Leu Met Glu Glu Pro
 165 170 175
 Lys Asp Pro Lys Lys Phe Lys Ala Ser Leu Glu Lys Ile Lys Arg Arg
 180 185 190
 Tyr Asn Thr His Leu Ser Lys Glu Glu Leu Val Ser
 195 200

<210>5

<211>301

<212>PRT

<213>Chlamydia pneumoniae

<400>5

Met Ser Cys Met Pro Pro Pro Phe Val Val Thr Leu Thr Thr Ser Ala

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 Gln Asn Asn Leu Arg Asp Gln Leu Lys Glu Lys Asn Phe Ile Phe Ser
 20 25 30
 Gln Pro Gln Asn Thr Val Phe Gln Ala Arg Ser Asn Thr Val Thr Cys
 35 40 45
 Thr Leu Tyr Pro Ser Gly Lys Leu Val Ile Gln Gly Lys Gly Ser Glu
 50 55 60
 Glu Phe Ile Glu Phe Phe Leu Glu Pro Glu Ile Leu His Thr Phe Thr
 65 70 75 80
 His Ala Arg Val Glu Gln Asp Leu Arg Pro Arg Leu Gly Val Asp Glu
 85 90 95
 Ser Gly Lys Gly Asp Phe Phe Gly Pro Leu Cys Ile Ala Ala Val Tyr
 100 105 110
 Ala Ser Asn Ala Glu Ile Leu Lys Lys Leu Tyr Glu Asn Lys Val Gln
 115 120 125
 Asp Ser Lys Asn Leu Lys Asp Thr Lys Ile Ala Ser Leu Ala Arg Ile
 130 135 140
 Ile Arg Ser Leu Cys Val Cys Asp Val Ile Ile Leu Tyr Pro Glu Lys
 145 150 155 160
 Tyr Asn Glu Leu Tyr Gly Lys Phe Gln Asn Leu Asn Thr Leu Leu Ala
 165 170 175
 Trp Ala His Ala Thr Val Ile Asn Asn Leu Ala Pro Lys Pro Ala Gly
 180 185 190
 Asp Val Phe Ala Ile Ser Asp Gln Phe Ala Ala Ser Glu Tyr Thr Leu
 195 200 205
 Leu Lys Ala Leu Gln Lys Lys Glu Thr Asp Ile Thr Leu Ile Gln Lys
 210 215 220
 Pro Arg Ala Glu Gln Asp Val Val Val Ala Ala Ser Ile Leu Ala
 225 230 235 240
 Arg Asp Ala Phe Val Gln Ser Ile Gln Lys Leu Glu Glu Gln Tyr Gln
 245 250 255
 Val Gln Leu Pro Lys Gly Ala Gly Phe Asn Val Lys Ala Ala Gly Arg
 260 265 270
 Glu Ile Ala Lys Gln Arg Gly Lys Glu Leu Leu Ala Lys Ile Ser Lys
 275 280 285
 Thr His Phe Lys Thr Phe Asp Glu Ile Cys Ser Gly Lys
 290 295 300

<210>6

<211>143

<212>PRT

<213>Chlamydia pneumoniae

<400>6

Met Gln Glu His Ile His Lys Glu Leu Leu His Leu Gly Glu Ile Phe
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 Arg Ser Ser Arg Glu Ser Gln Ser Leu Ser Leu Lys Asp Val Glu Ala
 20 25 30
 Ala Thr Ser Ile Arg Tyr Ser Cys Leu Glu Ala Ile Glu Gln Gly Cys
 35 40 45
 Leu Gly Lys Leu Ile Ser Pro Val Tyr Ala Gln Gly Phe Ile Lys Lys
 50 55 60
 Tyr Ala Thr Tyr Leu Gly Leu Asp Gly Asp Ser Ile Leu Gln Glu His
 65 70 75 80
 Pro Tyr Val Met Lys Ile Phe Lys Glu Phe Ser Asp His Asn Met Glu
 85 90 95
 Met Leu Leu Asp Leu Glu Ser Met Gly Gly Arg Asn Ser Pro Glu Arg
 100 105 110
 Ala Ile His Ser Trp Ser Asn Leu Trp Trp Ala Gly Leu Ile Ile Ile
 115 120 125
 Gly Gly Ile Met Val Trp Trp Leu Gly Ser Leu Phe Ser Ile Phe
 130 135 140

<210>7

<211>460

<212>PRT

<213>Chlamydia pneumoniae

<400>7

Arg Arg Ser Leu Met Thr Phe Pro Cys Gly Asn Cys Asn Cys Tyr Tyr
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 Arg Glu Thr Pro Pro Pro Asn Pro Gly Gly Glu Asp Ile Pro Leu Gln
 20 25 30
 Glu Gly Gly Gln Ser Gly Ser Gln Gly Gly Arg Val Ile Thr Gln Gln
 35 40 45
 Pro Gly Thr Gly Gly Arg Glu Met Gly Ile Ser Leu Gly Ser Asp Asn
 50 55 60
 Val Leu Gly Met Val Glu Gln Ala Gly Ser Leu Leu Asn Asn Leu Leu
 65 70 75 80
 Asp Ser Ala Arg Met Gln Arg Leu Gly His Tyr Cys Tyr Arg Thr Gly
 85 90 95
 Thr Pro Trp Cys Arg Glu His Cys Pro Gly Phe Leu Gln Trp Ile Trp
 100 105 110
 Gly Gly Cys Cys Ala Cys Cys Leu Glu Thr Val Asp Asp Pro Asp Asn
 115 120 125
 Pro Ser Ala Gln Phe Leu Gln Gln Leu Ile Gln Gln Tyr Gly Pro Ile
 130 135 140
 Cys Val Gly Met Ser Phe Gln Gln Leu Pro His Cys Thr Gln Lys Ile
 145 150 155 160
 Glu Gln Gly Glu Pro Leu Gly Asp Gly Asp Lys Gln Glu Val Glu Asn
 165 170 175
 Gly Cys Lys Leu His Arg Glu Leu Leu Lys Ala Ala Gln Pro Arg Cys
 180 185 190
 Met Gly Glu Ser Leu Val Lys Leu Leu Gln Asn Asn Gly Leu Gly Glu
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 210 215 220
 Glu Gly Ala Leu Ser Phe Val Thr Ser Ser Asp Asn Pro Pro Thr Cys
 225 230 235 240
 Trp Ile Leu Gln Pro Glu Gln Gln Pro Cys Pro Pro Pro Pro Thr Asp
 245 250 255
 Glu Glu Gln Leu Gln Gly Ala Val Gly Gly Ala Pro Ala Pro Gln Gln
 260 265 270
 Lys Lys His Pro Ala Gln Glu Cys Arg Val Thr Cys Lys Leu Asn Phe
 275 280 285
 Arg Thr Leu Leu Gln Lys Leu Ser Arg Leu Glu Val Leu Ser Leu Glu
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 Ser Gly Tyr Lys Gly Pro Leu Gly Gln Ala Ala Lys Gln Ile Val Asp
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 Leu Ile Lys Lys Ser Leu Lys Arg Leu Val Ala Ser Asp Leu Ala Thr
 325 330 335
 Phe Leu Gly Pro Gly Ile Gly Leu Ser Leu Glu Ser Gln Val Phe Glu
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 Val Leu Val Leu Leu Cys Leu Leu Ser Lys Gly Tyr Leu Pro Leu Asp
 355 360 365
 Pro Leu His Pro Glu Gln Thr Val Leu Asp Pro Arg Val Gln Gly Pro
 370 375 380
 Trp Gln Arg Ile Leu Arg Lys Val Leu Val Thr Thr Thr Ala Gly Glu
 385 390 395 400
 Asn Ile Trp Arg Gln Thr Gln Gly Glu Ala Pro Arg Gln Ala Pro Pro
 405 410 415
 Pro Pro Asp Pro Trp Asp Asp Asp Glu Ile Glu Arg Asp Gly Ile Val
 420 425 430
 Thr Gly Gly Gly Phe Gly Ile Pro Cys Gln Cys Leu Arg Cys Trp Arg
 435 440 445
 Lys Leu Pro Thr Glu Lys Arg Pro Asn Arg Trp Leu
 450 455 460

<210>8

<211>484

<212>PRT

<213>Chlamydia pneumoniae

<400>8

Lys Gly Thr Thr Met Val Cys Pro Asn Asn Ser Trp Phe Arg Met Cys
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 Gly Asn Phe Asn Cys Glu Trp Val Glu Val Thr Thr Thr Glu Thr
 20 25 30
 Thr Arg Gln Ser Ala Ser Asp Ile Ser Glu Glu Ala Gly Ser Ser Gly
 35 40 45
 Gly Ala Ala Pro Ile Thr Thr Gln Pro Thr Lys Ile Thr Lys Val Glu
 50 55 60
 Lys Arg Val Gln Phe Asn Thr Ala Gln Gly Asp Glu Ser Thr Ile His
 65 70 75 80
 Met Ile Gln Glu Ala Gly Glu Leu Val Asp Ser Ile Leu Ser His Arg
 85 90 95
 Arg Thr Gln Gly Cys Thr Glu Tyr Cys Tyr Asp Ser Tyr Ala Thr Gly
 100 105 110
 Cys Gly Gln Arg Cys Gly Ser Phe Gly Arg Leu Ile Cys Gly Thr Tyr
 115 120 125
 Lys Ala Cys Cys Leu Asp Arg Glu Asp Asn Gln Val Ala Gly Leu Val
 130 135 140
 His Glu Cys Glu Gln Thr His Gly Pro Ile Ala Val Ala Leu Ala Ala
 145 150 155 160
 Lys Thr Met Gly Leu Asn Leu Met Glu Leu Val Glu Lys Asn Thr Ile
 165 170 175
 Leu Ser Glu Glu Gln Lys Asn Glu Phe Arg Gln His Cys Ser Glu Ala
 180 185 190
 Lys Thr Gln Leu Tyr Gly Thr Met Gln Ser Leu Ser Gln Asn Phe Phe
 195 200 205
 Leu Glu Gly Val Asn Ser Ile Arg Glu Arg Gly Leu Asp Asp Ser Leu
 210 215 220
 Val Gln Ala Val Leu Ser Phe Ile Ala Thr Arg Ser Trp Glu Lys Thr
 225 230 235 240
 Ile Glu Ser Glu Glu Ala Ser Gly Thr Ser Ser Ala Ser Asn Ser Thr
 245 250 255
 Arg Ile Pro Ala Cys Tyr Ile Leu Asn Thr Ser Pro Leu Thr Thr Ser
 260 265 270
 Arg Leu Ser Cys Gly Ser Arg Asp Ala Arg Arg Pro Ser Ser Val Gly
 275 280 285
 Ala Glu Pro Gln Tyr Val Ala Lys Lys Tyr Asn Asp Asn Gly Met Ala
 290 295 300
 Arg Gln Leu Gly Lys Ile Gln Val Thr Asn Leu Lys Thr Gly Asp Phe
 305 310 315 320
 Ser Ala Leu Gly Pro Phe Gly Leu Leu Ile Val Lys Met Leu Asn Ser
 325 330 335
 Phe Leu Leu Ser Ala Ser Gln Ser Thr Ser Ser Ile Leu Lys His Thr
 340 345 350
 Gly Gly Glu Ile Cys Tyr Thr Cys Pro Asn Phe Arg Asp Ile Val Val
 355 360 365
 Leu Leu Met Leu Ala Ile Gly Tyr Cys Pro Ala Asn Thr Asp Glu Thr
 370 375 380
 Ser Val Val Asp Ile His Met Ile Asp Asp Pro Ile Met Thr Ile Phe
 385 390 395 400
 Tyr Arg Leu Gln Tyr Ser Tyr Arg Thr Gly Lys Thr Ser Ala Ser Phe
 405 410 415
 Leu Lys Lys Lys Pro Ser Leu Val Arg Gln Glu Ser Leu Asp Cys Pro
 420 425 430
 Thr Pro Ala Glu Ser Val Pro Leu Met Ser Ser Leu Glu Glu Asp
 435 440 445
 Glu Asn Glu Asp Asp Asp Glu Asp Gly Asn Leu Ala Tyr Gln Gln Arg
 450 455 460
 Ile Leu Glu Cys Ser Gly His Leu Gln Thr Leu Phe Leu Gly Ile Lys
 465 470 475 480
 Ile Asn Lys Glu

<212>PRT

<213>Chlamydia pneumoniae

<400>9

Lys Lys Asp Tyr Ile Leu His Ala Asn Trp Cys Cys Trp Lys Gln Met
 1 5 10 15
 Leu Lys Ile Gln Lys Lys Arg Met Cys Val Ser Val Val Ile Thr Val
 20 25 30
 Gly Ala Ile Val Gly Phe Phe Asn Ser Ala Asp Ala Ala Pro Lys Lys
 35 40 45
 Lys Lys Ile Pro Ile Gln Ile Leu Tyr Ser Phe Thr Lys Val Ser Ser
 50 55 60
 Tyr Leu Lys Asn Glu Asp Ala Ser Thr Ile Phe Cys Val Asp Val Asp
 65 70 75 80
 Arg Gly Leu Leu Gln His Arg Tyr Leu Gly Ser Pro Gly Trp Gln Glu
 85 90 95
 Thr Arg Arg Arg Gln Leu Phe Lys Ser Leu Glu Asn Gln Ser Tyr Gly
 100 105 110
 Asn Glu Arg Leu Gly Glu Glu Thr Leu Ala Ile Asp Ile Phe Arg Asn
 115 120 125
 Lys Glu Cys Leu Glu Ser Glu Ile Pro Glu Gln Met Glu Ala Ile Leu
 130 135 140
 Ala Asn Ser Ser Ala Leu Val Leu Gly Ile Ser Ser Phe Gly Ile Thr
 145 150 155 160
 Gly Ile Pro Ala Thr Leu His Ser Leu Leu Arg Gln Asn Leu Ser Phe
 165 170 175
 Gln Lys Arg Ser Ile Ala Ser Glu Ser Phe Leu Leu Lys Ile Asp Ser
 180 185 190
 Ala Pro Ser Asp Ala Ser Val Phe Tyr Lys Gly Val Leu Phe Arg Gly
 195 200 205
 Glu Thr Ala Ile Val Asp Ala Leu Ser Gln Leu Phe Ala Gln Leu Asp
 210 215 220
 Leu Ser Pro Lys Lys Ile Ile Phe Leu Gly Glu Asp Pro Glu Val Val
 225 230 235 240
 Gln Ala Val Gly Ser Ala Cys Ile Gly Trp Gly Met Asn Phe Leu Gly
 245 250 255
 Leu Val Tyr Tyr Pro Ala Gln Glu Ser Leu Phe Ser Tyr Val His Pro
 260 265 270
 Tyr Ser Thr Ala Thr Glu Leu Gln Glu Ala Gln Gly Leu Gln Val Ile
 275 280 285
 Ser Asp Glu Val Ala Gln Leu Thr Leu Asn Ala Leu Pro Lys Met Asn
 290 295 300

<210>10

<211>277

<212>PRT

<213>Chlamydia pneumoniae

<400>10

Arg Ile Phe Met Arg Arg Tyr Leu Phe Met Val Leu Ala Leu Cys Leu
 1 5 10 15
 Tyr Arg Ala Ala Pro Leu Glu Ala Val Val Ile Lys Ile Thr Asp Ala
 20 25 30
 Gln Ala Val Leu Lys Phe Ala Arg Glu Lys Thr Leu Val Cys Phe Asn
 35 40 45
 Ile Glu Asp Thr Val Val Phe Pro Lys Gln Met Val Gly Gln Ser Ala
 50 55 60
 Trp Leu Tyr Asn Arg Glu Leu Asp Leu Lys Thr Thr Leu Ser Glu Glu
 65 70 75 80
 Gln Ala Arg Glu Gln Ala Phe Leu Glu Trp Met Gly Ile Ser Phe Leu
 85 90 95
 Val Asp Tyr Glu Leu Val Ser Ala Asn Leu Arg Asn Val Leu Thr Gly
 100 105 110
 Leu Ser Leu Lys Arg Ser Trp Val Leu Gly Ile Ser Gln Arg Pro Val
 115 120 125
 His Leu Ile Lys Asn Thr Leu Arg Ile Leu Arg Ser Phe Asn Ile Asp
 130 135 140

Phe Thr Ser Cys Pro Ala Ile Cys Glu Asp Gly Trp Leu Ser His Pro
 145 150 155 160
 Thr Lys Asp Thr Thr Phe Asp Gln Ala Met Ala Ile Glu Lys Asn Ile
 165 170 175
 Leu Phe Val Gly Ser Leu Lys Asn Gly Gln Pro Met Asp Ala Ala Leu
 180 185 190
 Glu Val Leu Leu Ser Gly Ile Ser Ser Pro Pro Ser Gln Ile Ile Tyr
 195 200 205
 Val Asp Gln Asp Ala Glu Arg Leu Arg Ser Ile Gly Ala Phe Cys Lys
 210 215 220
 Lys Ala Asn Ile Tyr Phe Ile Gly Met Leu Tyr Thr Pro Ala Lys Gln
 225 230 235 240
 Arg Val Glu Ser Tyr Asn Pro Lys Leu Thr Ala Ile Gln Trp Ser Gln
 245 250 255
 Ile Arg Lys Asn Leu Ser Asp Glu Tyr Tyr Glu Ser Leu Leu Ser Tyr
 260 265 270
 Val Lys Ser Lys Gly
 275

<210>11

<211>109

<212>PRT

<213>Chlamydia pneumoniae

<400>11

Lys Arg Leu Lys Asp Glu Ile Lys Tyr Thr Ser Leu Arg Arg Lys Ala
 1 5 10 15
 Met Leu Gly Lys Ile Ile Arg Gly Leu Ser Ser Leu Ile Val Ile Leu
 20 25 30
 Cys Ala Leu Asn Val Gly Leu Ile Gly Ile Thr His Asn Lys Leu Asn
 35 40 45
 Ile Ile Ala Lys Leu Cys Gly Gly Val Ser Thr Pro Ala Thr Gln Ile
 50 55 60
 Thr Tyr Ile Ile Ile Gly Ile Ala Gly Val Ile Cys Leu Leu Ser Phe
 65 70 75 80
 Cys Pro Phe Cys Ser Lys Lys Ser Arg His Ser His Gly Asp Ser Cys
 85 90 95
 Ser Ser Gly Gly Cys His Ser His His Ser Asp Lys Asn
 100 105

<210>12

<211>102

<212>PRT

<213>Chlamydia pneumoniae

<400>12

His Met Glu Gln Phe His Leu Asp Arg Glu Glu Ile Leu Leu Leu Ala
 1 5 10 15
 Lys Ala Ser Ala Leu Gln Leu Ser Glu Glu Leu Ile Gln Glu Tyr Gln
 20 25 30
 Thr Ser Leu Ser Ala Val Ile Thr Ser Met Lys Glu Ala Leu Ala Ile
 35 40 45
 Glu Ile Asp Asp Ala Asp Ser Cys Glu Ser Leu Phe Met His Val Val
 50 55 60
 Asn Val Glu Asp Leu Arg Glu Asp Ser Val Thr Ser Asp Phe Asn Arg
 65 70 75 80
 Glu Glu Phe Leu Arg Asn Val Pro Glu Ser Leu Gly Gly Leu Val Lys
 85 90 95
 Val Pro Ala Val Ile Lys
 100

<210>13

<211>494

<212>PRT

<213>Chlamydia pneumoniae

<400>13

Lys Ile Met Tyr Arg Tyr Ser Ala Leu Glu Leu Ala Lys Ala Val Thr
 1 5 10 15
 Leu Gly Glu Leu Thr Ala Thr Gly Val Thr Gln His Phe Phe His Arg

20					25					30					
Ile	Glu	Glu	Ala	Glu	Gly	Gln	Val	Gly	Ala	Phe	Ile	Ser	Leu	Cys	Lys
	35						40					45			
Glu	Gln	Ala	Leu	Glu	Gln	Ala	Glu	Leu	Ile	Asp	Lys	Lys	Arg	Ser	Arg
	50					55					60				
Gly	Glu	Pro	Leu	Gly	Lys	Leu	Ala	Gly	Val	Pro	Val	Gly	Ile	Lys	Asp
	65					70					75				80
Asn	Ile	His	Val	Thr	Gly	Leu	Lys	Thr	Thr	Cys	Ala	Ser	Arg	Val	Leu
				85					90					95	
Glu	Asn	Tyr	Gln	Pro	Pro	Phe	Asp	Ala	Thr	Val	Val	Glu	Arg	Ile	Lys
			100					105					110		
Lys	Glu	Asp	Gly	Ile	Ile	Leu	Gly	Lys	Leu	Asn	Met	Asp	Glu	Phe	Ala
		115					120					125			
Met	Gly	Ser	Thr	Thr	Leu	Tyr	Ser	Ala	Phe	His	Pro	Thr	His	Asn	Pro
	130					135					140				
Trp	Asp	Leu	Ser	Arg	Val	Pro	Gly	Gly	Ser	Ser	Gly	Gly	Ser	Ala	Ala
	145					150					155				160
Ala	Val	Ser	Ala	Arg	Phe	Cys	Pro	Val	Ala	Leu	Gly	Ser	Asp	Thr	Gly
				165					170					175	
Gly	Ser	Ile	Arg	Gln	Pro	Ala	Ala	Phe	Cys	Gly	Val	Val	Gly	Phe	Lys
			180					185					190		
Pro	Ser	Tyr	Gly	Ala	Val	Ser	Arg	Tyr	Gly	Leu	Val	Ala	Phe	Ala	Ser
		195					200					205			
Ser	Leu	Asp	Gln	Ile	Gly	Pro	Leu	Ala	Asn	Thr	Val	Glu	Asp	Val	Ala
	210					215					220				
Leu	Met	Met	Asp	Val	Phe	Ser	Gly	Arg	Asp	Pro	Lys	Asp	Ala	Thr	Ser
	225					230					235				240
Arg	Glu	Phe	Phe	Arg	Asp	Ser	Phe	Met	Ser	Lys	Leu	Ser	Thr	Glu	Val
				245					250					255	
Pro	Lys	Val	Ile	Gly	Val	Pro	Arg	Thr	Phe	Leu	Glu	Gly	Leu	Arg	Asp
			260					265					270		
Asp	Ile	Arg	Glu	Asn	Phe	Phe	Ser	Ser	Leu	Ala	Ile	Phe	Glu	Gly	Glu
		275					280					285			
Gly	Thr	His	Leu	Val	Asp	Val	Glu	Leu	Asp	Ile	Leu	Ser	His	Ala	Val
	290					295					300				
Ser	Ile	Tyr	Tyr	Ile	Leu	Ala	Ser	Ala	Glu	Ala	Ala	Thr	Asn	Leu	Ala
	305					310					315				320
Arg	Phe	Asp	Gly	Val	Arg	Tyr	Gly	Tyr	Arg	Ser	Pro	Gln	Ala	His	Thr
			325						330					335	
Ile	Ser	Gln	Leu	Tyr	Asp	Leu	Ser	Arg	Gly	Glu	Gly	Phe	Gly	Lys	Glu
		340					345						350		
Val	Met	Arg	Arg	Ile	Leu	Leu	Gly	Asn	Tyr	Val	Leu	Ser	Ala	Glu	Arg
		355					360					365			
Gln	Asn	Val	Tyr	Tyr	Lys	Lys	Ala	Thr	Ala	Val	Arg	Ala	Lys	Ile	Val
	370					375					380				
Lys	Ala	Phe	Arg	Thr	Ala	Phe	Glu	Lys	Cys	Glu	Ile	Leu	Ala	Met	Pro
	385					390					395				400
Val	Cys	Ser	Ser	Pro	Ala	Phe	Glu	Ile	Gly	Glu	Ile	Leu	Asp	Pro	Val
			405						410					415	
Thr	Leu	Tyr	Leu	Gln	Asp	Ile	Tyr	Thr	Val	Ala	Met	Asn	Leu	Ala	Tyr
			420					425					430		
Leu	Pro	Ala	Ile	Ala	Val	Pro	Ser	Gly	Phe	Ser	Lys	Glu	Gly	Leu	Pro
		435					440					445			
Leu	Gly	Leu	Gln	Ile	Ile	Gly	Gln	Gln	Gly	Gln	Asp	Gln	Gln	Val	Cys
	450					455					460				
Gln	Val	Gly	Tyr	Ser	Phe	Gln	Glu	His	Ala	Gln	Ile	Lys	Gln	Leu	Phe
	465					470					475				480
Ser	Lys	Arg	Tyr	Ala	Lys	Ser	Val	Val	Leu	Gly	Gly	Gln	Ser		
				485					490						

<210>14

<211>500

<212>PRT

<213>Chlamydia pneumoniae

<400>14

Glu Ile Cys Gln Lys Cys Cys Ser Arg Arg Ser Ile Met Ser Ala Val
 1 5 10 15
 Tyr Ala Asp Trp Glu Ser Val Ile Gly Leu Glu Val His Val Glu Leu
 20 25 30
 Asn Thr Ala Ser Lys Leu Phe Ser Ser Ala Leu Asn Arg Phe Gly Asp
 35 40 45
 Glu Pro Asn Thr Asn Ile Ser Thr Val Cys Thr Gly Leu Pro Gly Ser
 50 55 60
 Leu Pro Val Leu Asn Gln Ser Ala Val Glu Lys Ala Val Leu Phe Gly
 65 70 75 80
 Cys Ala Val Glu Gly Glu Ile Ser Leu Leu Ser Arg Phe Asp Arg Lys
 85 90 95
 Ser Tyr Phe Tyr Pro Asp Ser Pro Arg Asn Phe Gln Ile Thr Gln Phe
 100 105 110
 Glu His Pro Ile Ile Arg Gly Gly Arg Ile Lys Ala Ile Val Gln Gly
 115 120 125
 Glu Glu Arg Tyr Phe Glu Leu Ala Gln Thr His Ile Glu Asp Asp Ala
 130 135 140
 Gly Met Leu Lys His Phe Gly Glu Phe Ala Gly Val Asp Tyr Asn Arg
 145 150 155 160
 Ala Gly Val Pro Leu Ile Glu Ile Val Ser Lys Pro Cys Met Phe Cys
 165 170 175
 Pro Glu Asp Gly Cys Cys Tyr Ala Thr Ser Leu Val Ser Leu Leu Asp
 180 185 190
 Tyr Ile Gly Ile Ser Asp Cys Asn Met Glu Glu Gly Ser Ile Arg Phe
 195 200 205
 Asp Val Asn Val Ser Val Arg Pro Lys Gly Ser Pro Glu Leu Arg Asn
 210 215 220
 Lys Val Glu Ile Lys Asn Met Asn Ser Phe Ala Phe Met Ala Gln Ala
 225 230 235 240
 Leu Glu Ala Glu Lys Gln Arg Gln Ile Asp Glu Tyr Leu Asn Gln Pro
 245 250 255
 Asn Lys Asp Pro Lys Leu Val Ile Pro Ala Ala Thr Tyr Arg Trp Asp
 260 265 270
 Pro Glu Lys Lys Lys Thr Val Leu Met Arg Leu Lys Glu Ser Ala Glu
 275 280 285
 Asp Tyr Lys Tyr Phe Pro Glu Pro Asp Leu Pro Thr Leu Gln Leu Thr
 290 295 300
 Glu Ser Tyr Ile Glu Arg Ile Arg Lys Thr Leu Pro Glu Leu Pro Tyr
 305 310 315 320
 Asp Lys Tyr His Arg Tyr Ile Gln Glu Tyr Gly Leu Ser Glu Asp Ile
 325 330 335
 Ala Ser Ile Leu Ile Ser Asp Lys Asn Ile Ala Thr Phe Phe Glu Val
 340 345 350
 Ala Cys Lys Asp Cys Lys Asn Phe Arg Ser Leu Ser Asn Trp Val Thr
 355 360 365
 Val Glu Phe Gly Gly Arg Cys Lys Thr Leu Gly Val Lys Leu Pro Ser
 370 375 380
 Ser Gly Ile Phe Pro Glu Gly Val Ala Gln Leu Val Asn Ala Ile Asp
 385 390 395 400
 Gln Gly Val Ile Thr Gly Lys Ile Ala Lys Glu Ile Ala Asp Leu Met
 405 410 415
 Met Glu Ser Pro Gly Lys Asn Pro Glu Glu Ile Leu Lys Glu Lys Pro
 420 425 430
 Glu Leu Leu Pro Met Ser Asp Glu Gly Glu Leu Gln Lys Ile Ile Ala
 435 440 445
 Glu Val Val Leu Ala Asn Pro Glu Ser Ile Val Asp Tyr Lys Asn Gly
 450 455 460
 Lys Thr Lys Ala Leu Gly Phe Leu Val Gly Gln Ile Met Lys Arg Thr
 465 470 475 480
 Ala Gly Lys Ala Pro Pro Lys Arg Val Asn Glu Leu Leu Leu Leu Glu
 485 490 495
 Leu Asp Lys Gly
 500

<210>15
 <211>922
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>15

Met	Arg	Phe	Ser	Leu	Cys	Gly	Phe	Pro	Leu	Val	Phe	Ser	Phe	Thr	Leu
1				5					10					15	
Leu	Ser	Val	Phe	Asp	Thr	Ser	Leu	Ser	Ala	Thr	Thr	Ile	Ser	Leu	Thr
			20					25					30		
Pro	Glu	Asp	Ser	Phe	His	Gly	Asp	Ser	Gln	Asn	Ala	Glu	Arg	Ser	Tyr
		35					40					45			
Asn	Val	Gln	Ala	Gly	Asp	Val	Tyr	Ser	Leu	Thr	Gly	Asp	Val	Ser	Ile
	50					55					60				
Ser	Asn	Val	Asp	Asn	Ser	Ala	Leu	Asn	Lys	Ala	Cys	Phe	Xaa	Val	Thr
	65				70					75					80
Ser	Gly	Ser	Val	Thr	Phe	Ala	Gly	Asn	His	His	Gly	Xaa	Tyr	Phe	Asn
				85					90					95	
Asn	Ile	Ser	Ser	Gly	Thr	Thr	Lys	Glu	Gly	Ala	Val	Leu	Cys	Cys	Gln
			100					105					110		
Asp	Pro	Gln	Ala	Thr	Ala	Arg	Phe	Ser	Gly	Phe	Ser	Thr	Leu	Ser	Phe
		115					120					125			
Asn	Gln	Ser	Pro	Gly	Asp	Ile	Lys	Glu	Gln	Gly	Cys	Leu	Tyr	Ser	Lys
	130					135					140				
Asn	Ala	Leu	Met	Leu	Leu	Asn	Asn	Tyr	Val	Val	Arg	Phe	Glu	Gln	Asn
	145				150					155					160
Gln	Ser	Lys	Thr	Lys	Gly	Gly	Ala	Ile	Ser	Gly	Ala	Asn	Val	Thr	Ile
				165					170					175	
Val	Gly	Asn	Tyr	Asp	Ser	Val	Ser	Phe	Tyr	Gln	Asn	Ala	Ala	Thr	Phe
			180					185					190		
Gly	Gly	Ala	Ile	His	Ser	Ser	Gly	Pro	Leu	Gln	Ile	Ala	Val	Asn	Gln
		195					200					205			
Ala	Glu	Ile	Arg	Phe	Ala	Gln	Asn	Thr	Ala	Lys	Asn	Gly	Ser	Gly	Gly
	210					215					220				
Ala	Leu	Tyr	Ser	Asp	Gly	Asp	Ile	Asp	Ile	Asp	Gln	Asn	Ala	Tyr	Val
	225				230				235						240
Leu	Phe	Arg	Glu	Asn	Glu	Ala	Leu	Thr	Thr	Ala	Ile	Gly	Lys	Gly	Gly
				245					250					255	
Ala	Val	Cys	Cys	Leu	Pro	Thr	Ser	Gly	Ser	Ser	Thr	Pro	Val	Pro	Ile
			260					265					270		
Val	Thr	Phe	Ser	Asp	Asn	Lys	Gln	Leu	Val	Phe	Glu	Arg	Asn	His	Ser
		275					280					285			
Ile	Met	Gly	Gly	Gly	Ala	Ile	Tyr	Ala	Arg	Lys	Leu	Ser	Ile	Ser	Ser
	290					295					300				
Gly	Gly	Pro	Thr	Leu	Phe	Ile	Asn	Asn	Ile	Ser	Tyr	Ala	Asn	Ser	Gln
	305				310					315					320
Asn	Leu	Gly	Gly	Ala	Ile	Ala	Ile	Asp	Thr	Gly	Gly	Glu	Ile	Ser	Leu
				325					330					335	
Ser	Ala	Glu	Lys	Gly	Thr	Ile	Thr	Phe	Gln	Gly	Asn	Arg	Thr	Ser	Leu
			340					345					350		
Pro	Phe	Leu	Asn	Gly	Ile	His	Leu	Leu	Gln	Asn	Ala	Lys	Phe	Leu	Lys
		355					360					365			
Leu	Gln	Ala	Arg	Asn	Gly	Tyr	Ser	Ile	Glu	Phe	Tyr	Asp	Pro	Ile	Thr
	370					375					380				
Ser	Glu	Ala	Asp	Gly	Ser	Thr	Gln	Leu	Asn	Ile	Asn	Gly	Asp	Pro	Lys
	385				390					395					400
Asn	Lys	Glu	Tyr	Thr	Gly	Thr	Ile	Leu	Phe	Ser	Gly	Glu	Lys	Ser	Leu
				405					410					415	
Ala	Asn	Asp	Pro	Arg	Asp	Phe	Lys	Ser	Thr	Ile	Pro	Gln	Asn	Val	Asn
			420				425						430		
Leu	Ser	Ala	Gly	Tyr	Leu	Val	Ile	Lys	Glu	Gly	Ala	Glu	Val	Thr	Val
		435					440					445			
Ser	Lys	Phe	Thr	Gln	Ser	Pro	Gly	Ser	His	Leu	Val	Leu	Asp	Leu	Gly
	450					455					460				
Thr	Lys	Leu	Ile	Ala	Ser	Lys	Glu	Asp	Ile	Ala	Ile	Thr	Gly	Leu	Ala

465 470 475 480
 Ile Asp Ile Asp Ser Leu Ser Ser Ser Ser Thr Ala Ala Val Ile Lys
 485 490 495
 Ala Asn Thr Ala Asn Lys Gln Ile Ser Val Thr Asp Ser Ile Glu Leu
 500 505 510
 Ile Ser Pro Thr Gly Asn Ala Tyr Glu Asp Leu Arg Met Arg Asn Ser
 515 520 525
 Gln Thr Phe Pro Leu Leu Ser Leu Glu Pro Gly Ala Gly Gly Ser Val
 530 535 540
 Thr Val Thr Ala Gly Asp Phe Leu Pro Val Ser Pro His Tyr Gly Phe
 545 550 555 560
 Gln Gly Asn Trp Lys Leu Ala Trp Thr Gly Thr Gly Asn Lys Val Gly
 565 570 575
 Glu Phe Phe Trp Asp Lys Ile Asn Tyr Lys Pro Arg Pro Glu Lys Glu
 580 585 590
 Gly Asn Leu Val Pro Asn Ile Leu Trp Gly Asn Ala Val Asp Val Arg
 595 600 605
 Ser Leu Met Gln Val Gln Glu Thr His Ala Ser Ser Leu Gln Thr Asp
 610 615 620
 Arg Gly Leu Trp Ile Asp Gly Ile Gly Asn Leu Phe His Val Ser Ala
 625 630 635 640
 Ser Glu Asp Asn Ile Arg Tyr Arg His Asn Ser Gly Gly Tyr Val Leu
 645 650 655
 Ser Val Asn Asn Glu Ile Thr Pro Lys His Tyr Thr Ser Met Ala Phe
 660 665 670
 Ser Gln Leu Phe Ser Arg Asp Lys Asp Tyr Ala Val Ser Asn Asn Glu
 675 680 685
 Tyr Arg Met Tyr Leu Gly Ser Tyr Leu Tyr Gln Tyr Thr Thr Ser Leu
 690 695 700
 Gly Asn Ile Phe Arg Tyr Ala Ser Arg Asn Pro Asn Val Asn Val Gly
 705 710 715 720
 Ile Leu Ser Arg Arg Phe Leu Gln Asn Pro Leu Met Ile Phe His Phe
 725 730 735
 Leu Cys Ala Tyr Gly His Ala Thr Asn Asp Met Lys Thr Asp Tyr Ala
 740 745 750
 Asn Phe Pro Met Val Lys Asn Ser Trp Arg Asn Asn Cys Trp Ala Ile
 755 760 765
 Glu Cys Gly Gly Ser Met Pro Leu Leu Val Phe Glu Asn Gly Arg Leu
 770 775 780
 Phe Gln Gly Ala Ile Pro Phe Met Lys Leu Gln Leu Val Tyr Ala Tyr
 785 790 795 800
 Gln Gly Asp Phe Lys Glu Thr Thr Ala Asp Gly Arg Arg Phe Ser Asn
 805 810 815
 Gly Ser Leu Thr Ser Ile Ser Val Pro Leu Gly Ile Arg Phe Glu Lys
 820 825 830
 Leu Ala Leu Ser Gln Asp Val Leu Tyr Asp Phe Ser Phe Ser Tyr Ile
 835 840 845
 Pro Asp Ile Phe Arg Lys Asp Pro Ser Cys Glu Ala Ala Leu Val Ile
 850 855 860
 Ser Gly Asp Ser Trp Leu Val Pro Ala Ala His Val Ser Arg His Ala
 865 870 875 880
 Phe Val Gly Ser Gly Thr Gly Arg Tyr His Phe Asn Asp Tyr Thr Glu
 885 890 895
 Leu Leu Cys Arg Gly Ser Ile Glu Cys Arg Pro His Ala Arg Asn Tyr
 900 905 910
 Asn Ile Asn Cys Gly Ser Lys Phe Arg Phe
 915 920

<210>16

<211>90

<212>PRT

<213>Chlamydia pneumoniae

<400>16

Ala Leu Pro Val Gly Glu Ile Ser Ser Ile Glu Ser Val Thr Asp Ile

Cys Leu Phe Ala Val Phe Ala Leu Ile Thr Ala Ala Val Glu Asp Glu
 20 25 30
 Leu Lys Leu Ser Ile Ser Ile Ala Arg Pro Val Met Ala Met Ser Ser
 35 40 45
 Leu Glu Ala Ile Ser Leu Val Pro Lys Ser Lys Thr Lys Cys Asp Pro
 50 55 60
 Gly Asp Cys Val Asn Phe Glu Thr Val Thr Ser Ala Pro Ser Leu Ile
 65 70 75 80
 Thr Lys Tyr Pro Ala Asp Arg Leu Thr Phe
 85 90

<210>17

<211>1003

<212>PRT

<213>Chlamydia pneumoniae

<400>17

Lys Ser Phe Arg Tyr Asn Leu Ser Leu Ile Phe Ser Phe Leu Val Val
 1 5 10 15
 Ile Pro Leu Thr Asp Ser Thr Thr Ser Ser Leu Ser Thr Ser Leu Leu
 20 25 30
 Asp Glu Gly Asn Pro Gln Ser Met Arg Lys Leu Arg Ile Leu Ala Ile
 35 40 45
 Val Leu Ile Ala Leu Ser Ile Ile Leu Ile Ala Gly Gly Val Val Leu
 50 55 60
 Leu Thr Val Ala Ile Pro Gly Leu Ser Ser Val Ile Ser Ser Pro Ala
 65 70 75 80
 Gly Met Gly Ala Cys Ala Leu Gly Cys Val Met Leu Ala Leu Gly Ile
 85 90 95
 Asp Val Leu Leu Lys Lys Arg Glu Val Pro Ile Val Leu Ala Ser Val
 100 105 110
 Thr Thr Thr Pro Gly Thr Gly Ser Pro Arg Ser Gly Ile Ser Ile Ser
 115 120 125
 Gly Ala Asp Ser Thr Ile Arg Ser Leu Pro Thr Tyr Leu Leu Asp Glu
 130 135 140
 Gly His Pro Gln Ser Met Arg Lys Leu Arg Ile Leu Ala Ile Val Leu
 145 150 155 160
 Ile Val Phe Ser Ile Ile Leu Ile Ala Ser Gly Val Val Leu Leu Thr
 165 170 175
 Val Ala Ile Pro Gly Leu Ser Ser Val Ile Ser Ser Pro Ala Gly Met
 180 185 190
 Gly Ala Cys Ala Leu Gly Cys Val Met Leu Ala Leu Gly Ile Asp Val
 195 200 205
 Leu Leu Lys Lys Arg Glu Val Pro Ile Val Leu Ala Ser Val Thr Thr
 210 215 220
 Thr Pro Gly Thr Gly Ser Pro Arg Ser Gly Ile Ser Ile Ser Gly Ala
 225 230 235 240
 Asp Ser Thr Ile Arg Ser Leu Pro Thr Tyr Pro Leu Asp Glu Gly His
 245 250 255
 Pro Gln Ser Met Arg Lys Leu Arg Ile Leu Ala Ile Val Leu Ile Val
 260 265 270
 Phe Ser Ile Ile Leu Ile Ala Ser Gly Val Val Leu Leu Thr Val Ala
 275 280 285
 Ile Pro Gly Leu Ser Ser Ile Ser Ser Pro Ala Glu Met Gly Ala
 290 295 300
 Cys Ala Leu Gly Cys Val Met Leu Ala Leu Gly Ile Asp Val Leu Leu
 305 310 315 320
 Lys Lys Arg Glu Val Pro Ile Val Val Pro Ala Pro Ile Pro Glu Glu
 325 330 335
 Val Val Ile Asp Asp Ile Asp Glu Glu Ser Ile Arg Leu Gln Gln Glu
 340 345 350
 Ala Glu Ala Ala Leu Ala Arg Leu Pro Glu Glu Met Ser Ala Phe Glu
 355 360 365
 Gly Tyr Ile Lys Val Val Glu Ser His Leu Glu Asn Met Lys Ser Leu
 370 375 380
 Pro Tyr Asp Gly His Gly Leu Glu Glu Lys Thr Lys His Gln Ile Arg

385					390					395				400
Val	Val	Arg	Ser	Ser	Leu	Lys	Ala	Met	Val	Pro	Glu	Phe	Leu	Asp Ile
				405					410					415
Arg	Arg	Ile	Phe	Glu	Glu	Glu	Glu	Phe	Phe	Phe	Leu	Ser	Ala	Arg Lys
			420					425					430	
Arg	Leu	Ile	Asp	Leu	Ala	Thr	Thr	Leu	Val	Glu	Arg	Lys	Ile	Leu Thr
			435				440					445		
Glu	Gln	Leu	Glu	Arg	Asn	Asn	Leu	Arg	Lys	Ala	Phe	Ser	Tyr	Leu Tyr
			450			455					460			
Gln	Asp	Ser	Ile	Phe	Lys	Lys	Ile	Ile	Asp	Asn	Phe	Glu	Lys	Leu Ala
465					470				475					480
Trp	Lys	Phe	Met	Ile	Leu	Ser	Lys	Ser	Ile	Cys	Arg	Phe	Thr	Ile Ile
				485					490					495
Phe	Glu	Asn	His	Glu	His	Gly	Val	Ala	Lys	Ser	Leu	Leu	His	Lys Asn
			500				505						510	
Ala	Val	Leu	Glu	Lys	Val	Ile	Tyr	Arg	Ser	Leu	Gln	Lys	Ser	Tyr
			515			520					525			
Arg	Asp	Ile	Gly	Met	Ser	Ser	Ala	Lys	Met	Lys	Ile	Leu	His	Gly Asn
			530			535					540			
Pro	Phe	Phe	Ser	Leu	Glu	Asp	Asn	Lys	Lys	Thr	Ile	Met	Lys	Glu His
545					550					555				560
Ala	Glu	Met	Leu	Glu	Ser	Leu	Ser	Ser	Tyr	Arg	Lys	Val	Phe	Leu Ala
				565					570					575
Leu	Ser	Asp	Glu	Asn	Val	Val	Asp	Thr	Pro	Ser	Asp	Pro	Lys	Lys Trp
			580				585						590	
Asp	Leu	Ser	Gly	Ile	Pro	Cys	Arg	Asp	Ala	Leu	Ser	Glu	Ile	Ser Arg
			595				600					605		
Asp	Glu	Gln	Trp	Gln	Lys	Lys	Ala	His	Leu	Lys	His	Gln	Glu	Ser Leu
			610			615						620		
Tyr	Thr	Gln	Ala	Arg	Asp	Arg	Leu	Thr	Asp	Gln	Ser	Ser	Lys	Glu Asn
625					630					635				640
Gln	Lys	Glu	Leu	Glu	Lys	Ala	Glu	Gln	Glu	Tyr	Ile	Ser	Ser	Trp Glu
				645					650					655
Arg	Val	Lys	Lys	Phe	Glu	Ile	Glu	Arg	Val	Gln	Glu	Arg	Ile	Gln Ala
				660				665					670	
Ile	Gln	Lys	Leu	Tyr	Pro	Asn	Ile	Leu	Glu	Arg	Glu	Glu	Glu	Thr Thr
			675				680					685		
Gly	Gln	Glu	Thr	Val	Thr	Pro	Thr	Val	Gln	Gly	Thr	Thr	Ala	Ser Ser
			690			695					700			
Asp	Leu	Thr	Asp	Ile	Leu	Gly	Arg	Ile	Glu	Val	Ser	Ser	Arg	Glu Asp
705					710					715				720
Asn	Gln	Asn	Gln	Glu	Ser	Cys	Val	Lys	Val	Leu	Arg	Ser	His	Glu Val
				725					730					735
Glu	Met	Ser	Trp	Glu	Val	Lys	Gln	Glu	Tyr	Gly	Pro	Lys	Lys	Lys Glu
			740					745					750	
Phe	Gln	Asp	Gln	Met	Gly	Ser	Leu	Glu	Arg	Phe	Phe	Thr	Glu	His Ile
			755				760					765		
Glu	Glu	Leu	Glu	Val	Leu	Gln	Lys	Asp	Tyr	Ser	Lys	His	Leu	Ser Tyr
			770			775					780			
Phe	Lys	Lys	Val	Asn	Asn	Lys	Lys	Glu	Val	Gln	Tyr	Ala	Lys	Phe Arg
785					790					795				800
Leu	Lys	Val	Leu	Glu	Ser	Asp	Leu	Glu	Gly	Ile	Leu	Ala	Gln	Thr Glu
				805					810					815
Ser	Ala	Glu	Ser	Leu	Leu	Thr	Gln	Glu	Glu	Leu	Pro	Ile	Leu	Ala Thr
			820					825					830	
Arg	Gly	Ala	Leu	Glu	Lys	Ala	Val	Phe	Lys	Gly	Ser	Leu	Cys	Cys Ala
			835				840					845		
Leu	Ala	Ser	Lys	Ala	Lys	Pro	Tyr	Phe	Glu	Glu	Asp	Pro	Arg	Phe Gln
						855					860			
Asp	Ser	Asp	Thr	Gln	Leu	Arg	Ala	Leu	Thr	Leu	Arg	Leu	Gln	Glu Ala
865					870					875				880
Lys	Ala	Ser	Leu	Glu	Glu	Glu	Ile	Lys	Arg	Phe	Ser	Asn	Leu	Glu Asn
				885					890					895
Asp	Ile	Ala	Glu	Glu	Arg	Arg	Leu	Leu	Lys	Glu	Ser	Lys	Gln	Thr Phe

Trp Glu Asp Leu Lys Gln Thr Ile Phe Trp Val Gly Glu His Asp Cys

20 25 30
 Thr Asp Ile Glu Thr Val Arg Lys Ser Cys Met Trp Leu Asp Arg Tyr
 35 40 45
 Ala Asp Lys Phe Ile Leu Arg Glu Lys Glu Glu Lys Met Glu Arg His
 50 55 60
 Glu Leu Phe His Ala Thr Met Val Arg Lys Ala Ser Gly His Ala Tyr
 65 70 75 80
 Ala Lys Ala Lys Ala Ala Phe Glu Lys Glu Arg Ser Asn Glu Asn Gln
 85 90 95
 Arg Lys Val Lys Asp Val Glu Lys Trp Leu Ser Lys Gly Leu Ala Glu
 100 105 110
 Phe Arg Asn Gln Glu Ser Arg Arg Ala Arg Glu Arg Leu Arg Glu Leu
 115 120 125
 Gln Thr Leu Tyr Pro Glu Val Ser Val Glu Glu Arg Val Leu Glu Arg
 130 135 140
 Gln Arg Thr Lys Lys Val Asn Leu Glu Asn Leu Tyr Ala Asp Ile Glu
 145 150 155 160
 Lys Lys Tyr His His Cys Val Arg Glu Gln Glu His Tyr Trp Lys Glu
 165 170 175
 Val Glu Asn Lys Glu Ala Glu Tyr Arg Glu Asn Gly Glu Lys Val Leu
 180 185 190
 Ser Ala Glu Glu Val Ser Glu Cys Leu Gln Arg Leu Glu Asp Cys Leu
 195 200 205
 Glu Thr Trp Ser Lys Lys Leu Thr Lys Ala Glu Glu Ser Val Phe Glu
 210 215 220
 Met Lys Phe Asp Ala Thr Glu Lys Leu Gly Asn Lys Val Leu Ser Asp
 225 230 235 240
 Val Thr Asn Arg Leu Glu Ile Leu Cys Glu Asp Ala Glu Glu Met Ile
 245 250 255
 Phe Arg Ile Glu Glu Ile Glu Met Thr Leu Arg Met Val Glu Leu Pro
 260 265 270
 Leu Leu Phe Met Lys Asn Thr Phe Glu Lys Ala Ser Leu Gln Tyr Asn
 275 280 285
 Ser Cys Lys Glu Met Leu Ala Lys Val Glu Pro Gln Cys Lys Glu Ser
 290 295 300
 Pro Thr Tyr Arg Ser Ser Gln Glu Arg Leu Glu Arg Leu Asn Gln Asp
 305 310 315 320
 Leu Gln Thr Ala Tyr Thr Asn Cys Gln Glu Arg Leu Gln Gly Phe Ser
 325 330 335
 Asp Leu Glu Ser Lys Val Arg Thr Cys Arg Asp His Leu Arg Glu Gln
 340 345 350
 Met Lys His Phe Glu Val Gln Gly Leu Asn Phe Ile Asn Glu Glu Leu
 355 360 365
 Leu Trp Val Gly Ala Glu Leu Phe Thr Gln Ala Arg Leu Asp Leu Val
 370 375 380
 Ala Thr Val Pro Tyr Met Glu Phe Tyr Leu Gln Tyr His Asn Ile Lys
 385 390 395 400
 Arg Glu Lys Val Arg Ser Gln Trp Met Ala Lys Thr Glu Arg Tyr Arg
 405 410 415
 Glu Ile Arg Gln Ala Phe Gln Gly Val Met Lys Glu Asp Leu Leu Ala
 420 425 430
 Glu Asp Thr Ile Leu Lys Glu Glu Asp Tyr Trp Leu Leu Arg Asp Asp
 435 440 445
 Trp Leu Leu Arg Asp Glu Arg Lys Asn Arg Gln Arg Leu Ile Cys
 450 455 460
 Asn Lys Ile Ala Ala Ala Gln Gln Arg Val Lys Gly Phe
 465 470 475

<210>20

<211>810

<212>PRT

<213>Chlamydia pneumoniae

<400>20

Cys Lys Tyr Phe Tyr Leu Arg Ser Tyr Pro Pro Pro Gln His Ser Val

Gly	Ser	Ile	Ser	Pro	Ser	Lys	Leu	Arg	Val	Leu	Ala	Ile	Thr	Phe	20	25	30	
Leu	Val	Phe	Gly	Met	Leu	Leu	Leu	Ile	Ser	Gly	Ala	Leu	Phe	Leu	Thr	35	40	45
Leu	Gly	Ile	Pro	Gly	Leu	Ser	Ala	Ala	Ile	Ser	Phe	Gly	Leu	Gly	Ile	50	55	60
Gly	Leu	Ser	Ala	Leu	Gly	Gly	Val	Leu	Met	Ile	Ser	Gly	Leu	Leu	Cys	65	70	75
Leu	Leu	Val	Lys	Arg	Glu	Ile	Pro	Thr	Val	Arg	Pro	Glu	Glu	Ile	Pro	85	90	95
Glu	Gly	Val	Ser	Leu	Ala	Pro	Ser	Glu	Glu	Pro	Ala	Leu	Gln	Ala	Ala	100	105	110
Gln	Lys	Thr	Leu	Ala	Gln	Leu	Pro	Lys	Glu	Leu	Asp	Gln	Leu	Asp	Thr	115	120	125
Asp	Ile	Gln	Glu	Val	Phe	Ala	Cys	Leu	Arg	Lys	Leu	Lys	Asp	Ser	Lys	130	135	140
Tyr	Glu	Ser	Arg	Ser	Phe	Leu	Asn	Asp	Ala	Lys	Lys	Glu	Leu	Arg	Val	145	150	155
Phe	Asp	Phe	Val	Val	Glu	Asp	Thr	Leu	Ser	Glu	Ile	Phe	Glu	Leu	Arg	165	170	175
Gln	Ile	Val	Ala	Gln	Glu	Gly	Trp	Asp	Leu	Asn	Phe	Leu	Ile	Asn	Gly	180	185	190
Gly	Arg	Ser	Leu	Met	Met	Thr	Ala	Glu	Ser	Glu	Ser	Leu	Asp	Leu	Phe	195	200	205
His	Val	Ser	Lys	Arg	Leu	Gly	Tyr	Leu	Pro	Ser	Gly	Asp	Val	Arg	Gly	210	215	220
Glu	Gly	Leu	Lys	Lys	Ser	Ala	Lys	Glu	Ile	Val	Ala	Arg	Leu	Met	Ser	225	230	235
Leu	His	Cys	Glu	Ile	His	Lys	Val	Ala	Val	Ala	Phe	Asp	Arg	Asn	Ser	245	250	255
Tyr	Ala	Met	Ala	Glu	Lys	Ala	Phe	Ala	Lys	Ala	Leu	Gly	Ala	Leu	Glu	260	265	270
Glu	Ser	Val	Tyr	Arg	Ser	Leu	Thr	Gln	Ser	Tyr	Arg	Asp	Lys	Phe	Leu	275	280	285
Glu	Ser	Glu	Arg	Ala	Lys	Ile	Pro	Trp	Asn	Gly	His	Ile	Thr	Trp	Leu	290	295	300
Arg	Asp	Asp	Ala	Lys	Ser	Gly	Cys	Ala	Glu	Lys	Lys	Leu	Arg	Asp	Ala	305	310	315
Glu	Glu	Arg	Trp	Lys	Lys	Phe	Arg	Lys	Ala	Val	Phe	Trp	Val	Glu	Glu	325	330	335
Asp	Gly	Gly	Phe	Asp	Ile	Asn	Asn	Leu	Gly	Asp	Trp	Gly	Thr	Val		340	345	350
Leu	Asp	Pro	Tyr	Arg	Gln	Glu	Arg	Met	Asp	Glu	Ile	Thr	Phe	His	Glu	355	360	365
Leu	Tyr	Glu	Lys	Thr	Thr	Phe	Leu	Lys	Arg	Leu	His	Arg	Lys	Cys	Ala	370	375	380
Leu	Ala	Lys	Thr	Thr	Phe	Glu	Lys	Lys	Arg	Ser	Lys	Lys	Asn	Leu	Gln	385	390	395
Ala	Val	Glu	Glu	Ala	Asn	Ala	Arg	Arg	Leu	Lys	Tyr	Val	Arg	Asp	Trp	405	410	415
Tyr	Asp	Gln	Glu	Phe	Gln	Lys	Ala	Gly	Glu	Arg	Leu	Glu	Lys	Leu	His	420	425	430
Ala	Leu	Tyr	Pro	Glu	Val	Ser	Val	Ser	Ile	Arg	Glu	Asn	Lys	Ile	Gln	435	440	445
Glu	Thr	Arg	Ser	Asn	Leu	Glu	Lys	Ala	Tyr	Glu	Ala	Ile	Glu	Glu	Asn	450	455	460
Tyr	Arg	Cys	Cys	Val	Arg	Glu	Gln	Glu	Asp	Tyr	Trp	Lys	Glu	Glu	Glu	465	470	475
Lys	Arg	Glu	Ala	Glu	Phe	Arg	Glu	Arg	Gly	Asn	Lys	Ile	Leu	Ser	Pro	485	490	495
Glu	Glu	Leu	Glu	Ser	Ser	Leu	Glu	Gln	Phe	Asp	His	Gly	Leu	Lys	Asn	500	505	510
Phe	Ser	Glu	Lys	Leu	Met	Glu	Leu	Glu	Gly	His	Ile	Leu	Lys	Leu	Gln	515	520	525

Lys Glu Ala Thr Ala Glu Val Glu Asn Lys Ile Leu Ser Asp Ala Glu
 530 535 540
 Ser Arg Leu Glu Ile Val Phe Glu Asp Val Lys Glu Met Pro Cys Arg
 545 550 555 560
 Ile Glu Glu Ile Glu Lys Thr Leu Arg Met Ala Glu Leu Pro Leu Leu
 565 570 575
 Pro Thr Lys Lys Ala Phe Glu Lys Ala Cys Ser Gln Tyr Asn Ser Cys
 580 585 590
 Ala Glu Met Leu Glu Lys Val Lys Pro Tyr Cys Lys Glu Ser Leu Ala
 595 600 605
 Tyr Val Thr Ser Lys Glu Arg Leu Val Ser Leu Asp Glu Asp Leu Arg
 610 615 620
 Arg Ala Tyr Thr Glu Cys Gln Lys Arg Phe Gln Gly Asp Ser Gly Leu
 625 630 635 640
 Glu Ser Glu Val Arg Ala Cys Arg Glu Gln Leu Arg Glu Arg Ile Gln
 645 650 655
 Glu Phe Glu Thr Gln Gly Leu Asp Leu Val Glu Lys Glu Leu Leu Cys
 660 665 670
 Val Ser Ser Arg Leu Arg Asn Thr Glu Cys Asp Cys Val Ser Gly Val
 675 680 685
 Lys Lys Glu Ala Pro Pro Gly Lys Lys Phe Tyr Ala Gln Tyr Tyr Asp
 690 695 700
 Glu Ile Tyr Arg Val Arg Val Gln Ser Arg Trp Met Thr Met Ser Glu
 705 710 715 720
 Arg Leu Arg Glu Gly Val Gln Ala Cys Asn Lys Met Leu Lys Ala Gly
 725 730 735
 Leu Ser Glu Glu Asp Lys Val Leu Lys Glu Glu Glu Tyr Trp Leu Tyr
 740 745 750
 Arg Glu Glu Arg Lys Asn Lys Glu Lys Arg Leu Val Gly Thr Lys Ile
 755 760 765
 Val Ala Thr Gln Gln Arg Val Ala Ala Phe Glu Ser Ile Glu Val Pro
 770 775 780
 Glu Ile Pro Glu Ala Pro Glu Glu Lys Pro Ser Leu Leu Asp Lys Ala
 785 790 795 800
 Arg Ser Leu Phe Thr Arg Glu Asp His Ser
 805 810

<210>21

<211>83

<212>PRT

<213>Chlamydia pneumoniae

<400>21

Glu Trp Ser Ser Arg Val Asn Lys Glu Arg Ala Leu Ser Ser Lys Leu
 1 5 10 15
 Gly Phe Ser Ser Gly Ala Ser Gly Ile Ser Gly Thr Ser Met Asp Ser
 20 25 30
 Asn Ala Ala Thr Arg Cys Cys Val Ala Thr Ile Leu Val Pro Thr Lys
 35 40 45
 Arg Phe Ser Leu Phe Phe Leu Ser Ser Arg Tyr Asn Gln Tyr Ser Ser
 50 55 60
 Ser Leu Arg Thr Leu Ser Ser Ser Leu Arg Pro Ala Phe Asn Ile Leu
 65 70 75 80
 Leu His Ala

<210>22

<211>246

<212>PRT

<213>Chlamydia pneumoniae

<400>22

Phe Trp Tyr Ser Ile Met Thr Ala Ala Pro Ala Ile Leu His Val Ser
 1 5 10 15
 Pro Thr Pro Pro Glu Glu Thr Lys Phe Val Ile Pro Lys Asp Ser Lys
 20 25 30
 Ser Arg Ala Leu Gly Ile Thr Leu Leu Val Val Gly Ile Leu Leu Val
 35 40 45

Val Cys Gly Ala Ile Val Leu Ser Gly Val Ile Ser Gly Leu Ser Ala
 50 55 60
 Leu Ile Val Cys Gly Leu Gly Ile Ser Thr Ile Ser Leu Gly Val Val
 65 70 75 80
 Leu Phe Val Leu Gly Leu Ile Leu Leu Leu Arg Lys Arg Glu Leu Thr
 85 90 95
 Leu Glu Gln Ile Glu Ala Lys Gln Ile Ala Glu Thr Phe Ala Asp Glu
 100 105 110
 Leu Lys Glu Leu Glu Met Tyr Ile Gln Ser Thr Glu Lys Ser Leu Glu
 115 120 125
 Lys Ile Glu Gly Ser Arg Tyr Ser Asp Gln Gly Phe Leu Asn Arg Ala
 130 135 140
 Thr Gln Lys Ile Leu Asp Leu Glu Ser Ser Leu Ser Ser Ile Thr Ser
 145 150 155 160
 Glu Phe Arg Asp Leu Arg Gln Leu Phe Asp Glu Glu Lys Ile Glu Leu
 165 170 175
 Leu Ser Gly Glu Arg Leu Leu Glu Phe Ile Ala Ala Asn Leu Phe Lys
 180 185 190
 Gln Gly Arg Asp Val Tyr Leu Asn Leu Gly Asn Leu Ala Asp Ile Arg
 195 200 205
 Ala Tyr Met Gly Pro Asn Asn Tyr Lys Val Ala Met Val Ile Glu Lys
 210 215 220
 Ala Lys Ala Val Val His Glu Phe Ile Val Leu Thr Thr Met Ala Arg
 225 230 235 240
 Glu Leu Glu Phe Phe Phe
 245

<210>23

<211>265

<212>PRT

<213>Chlamydia pneumoniae

<400>23

Gly Ile Arg Val Phe Phe Leu Lys Asn Lys Tyr Gly Leu Leu Lys Gly
 1 5 10 15
 Met Tyr Gln Glu Asn Leu Arg Leu Leu Glu Arg Leu Leu Tyr Asn Ser
 20 25 30
 Val Gln Lys Ser Tyr Ala Asp Arg Leu Phe Ser Tyr Glu Lys Thr Lys
 35 40 45
 Met Val His Asp Thr Pro Leu Ile Pro Trp Glu Glu Asp Lys Glu Lys
 50 55 60
 Cys Ala Glu Ala Glu Lys Ala Phe Leu Glu Gln Lys Ile Leu Leu
 65 70 75 80
 Asp Tyr Gly Lys Ser Ile Phe Trp Leu Asn Glu Asn Asp Glu Ile Asn
 85 90 95
 Leu Asn Asp Pro Trp Ser Trp Gly Leu Asn Thr Val Arg Thr Arg Lys
 100 105 110
 Val Phe Gln Glu Val Asp Asp Ser Glu Arg Trp Asn His Lys Val Leu
 115 120 125
 Ile Gln Lys Leu Glu Asp Asp Tyr Glu Lys Leu Leu Glu Glu Ser Ser
 130 135 140
 Lys Glu Ser Thr Glu Ala Asn Lys Lys Leu Leu Ser Asp Leu Val Asp
 145 150 155 160
 Arg Leu Glu Asp Ala Lys Thr Lys Phe Phe Leu Lys Lys Gln Glu Glu
 165 170 175
 Val Glu Thr Arg Val Lys Asp Leu Arg Ala Arg Tyr Gly Gly Thr Val
 180 185 190
 Asp Pro Lys Gln Asp Thr Glu Ala Lys Lys Lys Val Glu Leu Glu Ala
 195 200 205
 Ser Leu Glu Thr Phe Leu Asp Ser Ile Glu Ser Glu Leu Val Gln Cys
 210 215 220
 Leu Glu Asp Gln Asp Ile Tyr Trp Lys Glu Gln Asp Val Lys Asp Leu
 225 230 235 240
 Ala Arg Thr Gln Glu Leu Glu Glu Gln Asp Ile Glu Ala Lys Arg Glu
 245 250 255
 Glu Ala Ala Glu Asp Leu Arg Lys Ser

260

265

<210>24

<211>277

<212>PRT

<213>Chlamydia pneumoniae

<400>24

Glu Ser Leu Asn Glu Arg Leu Lys Lys Ser Lys Thr Met Leu Asp Arg
 1 5 10 15
 Ala Lys Trp His Ile Glu Asn Ala Glu Asp Ser Ile Thr Trp Trp Thr
 20 25 30
 Ser Gln Ile Glu Met Lys Asp Met Lys Ala Arg Leu Lys Ile Leu Lys
 35 40 45
 Glu Asp Ile Thr Ser Val Leu Pro Glu Ile Asp Glu Ile Glu Thr Cys
 50 55 60
 Leu Ser Leu Glu Glu Leu Pro Leu Leu Thr Thr Arg Glu Leu Leu Thr
 65 70 75 80
 Lys Ser Tyr Leu Lys Phe Lys Ile Cys Ser Glu Thr Leu Leu Lys Met
 85 90 95
 Thr Ser Val Phe Glu Asn Asn Ile Tyr Val Gln Glu Tyr Glu Val Gln
 100 105 110
 Leu Gln Asn Leu Gly Phe Lys Leu Gln Gly Ile Ser Gln Arg Phe Gly
 115 120 125
 Lys Lys Gln Asp Asp Phe Ala Asn Leu Glu Glu Gln Val Ala Leu Gln
 130 135 140
 Lys Lys Arg Leu Arg Glu Leu Thr Gln Asn Phe Glu Ile Gln Gly Phe
 145 150 155 160
 Asn Phe Met Lys Glu Asp Phe Lys Ala Ala Ala Lys Asp Leu Tyr Ile
 165 170 175
 Arg Ser Thr Ala Glu Gln Lys Met Asn Phe Asp Val Pro Cys Met Glu
 180 185 190
 Leu Phe Arg Arg Tyr His Glu Glu Val Asn Lys Pro Leu Leu Glu Leu
 195 200 205
 Met Tyr Asn Cys Ala Asp Ser Tyr Arg Asp Ala Lys Lys Lys Leu Cys
 210 215 220
 Ser Leu Arg Leu Asp Glu Lys Glu Leu Leu Gln Lys Glu Ile Lys Lys
 225 230 235 240
 Glu Glu Phe Tyr Gln Lys Lys Gln Gln Arg His Ala Asp Arg Ser Arg
 245 250 255
 His Thr Arg Tyr Gln Lys Leu Arg Ile Ala Glu Glu Leu Ala Leu Glu
 260 265 270
 Leu Lys Lys Lys Ile
 275

<210>25

<211>202

<212>PRT

<213>Chlamydia pneumoniae

<400>25

Leu Leu Ser Leu Ser Asn Leu Leu Tyr Trp Lys Glu Ser Pro Leu Arg
 1 5 10 15
 Glu Lys Lys Val Val Met Lys Ile Pro Leu Arg Phe Leu Leu Ile Ser
 20 25 30
 Leu Val Pro Thr Leu Ser Met Ser Asn Leu Leu Gly Ala Ala Thr Thr
 35 40 45
 Glu Glu Leu Ser Ala Ser Asn Ser Phe Asp Gly Thr Thr Ser Thr Thr
 50 55 60
 Ser Phe Ser Ser Lys Thr Ser Ser Ala Thr Asp Gly Thr Asn Tyr Val
 65 70 75 80
 Phe Lys Asp Ser Val Val Ile Glu Asn Val Pro Lys Thr Gly Glu Thr
 85 90 95
 Gln Ser Thr Ser Cys Phe Lys Asn Asp Ala Ala Ala Gly Asp Leu Asn
 100 105 110
 Phe Leu Gly Gly Gly Phe Ser Phe Thr Phe Ser Asn Ile Asp Ala Thr
 115 120 125
 Thr Ala Ser Gly Ala Ala Ile Gly Ser Glu Ala Ala Asn Lys Thr Val

130	135	140
Thr Leu Ser Gly Phe	Ser Ala Leu Ser Phe	Leu Lys Ser Pro Ala Ser
145	150	155
Thr Val Thr Asn Gly	Leu Gly Ala Ile Asn	Val Lys Gly Asn Leu Ser
165	170	175
Leu Leu Asp Asn Asp	Lys Val Leu Ile Gln	Asp Asn Phe Ser Thr Gly
180	185	190
Asp Gly Gly Gln Leu	Ile Val Gln Ala Pro	
195	200	

<210>26

<211>199

<212>PRT

<213>Chlamydia pneumoniae

<400>26

Gly Ile Asp Ser	Gly Gln Phe Leu	Asn Arg Arg Trp	Arg Thr Ile Asn
1	5	10	15
Cys Ala Gly Ser	Leu Lys Ile Ala	Asn Asn Lys Ser	Leu Ser Phe Ile
20	25	30	
Gly Asn Ser Ser	Ser Thr Arg Gly	Gly Ala Ile His	Thr Lys Asn Leu
35	40	45	
Thr Leu Ser Ser	Gly Gly Glu Thr	Leu Phe Gln Gly	Asn Thr Ala Pro
50	55	60	
Thr Ala Ala Gly	Lys Gly Gly Ala	Ile Ala Ile Ala	Asp Ser Gly Thr
65	70	75	80
Leu Ser Ile Ser	Gly Asp Ser Gly	Asp Ile Ile Phe	Glu Gly Asn Thr
85	90	95	
Ile Gly Ala Thr	Gly Thr Val Ser	His Ser Ala Ile	Asp Leu Gly Thr
100	105	110	
Ser Ala Lys Ile	Thr Ala Leu Arg	Ala Ala Gln Gly	His Thr Ile Tyr
115	120	125	
Phe Tyr Asp Pro	Ile Thr Val Thr	Gly Ser Thr Ser	Val Ala Asp Ala
130	135	140	
Leu Asn Ile Asn	Ser Pro Asp Thr	Gly Asp Asn Lys	Glu Tyr Thr Gly
145	150	155	160
Thr Ile Val Phe	Ser Gly Glu Lys	Leu Thr Glu Ala	Glu Ala Lys Asp
165	170	175	
Glu Lys Asn Arg	Thr Ser Lys Leu	Leu Gln Asn Val	Ala Phe Lys Asn
180	185	190	
Gly Thr Val Val	Leu Lys Arg		
195			

<210>27

<211>483

<212>PRT

<213>Chlamydia pneumoniae

<400>27

Lys Gly Asp Val	Val Leu Ser Ala	Asn Gly Phe Ser	Gln Asp Ala Asn
1	5	10	15
Ser Lys Leu Ile	Met Asp Leu Gly	Thr Ser Leu Val	Ala Asn Thr Glu
20	25	30	
Ser Ile Glu Leu	Thr Asn Leu Glu	Ile Asn Ile Asp	Ser Leu Arg Asn
35	40	45	
Gly Lys Lys Ile	Lys Leu Ser Ala	Ala Thr Ala Gln	Lys Asp Ile Arg
50	55	60	
Ile Asp Arg Pro	Val Val Leu Ala	Ile Ser Asp Glu	Ser Phe Tyr Gln
65	70	75	80
Asn Gly Phe Leu	Asn Glu Asp His	Ser Tyr Asp Gly	Ile Leu Glu Leu
85	90	95	
Asp Ala Gly Lys	Asp Ile Val Ile	Ser Ala Asp Ser	Arg Ser Ile Asp
100	105	110	
Ala Val Gln Ser	Pro Tyr Gly Tyr	Gln Gly Lys Trp	Thr Ile Asn Trp
115	120	125	
Ser Thr Asp Asp	Lys Lys Ala Thr	Val Ser Trp Ala	Lys Gln Ser Phe
130	135	140	
Asn Pro Thr Ala	Glu Gln Glu Ala	Pro Leu Val Pro	Asn Leu Leu Trp

145 150 155 160
 Gly Ser Phe Ile Asp Val Arg Ser Phe Gln Asn Phe Ile Glu Leu Gly
 165 170 175
 Thr Glu Gly Ala Pro Tyr Glu Lys Arg Phe Trp Val Ala Gly Ile Ser
 180 185 190
 Asn Val Leu His Arg Ser Gly Arg Glu Asn Gln Arg Lys Phe Arg His
 195 200 205
 Val Ser Gly Gly Ala Val Val Gly Ala Ser Thr Arg Met Pro Gly Gly
 210 215 220
 Asp Thr Leu Ser Leu Gly Phe Ala Gln Leu Phe Ala Arg Asp Lys Asp
 225 230 235 240
 Tyr Phe Met Asn Thr Asn Phe Ala Lys Thr Tyr Ala Gly Ser Leu Arg
 245 250 255
 Leu Gln His Asp Ala Ser Leu Tyr Ser Val Val Ser Ile Leu Leu Gly
 260 265 270
 Glu Gly Gly Leu Arg Glu Ile Leu Leu Pro Tyr Val Ser Lys Thr Leu
 275 280 285
 Pro Cys Ser Phe Tyr Gly Gln Leu Ser Tyr Gly His Thr Asp His Arg
 290 295 300
 Met Lys Thr Glu Ser Leu Pro Pro Pro Pro Thr Leu Ser Thr Asp
 305 310 315 320
 His Thr Ser Trp Gly Gly Tyr Val Trp Ala Gly Glu Leu Gly Thr Arg
 325 330 335
 Val Ala Val Glu Asn Thr Ser Gly Arg Gly Phe Phe Gln Glu Tyr Thr
 340 345 350
 Pro Phe Val Lys Val Gln Ala Val Tyr Ala Arg Gln Asp Ser Phe Val
 355 360 365
 Glu Leu Gly Ala Ile Ser Arg Asp Phe Ser Asp Ser His Leu Tyr Asn
 370 375 380
 Leu Ala Ile Pro Leu Gly Ile Lys Leu Glu Lys Arg Phe Ala Glu Gln
 385 390 395 400
 Tyr Tyr His Val Val Ala Met Tyr Ser Pro Asp Val Cys Arg Ser Asn
 405 410 415
 Pro Lys Cys Thr Thr Thr Leu Leu Ser Asn Gln Gly Ser Trp Lys Thr
 420 425 430
 Lys Gly Ser Asn Leu Ala Arg Gln Ala Gly Ile Val Gln Ala Ser Gly
 435 440 445
 Phe Arg Ser Leu Gly Ala Ala Ala Glu Leu Phe Gly Asn Phe Gly Phe
 450 455 460
 Glu Trp Arg Gly Ser Ser Arg Ser Tyr Asn Val Asp Ala Gly Ser Lys
 465 470 475 480
 Ile Lys Phe

<210>28

<211>177

<212>PRT

<213>Chlamydia pneumoniae

<400>28

Met Lys Ser Ser Phe Pro Lys Phe Val Phe Ser Thr Phe Ala Ile Phe
 1 5 10 15
 Pro Leu Ser Met Ile Ala Thr Glu Thr Val Leu Asp Ser Ser Ala Ser
 20 25 30
 Phe Asp Gly Asn Lys Asn Gly Asn Phe Ser Val Arg Glu Ser Gln Glu
 35 40 45
 Asp Ala Gly Thr Thr Tyr Leu Phe Lys Gly Asn Val Thr Leu Glu Asn
 50 55 60
 Ile Pro Gly Thr Gly Thr Ala Ile Thr Lys Ser Cys Phe Asn Asn Thr
 65 70 75 80
 Lys Gly Asp Leu Thr Phe Thr Gly Asn Gly Asn Ser Leu Leu Phe Gln
 85 90 95
 Thr Val Asp Ala Gly Thr Val Ala Gly Ala Ala Val Asn Ser Ser Val
 100 105 110
 Val Asp Lys Ser Thr Thr Phe Ile Gly Phe Ser Ser Leu Ser Phe Ile
 115 120 125

Ala Ser Pro Gly Ser Ser Ile Thr Thr Gly Lys Gly Ala Val Ser Cys
 130 135 140
 Ser Thr Gly Ser Leu Ser Leu Thr Lys Met Ser Val Cys Ser Ser Ala
 145 150 155 160
 Lys Thr Phe Gln Arg Ile Met Ala Val Leu Ser Pro Gln Lys Leu Phe
 165 170 175

His

<210>29

<211>597

<212>PRT

<213>Chlamydia pneumoniae

<400>29

Leu Glu Phe Asp Lys Asn Val Ser Leu Leu Phe Ser Lys Asn Phe Ser
 1 5 10 15
 Thr Asp Asn Gly Ala Ile Thr Ala Lys Thr Leu Ser Leu Thr Gly
 20 25 30
 Thr Thr Met Ser Ala Leu Phe Ser Glu Asn Thr Ser Ser Lys Lys Gly
 35 40 45
 Gly Ala Ile Gln Thr Ser Asp Ala Leu Thr Ile Thr Gly Asn Gln Gly
 50 55 60
 Glu Val Ser Phe Ser Asp Asn Thr Ser Ser Asp Ser Gly Ala Ala Ile
 65 70 75 80
 Phe Thr Glu Ala Ser Val Thr Ile Ser Asn Asn Ala Lys Val Ser Phe
 85 90 95
 Ile Asp Asn Lys Val Thr Gly Ala Ser Ser Ser Thr Thr Gly Asp Met
 100 105 110
 Ser Gly Gly Ala Ile Cys Ala Tyr Lys Thr Ser Thr Asp Thr Lys Val
 115 120 125
 Thr Leu Thr Gly Asn Gln Met Leu Leu Phe Ser Asn Asn Thr Ser Thr
 130 135 140
 Thr Ala Gly Gly Ala Ile Tyr Val Lys Lys Leu Glu Leu Ala Ser Gly
 145 150 155 160
 Gly Leu Thr Leu Phe Ser Arg Asn Ser Val Asn Gly Gly Thr Ala Pro
 165 170 175
 Lys Gly Gly Ala Ile Ala Ile Glu Asp Ser Gly Glu Leu Ser Leu Ser
 180 185 190
 Ala Asp Ser Gly Asp Ile Val Phe Leu Gly Asn Thr Val Thr Ser Thr
 195 200 205
 Thr Pro Gly Thr Asn Arg Ser Ser Ile Asp Leu Gly Thr Ser Ala Lys
 210 215 220
 Met Thr Ala Leu Arg Ser Ala Ala Gly Arg Ala Ile Tyr Phe Tyr Asp
 225 230 235 240
 Pro Ile Thr Thr Gly Ser Ser Thr Thr Val Thr Asp Val Leu Lys Val
 245 250 255
 Asn Glu Thr Pro Ala Asp Ser Ala Leu Gln Tyr Thr Gly Asn Ile Ile
 260 265 270
 Phe Thr Gly Glu Lys Leu Ser Glu Thr Glu Ala Ala Asp Ser Lys Asn
 275 280 285
 Leu Thr Ser Lys Leu Leu Gln Pro Val Thr Leu Ser Gly Gly Thr Leu
 290 295 300
 Ser Leu Lys His Gly Val Thr Leu Gln Thr Gln Ala Phe Thr Gln Gln
 305 310 315 320
 Ala Asp Ser Arg Leu Glu Met Asp Val Gly Thr Thr Leu Glu Pro Ala
 325 330 335
 Asp Thr Ser Thr Ile Asn Asn Leu Val Ile Asn Ile Ser Ser Ile Asp
 340 345 350
 Gly Ala Lys Lys Ala Lys Ile Glu Thr Lys Ala Thr Ser Lys Asn Leu
 355 360 365
 Thr Leu Ser Gly Thr Ile Thr Leu Leu Asp Pro Thr Gly Thr Phe Tyr
 370 375 380
 Glu Asn His Ser Leu Arg Asn Pro Gln Ser Tyr Asp Ile Leu Glu Leu
 385 390 395 400
 Lys Ala Ser Gly Thr Val Thr Ser Thr Ala Val Thr Pro Asp Pro Ile

405 410 415
 Met Gly Glu Lys Phe His Tyr Gly Tyr Gln Gly Thr Trp Gly Pro Ile
 420 425 430
 Val Trp Gly Thr Gly Ala Ser Thr Thr Ala Thr Phe Asn Trp Thr Lys
 435 440 445
 Thr Gly Tyr Ile Pro Asn Pro Glu Arg Ile Gly Ser Leu Val Pro Asn
 450 455 460
 Ser Leu Trp Asn Ala Phe Ile Asp Ile Ser Ser Leu His Tyr Leu Met
 465 470 475 480
 Glu Thr Ala Asn Glu Gly Leu Gln Gly Asp Arg Ala Phe Trp Cys Ala
 485 490 495
 Gly Leu Ser Asn Phe Phe His Lys Asp Ser Thr Lys Thr Arg Arg Gly
 500 505 510
 Phe Arg His Leu Ser Gly Gly Tyr Val Ile Gly Gly Asn Leu His Thr
 515 520 525
 Cys Ser Asp Lys Ile Leu Ser Ala Ala Phe Cys Gln Leu Phe Gly Arg
 530 535 540
 Asp Arg Asp Tyr Phe Val Ala Lys Asn Gln Arg Tyr Ser Leu Arg Arg
 545 550 555 560
 Asn Ser Leu Leu Pro Ala Gln Arg Asn Leu Tyr Leu Ser Ser Leu Gln
 565 570 575
 Thr Thr Ala Leu Phe Val Val Leu Cys Ser Tyr Arg Asp Ser Cys Ser
 580 585 590
 Leu Phe Arg Lys Pro
 595

<210>30

<211>230

<212>PRT

<213>Chlamydia pneumoniae

<400>30

Leu Arg Ile Lys Gly Thr Val Tyr Gly Gly Thr Leu Tyr Tyr Gln His
 1 5 10 15
 Asn Glu Thr Tyr Ile Ser Leu Pro Cys Lys Leu Arg Pro Cys Ser Leu
 20 25 30
 Ser Tyr Val Pro Thr Glu Ile Pro Val Leu Phe Ser Gly Asn Leu Ser
 35 40 45
 Tyr Thr His Thr Asp Asn Asp Leu Lys Thr Lys Tyr Thr Thr Tyr Pro
 50 55 60
 Thr Val Lys Gly Ser Trp Gly Asn Asp Ser Phe Ala Leu Glu Phe Gly
 65 70 75 80
 Gly Arg Ala Pro Ile Cys Leu Asp Glu Ser Ala Leu Phe Glu Gln Tyr
 85 90 95
 Met Pro Phe Met Lys Leu Gln Phe Val Tyr Ala His Gln Glu Gly Phe
 100 105 110
 Lys Glu Gln Gly Thr Glu Ala Arg Glu Phe Gly Ser Ser Arg Leu Val
 115 120 125
 Asn Leu Ala Leu Pro Ile Gly Ile Arg Phe Asp Lys Glu Ser Asp Cys
 130 135 140
 Gln Asp Ala Thr Tyr Asn Leu Thr Leu Gly Tyr Thr Val Asp Leu Val
 145 150 155 160
 Arg Ser Asn Pro Asp Cys Thr Thr Thr Leu Arg Ile Ser Gly Asp Ser
 165 170 175
 Trp Lys Thr Phe Gly Thr Asn Leu Ala Arg Gln Ala Leu Val Leu Arg
 180 185 190
 Ala Gly Asn His Phe Cys Phe Asn Ser Asn Phe Glu Ala Phe Ser Gln
 195 200 205
 Phe Ser Phe Glu Leu Arg Gly Ser Ser Arg Asn Tyr Asn Val Asp Leu
 210 215 220
 Gly Ala Lys Tyr Gln Phe
 225 230

<210>31

<211>427

<212>PRT

<213>Chlamydia pneumoniae

<400>31
 Met Arg Ser Ser Phe Ser Leu Leu Leu Ile Ser Ser Ser Leu Ala Phe
 1 5 10 15
 Pro Leu Leu Met Ser Val Ser Ala Asp Ala Ala Asp Leu Thr Leu Gly
 20 25 30
 Ser Arg Asp Ser Tyr Asn Gly Asp Thr Ser Thr Thr Glu Phe Thr Pro
 35 40 45
 Lys Ala Ala Thr Ser Asp Ala Ser Gly Thr Thr Tyr Ile Leu Asp Gly
 50 55 60
 Asp Val Ser Ile Ser Gln Ala Gly Lys Gln Thr Ser Leu Thr Thr Ser
 65 70 75 80
 Cys Phe Ser Asn Thr Ala Gly Asn Leu Thr Phe Leu Gly Asn Gly Phe
 85 90 95
 Ser Leu His Phe Asp Asn Ile Ile Ser Ser Thr Val Ala Gly Val Val
 100 105 110
 Val Ser Asn Thr Ala Ala Ser Gly Ile Thr Lys Phe Ser Gly Phe Ser
 115 120 125
 Thr Leu Arg Met Leu Ala Ala Pro Arg Thr Thr Gly Lys Gly Ala Ile
 130 135 140
 Lys Ile Thr Asp Gly Leu Val Phe Glu Ser Ile Gly Asn Leu Asp Leu
 145 150 155 160
 Asn Glu Asn Ala Ser Ser Glu Asn Gly Gly Ala Ile Asn Thr Lys Thr
 165 170 175
 Leu Ser Leu Thr Gly Ser Thr Arg Phe Val Ala Phe Leu Gly Asn Ser
 180 185 190
 Ser Ser Gln Gly Gly Ala Ile Tyr Ala Ser Gly Asp Ser Val Ile
 195 200 205
 Ser Glu Asn Ala Gly Ile Leu Ser Phe Gly Asn Asn Ser Ala Thr Thr
 210 215 220
 Ser Gly Gly Ala Ile Ser Ala Glu Gly Asn Leu Val Ile Ser Asn Asn
 225 230 235 240
 Gln Asn Ile Phe Phe Asp Gly Cys Lys Ala Thr Thr Asn Gly Gly Ala
 245 250 255
 Ile Asp Cys Asn Lys Ala Gly Ala Asn Pro Asp Pro Ile Leu Thr Leu
 260 265 270
 Ser Gly Asn Glu Ser Leu His Phe Leu Asn Asn Thr Ala Gly Asn Ser
 275 280 285
 Gly Gly Ala Ile Tyr Thr Lys Lys Leu Val Leu Ser Ser Gly Arg Gly
 290 295 300
 Gly Val Leu Phe Ser Asn Asn Lys Ala Ala Asn Ala Thr Pro Lys Gly
 305 310 315 320
 Gly Ala Ile Ala Ile Leu Asp Ser Gly Glu Ile Ser Ile Ser Ala Asp
 325 330 335
 Leu Gly Asn Ile Ile Phe Glu Gly Asn Thr Thr Ser Thr Thr Gly Ser
 340 345 350
 Pro Ala Ser Val Thr Arg Asn Ala Ile Asp Leu Ala Ser Asn Ala Lys
 355 360 365
 Phe Leu Asn Leu Arg Ala Thr Arg Gly Asn Lys Val Ile Phe Tyr Asp
 370 375 380
 Pro Ile Thr Ser Ser Gly Ala Thr Asp Lys Leu Ser Leu Asn Lys Ala
 385 390 395 400
 Asp Ala Gly Ser Gly Asn Thr Tyr Glu Gly Tyr Ile Val Phe Ser Gly
 405 410 415
 Glu Lys Leu Ser Glu Val Arg Asn Leu Thr Ile
 420 425

<210>32

<211>507

<212>PRT

<213>Chlamydia pneumoniae

<400>32

Arg Leu His Arg Phe Leu Trp Arg Glu Thr Leu Arg Ser Lys Lys Pro
 1 5 10 15
 Asp Asn Leu Lys Ser Thr Phe Thr Gln Ala Val Glu Leu Ala Ala Gly
 20 25 30

Ala Leu Val Leu Lys Asp Gly Val Thr Val Val Ala Asn Thr Ile Thr
 35 40 45
 Gln Val Glu Gly Ser Lys Val Val Met Asp Gly Gly Thr Thr Phe Glu
 50 55 60
 Ala Ser Ala Glu Gly Val Thr Leu Asn Gly Leu Ala Ile Asn Ile Asp
 65 70 75 80
 Ser Leu Asp Gly Thr Asn Lys Ala Ile Ile Lys Ala Thr Ala Ala Ser
 85 90 95
 Lys Asp Val Ala Leu Ser Gly Pro Ile Met Leu Val Asp Ala Gln Gly
 100 105 110
 Asn Tyr Tyr Glu His His Asn Leu Ser Gln Gln Gln Val Phe Ala Leu
 115 120 125
 Ile Glu Leu Ser Ala Gln Gly Thr Met Thr Thr Thr Asp Ile Pro Asp
 130 135 140
 Thr Pro Ile Leu Asn Thr Thr Asn His Tyr Gly Ile Lys Gly Thr Gly
 145 150 155 160
 Ile Ile Val Trp Val Asp Asp Ala Thr Ala Lys Thr Lys Asn Ala Thr
 165 170 175
 Leu Thr Trp Thr Lys Thr Gly Tyr Lys Pro Asn Pro Glu Arg Gln Gly
 180 185 190
 Pro Leu Val Pro Asn Ser Leu Trp Gly Ser Phe Val Asp Val Arg Ser
 195 200 205
 Ile Gln Ser Leu Met Asp Arg Ser Thr Ser Ser Leu Ser Ser Ser Thr
 210 215 220
 Asn Leu Trp Val Ser Gly Ile Ala Asp Phe Leu His Glu Asp Gln Lys
 225 230 235 240
 Gly Asn Gln Arg Ser Tyr Arg His Ser Ser Ala Gly Tyr Ala Leu Gly
 245 250 255
 Gly Gly Phe Phe Thr Ala Ser Glu Asn Phe Phe Asn Phe Ala Phe Cys
 260 265 270
 Gln Leu Phe Gly Tyr Asp Lys Asp His Leu Val Ala Lys Asn His Thr
 275 280 285
 His Val Tyr Ala Gly Ala Met Ser Tyr Arg His Leu Gly Glu Ser Lys
 290 295 300
 Thr Leu Ala Lys Ile Leu Ser Gly Asn Ser Asp Ser Leu Pro Phe Val
 305 310 315 320
 Phe Asn Ala Arg Phe Ala Tyr Gly His Thr Asp Asn Asn Met Thr Thr
 325 330 335
 Lys Tyr Thr Gly Tyr Ser Pro Val Lys Gly Ser Trp Gly Asn Asp Ala
 340 345 350
 Phe Gly Ile Glu Cys Gly Gly Ala Ile Pro Val Val Ala Ser Gly Arg
 355 360 365
 Arg Ser Trp Val Asp Thr His Thr Pro Phe Leu Asn Leu Glu Met Ile
 370 375 380
 Tyr Ala His Gln Asn Asp Phe Lys Glu Asn Gly Thr Glu Gly Arg Ser
 385 390 395 400
 Phe Gln Ser Glu Asp Leu Phe Asn Leu Ala Val Pro Val Gly Ile Lys
 405 410 415
 Phe Glu Lys Phe Ser Asp Lys Ser Thr Tyr Asp Leu Ser Ile Ala Tyr
 420 425 430
 Val Pro Asp Val Ile Arg Asn Asp Pro Gly Cys Thr Thr Thr Leu Met
 435 440 445
 Val Ser Gly Asp Ser Trp Ser Thr Cys Gly Thr Ser Leu Ser Arg Gln
 450 455 460
 Ala Leu Leu Val Arg Ala Gly Asn His His Ala Phe Ala Ser Asn Phe
 465 470 475 480
 Glu Val Phe Ser Gln Phe Glu Val Glu Leu Arg Gly Ser Ser Arg Ser
 485 490 495
 Tyr Ala Ile Asp Leu Gly Gly Arg Phe Gly Phe
 500 505

<210>33

<211>494

<212>PRT

<213>Chlamydia pneumoniae

<400>33

Met Lys Thr Ser Val Ser Met Leu Leu Ala Leu Leu Cys Ser Gly Ala
 1 5 10 15
 Ser Ser Ile Val Leu His Ala Ala Thr Thr Pro Leu Asn Pro Glu Asp
 20 25 30
 Gly Phe Ile Gly Glu Gly Asn Thr Asn Thr Phe Ser Pro Lys Ser Thr
 35 40 45
 Thr Asp Ala Ala Gly Thr Thr Tyr Ser Leu Thr Gly Glu Val Leu Tyr
 50 55 60
 Ile Asp Pro Gly Lys Gly Gly Ser Ile Thr Gly Thr Cys Phe Val Glu
 65 70 75 80
 Thr Ala Gly Asp Leu Thr Phe Leu Gly Asn Gly Asn Thr Leu Lys Phe
 85 90 95
 Leu Ser Val Asp Ala Gly Ala Asn Ile Ala Val Ala His Val Gln Gly
 100 105 110
 Ser Lys Asn Leu Ser Phe Thr Asp Phe Leu Ser Leu Val Ile Thr Glu
 115 120 125
 Ser Pro Lys Ser Ala Val Thr Thr Gly Lys Gly Ser Leu Val Ser Leu
 130 135 140
 Gly Ala Val Gln Leu Gln Asp Ile Asn Thr Leu Val Leu Thr Ser Asn
 145 150 155 160
 Ala Ser Val Glu Asp Gly Gly Val Ile Lys Gly Asn Ser Cys Leu Ile
 165 170 175
 Gln Gly Ile Lys Asn Ser Ala Ile Phe Gly Gln Asn Thr Ser Ser Lys
 180 185 190
 Lys Gly Gly Ala Ile Ser Thr Thr Gln Gly Leu Thr Ile Glu Asn Asn
 195 200 205
 Leu Gly Thr Leu Lys Phe Asn Glu Asn Lys Ala Val Thr Ser Gly Gly
 210 215 220
 Ala Leu Asp Leu Gly Ala Ala Ser Thr Phe Thr Ala Asn His Glu Leu
 225 230 235 240
 Ile Phe Ser Gln Asn Lys Thr Ser Gly Asn Ala Ala Asn Gly Gly Ala
 245 250 255
 Ile Asn Cys Ser Gly Asp Leu Thr Phe Thr Asp Asn Thr Ser Leu Leu
 260 265 270
 Leu Gln Glu Asn Ser Thr Met Gln Asp Gly Gly Ala Leu Cys Ser Thr
 275 280 285
 Gly Thr Ile Ser Ile Thr Gly Ser Asp Ser Ile Asn Val Ile Gly Asn
 290 295 300
 Thr Ser Gly Gln Lys Gly Gly Ala Ile Ser Ala Ala Ser Leu Lys Ile
 305 310 315 320
 Leu Gly Gly Gln Gly Gly Ala Leu Phe Ser Asn Asn Val Val Thr His
 325 330 335
 Ala Thr Pro Leu Gly Gly Ala Ile Phe Ile Asn Thr Gly Gly Ser Leu
 340 345 350
 Gln Leu Phe Thr Gln Gly Gly Asp Ile Val Phe Glu Gly Asn Gln Val
 355 360 365
 Thr Thr Thr Ala Pro Asn Ala Thr Thr Lys Arg Asn Val Ile His Leu
 370 375 380
 Glu Ser Thr Ala Lys Trp Thr Gly Leu Ala Ala Ser Gln Gly Asn Ala
 385 390 395 400
 Ile Tyr Phe Tyr Asp Pro Ile Thr Thr Asn Asp Thr Gly Ala Ser Asp
 405 410 415
 Asn Leu Arg Ile Asn Glu Val Ser Ala Asn Gln Lys Leu Ser Gly Ser
 420 425 430
 Ile Val Phe Ser Gly Glu Arg Leu Ser Thr Ala Glu Ala Ile Ala Glu
 435 440 445
 Asn Leu Thr Ser Arg Ile Asn Gln Pro Val Thr Leu Val Glu Gly Ser
 450 455 460
 Leu Val Leu Lys Gln Gly Val Thr Leu Ile Thr Gln Gly Phe Ser Gln
 465 470 475 480
 Glu Pro Glu Ser Thr Leu Leu Leu Asp Leu Gly Thr Ser Leu
 485 490

<210>34

<211>86

<212>PRT

<213>Chlamydia pneumoniae

<400>34

Met Val Ser Ala Phe Ile Asp Lys Phe Val Met Thr Ile Ser Ser Val
 1 5 10 15
 Glu Ala Tyr Asn Glu Val Pro Arg Ser Lys Arg Ser Val Asp Ser Gly
 20 25 30
 Ser Cys Glu Asn Pro Cys Val Ile Lys Val Thr Pro Cys Leu Ser Thr
 35 40 45
 Lys Leu Pro Ser Thr Lys Val Thr Gly Trp Leu Ile Leu Glu Val Arg
 50 55 60
 Phe Ser Ala Ile Ala Ser Ala Val Asp Asn Leu Ser Pro Glu Asn Thr
 65 70 75 80
 Ile Asp Pro Glu Ser Phe
 85

<210>35

<211>450

<212>PRT

<213>Chlamydia pneumoniae

<400>35

Ala Ser Thr Glu Asp Ile Val Ile Thr Asn Leu Ser Ile Asn Ala Asp
 1 5 10 15
 Thr Ile Tyr Gly Lys Asn Pro Ile Asn Ile Val Ala Ser Ala Ala Asn
 20 25 30
 Lys Asn Ile Thr Leu Thr Gly Thr Leu Ala Leu Val Asn Ala Asp Gly
 35 40 45
 Ala Phe Tyr Glu Asn His Thr Leu Gln Asp Ser Gln Asp Tyr Ser Phe
 50 55 60
 Val Lys Leu Ser Pro Gly Ala Gly Gly Thr Ile Ile Thr Gln Asp Ala
 65 70 75 80
 Ser Gln Lys Pro Leu Glu Val Ala Pro Ser Arg Pro His Tyr Gly Tyr
 85 90 95
 Gln Gly His Trp Asn Val Gln Val Ile Pro Gly Thr Gly Thr Gln Pro
 100 105 110
 Ser Gln Ala Asn Leu Glu Trp Val Arg Thr Gly Tyr Leu Pro Asn Pro
 115 120 125
 Glu Arg Gln Gly Ser Leu Val Pro Asn Ser Leu Trp Gly Ser Phe Val
 130 135 140
 Asp Gln Arg Ala Ile Gln Glu Ile Met Val Asn Ser Ser Gln Ile Leu
 145 150 155 160
 Cys Gln Glu Arg Gly Val Trp Gly Ala Gly Ile Ala Asn Phe Leu His
 165 170 175
 Arg Asp Lys Ile Asn Glu His Arg Tyr Arg His Ser Gly Val Gly Tyr
 180 185 190
 Leu Val Gly Val Gly Thr His Ala Phe Ser Asp Ala Thr Ile Asn Ala
 195 200 205
 Ala Phe Cys Gln Leu Phe Ser Arg Asp Lys Asp Tyr Val Val Ser Lys
 210 215 220
 Asn His Gly Thr Ser Tyr Ser Gly Val Val Phe Leu Glu Asp Thr Leu
 225 230 235 240
 Glu Phe Arg Ser Pro Gln Gly Phe Tyr Thr Asp Ser Ser Ser Glu Ala
 245 250 255
 Cys Cys Asn Gln Val Val Thr Ile Asp Met Gln Leu Ser Tyr Ser His
 260 265 270
 Arg Asn Asn Asp Met Lys Thr Lys Tyr Thr Thr Tyr Pro Glu Ala Gln
 275 280 285
 Gly Ser Trp Ala Asn Asp Val Phe Gly Leu Glu Phe Gly Ala Thr Thr
 290 295 300
 Tyr Tyr Tyr Pro Asn Ser Thr Phe Leu Phe Asp Tyr Tyr Ser Pro Phe
 305 310 315 320
 Leu Arg Leu Gln Cys Thr Tyr Ala His Gln Glu Asp Phe Lys Glu Thr
 325 330 335
 Gly Gly Glu Val Arg His Phe Thr Ser Gly Asp Leu Phe Asn Leu Ala

340 345 350
 Val Pro Ile Gly Val Lys Phe Glu Arg Phe Ser Asp Cys Lys Arg Gly
 355 360 365
 Ser Tyr Glu Leu Thr Phe Ala Tyr Val Pro Asp Val Ile Arg Lys Asp
 370 375 380
 Pro Lys Ser Thr Ala Thr Leu Ala Ser Gly Ala Thr Trp Ser Thr His
 385 390 395 400
 Gly Asn Asn Leu Ser Arg Gln Gly Leu Gln Leu Arg Leu Gly Asn His
 405 410 415
 Cys Leu Ile Asn Pro Gly Ile Glu Val Phe Ser His Gly Ala Ile Glu
 420 425 430
 Leu Arg Gly Ser Ser Arg Asn Tyr Asn Ile Asn Leu Gly Gly Lys Tyr
 435 440 445
 Arg Phe
 450
 <210>36
 <211>661
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>36
 Lys Leu Trp Ser Asn Pro Asn Leu Arg Leu Met Lys Arg Cys Phe Leu
 1 5 10 15
 Phe Leu Ala Ser Phe Val Leu Met Gly Ser Ser Ala Asp Ala Leu Thr
 20 25 30
 His Gln Glu Ala Val Lys Lys Lys Asn Ser Tyr Leu Ser His Phe Lys
 35 40 45
 Ser Val Ser Gly Ile Val Thr Ile Glu Asp Gly Val Leu Asn Ile His
 50 55 60
 Asn Asn Leu Arg Ile Gln Ala Asn Lys Val Tyr Val Glu Asn Thr Val
 65 70 75 80
 Gly Gln Ser Leu Lys Leu Val Ala His Gly Asn Val Met Val Asn Tyr
 85 90 95
 Arg Ala Lys Thr Leu Val Cys Asp Tyr Leu Glu Tyr Tyr Glu Asp Thr
 100 105 110
 Asp Ser Cys Leu Leu Thr Asn Gly Arg Phe Ala Met Tyr Pro Trp Phe
 115 120 125
 Leu Gly Gly Ser Met Ile Thr Leu Thr Pro Glu Thr Ile Val Ile Arg
 130 135 140
 Lys Gly Tyr Ile Ser Thr Ser Glu Gly Pro Lys Lys Asp Leu Cys Leu
 145 150 155 160
 Ser Gly Asp Tyr Leu Glu Tyr Ser Ser Asp Ser Leu Leu Ser Ile Gly
 165 170 175
 Lys Thr Thr Leu Arg Val Cys Arg Ile Pro Ile Leu Phe Leu Pro Pro
 180 185 190
 Phe Ser Ile Met Pro Met Glu Ile Pro Lys Pro Pro Ile Asn Phe Arg
 195 200 205
 Gly Gly Thr Gly Gly Phe Leu Gly Ser Tyr Leu Gly Met Ser Tyr Ser
 210 215 220
 Pro Ile Ser Arg Lys His Phe Ser Ser Thr Phe Phe Leu Asp Ser Phe
 225 230 235 240
 Phe Lys His Gly Val Gly Met Gly Phe Asn Leu His Cys Ser Gln Lys
 245 250 255
 Gln Val Pro Glu Asn Val Phe Asn Met Lys Ser Tyr Tyr Ala His Arg
 260 265 270
 Leu Ala Ile Asp Met Ala Glu Ala His Asp Arg Tyr Arg Leu His Gly
 275 280 285
 Asp Phe Cys Phe Thr His Lys His Val Asn Phe Ser Gly Glu Tyr His
 290 295 300
 Leu Ser Asp Ser Trp Glu Thr Val Ala Asp Ile Phe Pro Asn Asn Phe
 305 310 315 320
 Met Leu Lys Asn Thr Gly Pro Thr Arg Val Asp Cys Thr Trp Asn Asp
 325 330 335
 Asn Tyr Phe Glu Gly Tyr Leu Thr Ser Ser Val Lys Val Asn Ser Phe
 340 345 350

Gln Asn Ala Asn Gln Glu Leu Pro Tyr Leu Thr Leu Arg Gln Tyr Pro
 355 360 365
 Ile Ser Ile Tyr Asn Thr Gly Val Tyr Leu Glu Asn Ile Val Glu Cys
 370 375 380
 Gly Tyr Leu Asn Phe Ala Phe Ser Asp His Ile Val Gly Glu Asn Phe
 385 390 395 400
 Ser Ser Leu Arg Leu Ala Ala Arg Pro Lys Leu His Lys Thr Val Pro
 405 410 415
 Leu Pro Ile Gly Thr Leu Ser Ser Thr Leu Gly Ser Ser Leu Ile Tyr
 420 425 430
 Tyr Ser Asp Val Pro Glu Ile Ser Ser Arg His Ser Gln Leu Ser Ala
 435 440 445
 Lys Leu Gln Leu Asp Tyr Arg Phe Leu Leu His Lys Ser Tyr Ile Gln
 450 455 460
 Arg Arg His Ile Ile Glu Pro Phe Val Thr Phe Ile Thr Glu Thr Arg
 465 470 475 480
 Pro Leu Ala Lys Asn Glu Asp His Tyr Ile Phe Ser Ile Gln Asp Ala
 485 490 495
 Phe His Ser Leu Asn Leu Leu Lys Ala Gly Ile Asp Thr Ser Val Leu
 500 505 510
 Ser Lys Thr Asn Pro Arg Phe Pro Arg Ile His Ala Lys Leu Trp Thr
 515 520 525
 Thr His Ile Leu Ser Asn Thr Glu Ser Lys Pro Thr Phe Pro Lys Thr
 530 535 540
 Ala Cys Glu Leu Ser Leu Pro Phe Gly Lys Lys Asn Thr Val Ser Leu
 545 550 555 560
 Asp Ala Glu Trp Ile Trp Lys Lys His Cys Trp Asp His Met Asn Ile
 565 570 575
 Arg Trp Glu Trp Ile Gly Asn Asp Asn Val Ala Met Thr Leu Glu Ser
 580 585 590
 Leu His Arg Ser Lys Tyr Ser Leu Ile Lys Cys Asp Arg Glu Asn Phe
 595 600 605
 Ile Leu Asp Val Ser Arg Pro Ile Asp Gln Leu Leu Asp Ser Pro Leu
 610 615 620
 Ser Asp His Arg Asn Leu Ile Leu Gly Lys Leu Phe Val Arg Pro His
 625 630 635 640
 Pro Cys Trp Asn Tyr Arg Leu Ser Leu Arg Tyr Gly Trp His Arg Arg
 645 650 655
 Thr Leu Arg Thr Thr
 660

<210>37

<211>245

<212>PRT

<213>Chlamydia pneumoniae

<400>37

Glu Gln Arg Ser Lys Leu Asn Val Ala Leu Ala Leu Leu Glu Leu Gly
 1 5 10 15
 Cys Asp Thr Pro Lys Leu Leu Glu Tyr Ile Thr Glu Arg Leu Val Gln
 20 25 30
 Pro His Tyr Asn Glu Thr Leu Ala Leu Ser Phe Ser Lys Gly Arg Thr
 35 40 45
 Leu Gln Asn Trp Lys Arg Val Asn Ile Ile Val Pro Gln Asp Pro Gln
 50 55 60
 Glu Arg Glu Arg Leu Leu Ser Thr Thr Arg Gly Leu Glu Glu Gln Ile
 65 70 75 80
 Leu Thr Phe Leu Phe Arg Leu Pro Lys Glu Ala Tyr Leu Pro Cys Ile
 85 90 95
 Tyr Lys Leu Leu Ala Ser Gln Lys Thr Gln Leu Ala Thr Thr Ala Ile
 100 105 110
 Ser Phe Leu Ser His Thr Ser His Gln Glu Ala Leu Asp Leu Leu Phe
 115 120 125
 Gln Ala Ala Lys Leu Pro Gly Glu Pro Ile Ile Arg Ala Tyr Ala Asp
 130 135 140
 Leu Ala Ile Tyr Asn Leu Thr Lys Asp Pro Glu Lys Lys Arg Ser Leu

145 150 155 160
 His Asp Tyr Ala Lys Lys Leu Ile Gln Glu Thr Leu Leu Phe Val Asp
 165 170 175
 Thr Glu Asn Gln Arg Pro His Pro Ser Met Pro Tyr Leu Arg Tyr Gln
 180 185 190
 Val Thr Pro Glu Ser Arg Thr Lys Leu Met Leu Asp Ile Leu Glu Thr
 195 200 205
 Leu Ala Thr Ser Lys Ser Ser Glu Asp Ile Arg Leu Leu Ile Gln Leu
 210 215 220
 Met Thr Glu Gly Asp Ala Lys Asn Phe Pro Val Leu Ala Gly Leu Leu
 225 230 235 240
 Ile Lys Ile Val Glu
 245

<210>38

<211>348

<212>PRT

<213>Chlamydia pneumoniae

<400>38

Cys Ser Arg Ser Pro Tyr Pro Asn Ile Glu Ile Leu Ala Arg Gly Val
 1 5 10 15
 Glu His Arg Ser Met Gly Leu Phe His Leu Thr Leu Phe Gly Leu Leu
 20 25 30
 Leu Cys Ser Leu Pro Ile Ser Leu Val Ala Lys Phe Pro Glu Ser Val
 35 40 45
 Gly His Lys Ile Leu Tyr Ile Ser Thr Gln Ser Thr Gln Gln Ala Leu
 50 55 60
 Ala Thr Tyr Leu Glu Ala Leu Asp Ala Tyr Gly Asp His Asp Phe Phe
 65 70 75 80
 Val Leu Arg Lys Ile Gly Glu Asp Tyr Leu Lys Gln Ser Ile His Ser
 85 90 95
 Ser Asp Pro Gln Thr Arg Lys Ser Thr Ile Ile Gly Ala Gly Leu Ala
 100 105 110
 Gly Ser Ser Glu Ala Leu Asp Val Leu Ser Gln Ala Met Glu Thr Ala
 115 120 125
 Asp Pro Leu Gln Gln Leu Leu Val Leu Ser Ala Val Ser Gly His Leu
 130 135 140
 Gly Lys Thr Ser Asp Asp Leu Leu Phe Lys Ala Leu Ala Ser Pro Tyr
 145 150 155 160
 Pro Val Ile Arg Leu Glu Ala Ala Tyr Arg Leu Ala Asn Leu Lys Asn
 165 170 175
 Thr Lys Val Ile Asp His Leu His Ser Phe Ile His Lys Leu Pro Glu
 180 185 190
 Glu Ile Gln Cys Leu Ser Ala Ala Ile Phe Leu Arg Leu Glu Thr Glu
 195 200 205
 Glu Ser Asp Ala Tyr Ile Arg Asp Leu Leu Ala Ala Lys Lys Ser Ala
 210 215 220
 Ile Arg Ser Ala Thr Ala Leu Gln Ile Gly Glu Tyr Gln Gln Lys Arg
 225 230 235 240
 Phe Leu Pro Thr Leu Arg Asn Leu Leu Thr Ser Ala Ser Pro Gln Asp
 245 250 255
 Gln Glu Ala Ile Leu Tyr Ala Leu Gly Lys Leu Lys Asp Gly Gln Ser
 260 265 270
 Tyr Tyr Asn Ile Lys Lys Gln Leu Gln Lys Pro Asp Val Asp Val Thr
 275 280 285
 Leu Ala Ala Ala Gln Ala Leu Ile Ala Leu Gly Lys Glu Glu Asp Ala
 290 295 300
 Leu Pro Val Ile Lys Lys Gln Ala Leu Glu Glu Arg Pro Arg Ala Leu
 305 310 315 320
 Tyr Ala Leu Arg His Leu Pro Ser Glu Ile Gly Ile Pro Ile Ala Leu
 325 330 335
 Pro Ile Phe Leu Lys Thr Lys Asn Ser Glu Ala Ser
 340 345

<210>39

<211>196

<212>PRT

<213>Chlamydia pneumoniae

<400>39

Met Ser Leu Pro Leu Val Leu Gly Ser Ser Ser Pro Arg Arg Lys Phe
 1 5 10 15
 Ile Leu Glu Lys Phe Arg Val Pro Phe Thr Val Ile Pro Ser Asn Phe
 20 25 30
 Asp Glu Ser Lys Val Ser Tyr Ser Gly Asp Pro Ile Ala Tyr Thr Gln
 35 40 45
 Glu Leu Ala Ala Gln Lys Ala Tyr Ala Val Ser Glu Leu His Ser Pro
 50 55 60
 Cys Asp Cys Ile Ile Leu Thr Gly Asp Thr Ile Val Ser Tyr Asp Gly
 65 70 75 80
 Arg Ile Phe Thr Lys Pro Gln Xaa Lys Ala Xaa Ala Ile Gln Met Leu
 85 90 95
 Lys Thr Leu Arg Asn Gln Thr His Asp Val Val Thr Ser Ile Ala Val
 100 105 110
 Leu His Lys Gly Lys Leu Leu Thr Gly Ser Glu Thr Ser Gln Ile Ser
 115 120 125
 Leu Thr Met Ile Pro Asp His Arg Ile Glu Ser Tyr Ile Asp Thr Val
 130 135 140
 Gly Thr Leu Asn Asn Cys Gly Ala Tyr Asp Val Cys His Gly Gly Leu
 145 150 155 160
 Ile Leu Lys Lys Val His Gly Cys Val Tyr Asn Val Gln Gly Leu Pro
 165 170 175
 Ile Gln Thr Leu Lys Tyr Leu Leu Glu Leu Asn Ile Asp Leu Trp
 180 185 190
 Asp Tyr Ser Ile
 195

<210>40

<211>127

<212>PRT

<213>Chlamydia pneumoniae

<400>40

Val Xaa Arg Asn Arg Lys Thr Gly Ile Asn Asp Gln Glu Ile Arg Ser
 1 5 10 15
 Val Leu Gly Lys Met Leu Phe Gly Gly Asp Asp Ala Phe Lys Gln Ile
 20 25 30
 Gln Ala Leu Ser Gly Gly Glu Thr Ala Arg Leu Leu Met Ala Gly Met
 35 40 45
 Met Leu Glu Asn His Asn Val Leu Ile Leu Asp Glu Ala Asn Asn His
 50 55 60
 Leu Asp Leu Glu Ser Val Ser Ala Leu Ser Trp Ala Ile Asn Asp Tyr
 65 70 75 80
 Lys Gly Thr Ala Ile Phe Val Ser His Asp Arg Gly Leu Ile Gln Asp
 85 90 95
 Cys Ala Thr Lys Leu Leu Ile Phe Asp Lys Asp Lys Ile Thr Phe Phe
 100 105 110
 Asp Gly Thr Met Val Asp Tyr Thr Ala Gly His Lys Gln Leu Leu
 115 120 125

<210>41

<211>432

<212>PRT

<213>Chlamydia pneumoniae

<400>41

Leu Tyr Ser Lys Gln His Phe Val Met Leu Ser Ala Met Ser Ile Val
 1 5 10 15
 Leu Asp Lys Ile Gly Lys Ser Leu Gly Thr Arg Ile Leu Phe Asp Asp
 20 25 30
 Val Ser Val Val Phe Asn Pro Gly Asn Cys Tyr Gly Leu Thr Gly Pro
 35 40 45
 Asn Gly Ala Gly Lys Ser Thr Leu Leu Lys Ile Ile Met Gly Met Ile
 50 55 60
 Glu Pro Thr Arg Gly Ser Ile Ser Leu Pro Lys Lys Val Gly Ile Leu

65	70	75	80
Arg Gln Asn Ile Asp Ser Phe His Asp Thr Thr Val Leu Asp Cys Val			
	85	90	95
Ile Met Gly Asn Thr Arg Leu Trp Glu Ala Leu Gln Arg Arg Asp Asn			
	100	105	110
Leu Tyr Leu Gln Glu Phe Thr Asp Ala Ile Gly Met Glu Leu Gly Glu			
	115	120	125
Ile Glu Glu Ile Ile Gly Glu Glu Asn Gly Tyr Arg Ala Asp Ser Glu			
	130	135	140
Ala Glu Glu Leu Leu Thr Gly Ile Gly Ile Pro Asn Glu Met Phe Asp			
145	150	155	160
Lys Lys Met Ala Met Ile Pro Ile Asp Leu Gln Phe Arg Val Leu Leu			
	165	170	175
Cys Gln Ala Leu Phe Gly His Pro Glu Ala Leu Leu Leu Asp Glu Pro			
	180	185	190
Thr Asn His Leu Asp Leu Tyr Ser Ile Asn Trp Leu Gly Asn Phe Leu			
	195	200	205
Lys Asp Tyr Glu Gly Thr Val Ile Val Val Ser His Asp Arg His Phe			
	210	215	220
Leu Asn Thr Ile Thr Thr His Ile Ala Asp Ile Asp Tyr Asp Thr Ile			
225	230	235	240
Ile Ile Tyr Pro Gly Asn Tyr Asp Asp Met Val Glu Met Lys Thr Ala			
	245	250	255
Ser Arg Glu Gln Glu Lys Ala Asp Ile Lys Ser Lys Glu Lys Lys Ile			
	260	265	270
Ser Gln Leu Lys Glu Phe Val Ala Lys Phe Gly Ala Gly Ser Arg Ala			
	275	280	285
Ser Gln Val Gln Ser Arg Leu Arg Glu Ile Lys Lys Leu Gln Pro Gln			
	290	295	300
Glu Leu Lys Lys Ser Asn Ile Gln Arg Pro Tyr Ile Arg Phe Pro Leu			
305	310	315	320
Ser Asp Lys Ser Ser Gly Lys Val Val Leu Ser Leu Glu Ala Ile Thr			
	325	330	335
Lys Asp Tyr Gly Asp His Gln Val Ile His Pro Phe Ser Leu Glu Ile			
	340	345	350
Tyr Gln Gly Asp Lys Leu Gly Ile Ile Gly Asn Asn Gly Leu Gly Lys			
	355	360	365
Thr Thr Leu Met Lys Leu Leu Ala Gly Val Glu Ala Pro Ser Ser Gly			
	370	375	380
Ser Ile Lys Leu Gly His Gln Ala Ile Cys Ser Tyr Phe Pro Gln Asn			
385	390	395	400
His Ser Asp Val Leu Ala Asp Cys Gly Gln Glu Thr Leu Phe Glu Xaa			
	405	410	415
Tyr Ala Ile Ala Lys Pro Glu Leu Thr Ile Lys Lys Ser Ala Val Cys			
	420	425	430

<210>42

<211>131

<212>PRT

<213>Chlamydia pneumoniae

<400>42

Arg Glu Val Met Ile Ala Ser Ile Tyr Ser Phe Leu Asp Tyr Leu Lys			
1	5	10	15
Met Val Lys Ser Ala Ser Pro His Thr Leu Arg Asn Tyr Cys Leu Asp			
	20	25	30
Leu Asn Gly Leu Lys Ile Phe Leu Xaa Glu Arg Gly Asn Leu Ala Pro			
	35	40	45
Ser Ser Pro Leu Gln Leu Ala Thr Glu Lys Arg Lys Val Ser Glu Leu			
	50	55	60
Pro Phe Ser Leu Phe Thr Lys Glu His Val Arg Met Tyr Ile Ala Lys			
65	70	75	80
Leu Ile Glu Asn Gly Lys Ala Lys Arg Thr Ile Lys Arg Cys Leu Ser			
	85	90	95
Ser Ile Lys Ser Phe Ala His Tyr Cys Val Ile Gln Lys Ile Leu Leu			
	100	105	110

Glu Asn Leu Arg Lys Leu Ser Thr Asp Leu Val Phe Leu Arg Ser Cys
 115 120 125
 Leu Pro Arg
 130
 <210>43
 <211>307
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>43
 Met Ser Ser Arg Glu Leu Ile Ile Leu Gly Cys Ser Ser Gln Gln Pro
 1 5 10 15
 Thr Arg Thr Arg Asn Gln Gly Ala Tyr Leu Phe Arg Trp Asn Gly Glu
 20 25 30
 Gly Leu Leu Phe Asp Pro Gly Glu Gly Thr Gln Arg Gln Phe Ile Phe
 35 40 45
 Ala Asn Ile Ala Pro Thr Thr Val Asn Arg Ile Phe Val Ser His Phe
 50 55 60
 His Gly Asp His Cys Leu Gly Leu Gly Ser Met Leu Met Arg Leu Asn
 65 70 75 80
 Leu Asp Lys Val Ser His Pro Ile His Cys Tyr Tyr Pro Ala Ser Gly
 85 90 95
 Lys Lys Tyr Phe Asp Arg Leu Arg Tyr Gly Thr Ile Tyr His Glu Thr
 100 105 110
 Ile Gln Val Val Glu His Pro Ile Ser Glu Glu Gly Ile Val Glu Asp
 115 120 125
 Phe Gly Ser Phe Arg Ile Glu Ala Gln Arg Leu Gln His Gln Val Asp
 130 135 140
 Thr Leu Gly Trp Arg Ile Thr Glu Pro Asp Thr Ile Lys Phe Leu Pro
 145 150 155 160
 Lys Glu Leu Glu Ser Arg Gly Ile Arg Gly Leu Ile Ile Gln Asp Leu
 165 170 175
 Ile Arg Asp Gln Glu Ile Ser Ile Gly Gly Ser Thr Val Tyr Leu Ser
 180 185 190
 Asp Val Ser Tyr Val Arg Lys Gly Asp Ser Ile Ala Ile Ile Ala Asp
 195 200 205
 Thr Leu Pro Cys Gln Ala Ala Ile Asp Leu Ala Lys Asn Ser Cys Met
 210 215 220
 Met Leu Cys Glu Ser Thr Tyr Leu Glu Gln His Arg His Leu Ala Glu
 225 230 235 240
 Ser His Phe His Met Thr Ala Lys Gln Ala Ala Thr Leu Ala Lys Arg
 245 250 255
 Ala Ala Thr Gln Lys Leu Ile Leu Thr His Phe Ser Ala Arg Tyr Leu
 260 265 270
 Asn Leu Asp Asp Phe Tyr Lys Glu Ala Ser Ala Val Phe Pro Asn Val
 275 280 285
 Ser Val Ala Gln Glu Tyr Arg Ser Tyr Pro Phe Pro Lys Asn Pro Leu
 290 295 300
 Leu Asn Lys
 305
 <210>44
 <211>440
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>44
 Ala Phe Gln Arg Ile Lys Arg Lys Tyr His Leu Ser Cys Arg Pro Ser
 1 5 10 15
 Arg Ser Trp Glu Asn Lys His Arg Ala His Ile Ala Lys Val Leu His
 20 25 30
 Arg Lys Phe Phe Arg Phe Ser Val Gly Gly Met Arg Asp Glu Ala Glu
 35 40 45
 Ile Lys Gly His Arg Arg Thr Tyr Ile Gly Ala Met Pro Gly Lys Met
 50 55 60
 Val Gln Ala Leu Lys Gln Ser Gln Ala Met Asn Pro Val Ile Met Ile
 65 70 75 80

Asp Glu Val Asp Lys Ile Gly Ala Ser Tyr His Gly Asp Pro Ala Ser
 85 90 95
 Ala Leu Leu Glu Val Leu Asp Pro Glu Gln Asn Lys Asp Phe Leu Asp
 100 105 110
 His Tyr Leu Asp Val Arg Val Asp Leu Ser Asn Val Leu Phe Ile Leu
 115 120 125
 Thr Ala Asn Val Leu Asp Thr Ile Pro Asp Pro Leu Leu Asp Arg Met
 130 135 140
 Glu Ile Leu Arg Leu Ser Gly Tyr Ile Leu Glu Glu Lys Leu Gln Ile
 145 150 155 160
 Ala Lys Lys Tyr Leu Val Pro Lys Ala Arg Lys Glu Ile Gly Leu Thr
 165 170 175
 Ala Ser Glu Val Asn Phe Gln Pro Glu Ala Leu Lys Tyr Met Ile Asn
 180 185 190
 Asn Tyr Ala Arg Glu Ala Gly Val Arg Thr Leu Asn Gly Asn Ile Lys
 195 200 205
 Lys Val Leu Arg Lys Val Ala Leu Lys Ile Val Gln Asn Gln Glu Lys
 210 215 220
 Pro Lys Ser Lys Lys Ile Thr Phe Lys Ile Ser Ser Lys Asn Leu Gln
 225 230 235 240
 Thr Tyr Leu Gly Lys Pro Ile Phe Ser Ser Asp Arg Phe Tyr Glu Ser
 245 250 255
 Thr Pro Val Gly Val Ala Thr Gly Leu Ala Trp Thr Ser Leu Gly Gly
 260 265 270
 Ala Thr Leu Tyr Ile Glu Ser Val Gln Val Ser Ser Leu Lys Thr Asp
 275 280 285
 Met His Leu Thr Gly Gln Ala Gly Glu Val Met Lys Glu Ser Ser Gln
 290 295 300
 Ile Ala Trp Thr Tyr Leu His Ser Ala Leu His Arg Tyr Ala Pro Gly
 305 310 315 320
 Tyr Thr Phe Phe Pro Lys Ser Gln Val His Ile His Ile Pro Glu Gly
 325 330 335
 Ala Thr Pro Lys Asp Gly Pro Ser Ala Gly Ile Thr Met Val Thr Ser
 340 345 350
 Leu Leu Ser Leu Leu Leu Glu Thr Pro Val Val Asn Asn Leu Gly Met
 355 360 365
 Thr Gly Glu Ile Thr Leu Thr Gly Arg Val Leu Gly Val Gly Gly Ile
 370 375 380
 Arg Glu Lys Leu Ile Ala Ala Arg Arg Ser Arg Leu Asn Ile Leu Ile
 385 390 395 400
 Phe Pro Glu Asp Asn Arg Arg Asp Tyr Glu Glu Leu Pro Ala Tyr Leu
 405 410 415
 Lys Thr Gly Leu Lys Ile His Phe Val Ser His Tyr Asp Asp Val Leu
 420 425 430
 Lys Val Ala Phe Pro Lys Leu Lys
 435 440

<210>45

<211>424

<212>PRT

<213>Chlamydia pneumoniae

<400>45

Pro Ser Ile Arg Thr Ile Val Asp Ser Thr Thr Asn Ser Asp Ser Pro
 1 5 10 15
 Ile Leu Asp Pro Asn Pro Glu Asp Val Glu Lys Leu Leu Asp Glu Ser
 20 25 30
 Glu Glu Glu Ser Glu Asp Gln Ser Thr Glu Arg Leu Leu Pro Ser Glu
 35 40 45
 Leu Phe Ile Leu Pro Leu Asn Lys Arg Pro Phe Phe Pro Gly Met Ala
 50 55 60
 Ala Pro Ile Leu Ile Glu Ser Gly Pro Tyr Tyr Glu Val Leu Lys Val
 65 70 75 80
 Leu Ala Lys Ser Ser Gln Lys Tyr Ile Gly Leu Val Leu Thr Lys Lys
 85 90 95
 Glu Asn Ala Asp Ile Leu Lys Val Ser Phe Asn Gln Leu His Lys Thr

100 105 110
 Gly Val Ala Ala Arg Ile Leu Arg Ile Met Pro Ile Glu Gly Gly Ser
 115 120 125
 Ala Gln Val Leu Leu Ser Ile Glu Glu Arg Ile Arg Ile Ile Glu Pro
 130 135 140
 Ile Lys Asp Lys Tyr Leu Lys Ala Arg Val Ser Tyr His Ala Asp Asn
 145 150 155 160
 Lys Glu Leu Thr Glu Glu Leu Lys Ala Tyr Ser Ile Ser Ile Val Ser
 165 170 175
 Val Ile Lys Asp Leu Leu Lys Leu Asn Pro Leu Phe Lys Glu Glu Leu
 180 185 190
 Gln Ile Phe Leu Gly His Ser Asp Phe Thr Glu Pro Gly Lys Leu Ala
 195 200 205
 Asp Phe Ser Val Ala Leu Thr Thr Ala Thr Arg Glu Glu Leu Gln Glu
 210 215 220
 Val Leu Glu Thr Thr Asn Met His Asp Arg Ile Asp Lys Ala Leu Ile
 225 230 235 240
 Leu Leu Lys Lys Glu Leu Asp Leu Ser Arg Leu Gln Ser Ser Ile Asn
 245 250 255
 Gln Lys Ile Glu Ala Thr Ile Thr Lys Ser Gln Lys Glu Phe Phe Leu
 260 265 270
 Lys Glu Gln Leu Lys Thr Xaa Lys Lys Glu Leu Gly Leu Glu Lys Glu
 275 280 285
 Asp Arg Ala Ile Asp Ile Glu Lys Phe Ser Glu Arg Leu Arg Lys Arg
 290 295 300
 His Val Pro Asp Tyr Ala Met Glu Val Ile Gln Asp Glu Ile Glu Lys
 305 310 315 320
 Leu Gln Thr Leu Glu Thr Ser Ser Ala Glu Tyr Thr Val Cys Arg Asn
 325 330 335
 Tyr Leu Asp Trp Leu Thr Ile Ile Pro Trp Gly Ile Gln Ser Lys Glu
 340 345 350
 Tyr His Asp Leu Lys Lys Ala Glu Ile Val Leu Asn Lys Asp His Tyr
 355 360 365
 Gly Leu Asp Glu Ile Lys Gln Arg Ile Leu Glu Leu Ile Ser Val Gly
 370 375 380
 Lys Leu Ser Lys Gly Leu Lys Gly Ser Ile Ile Cys Leu Val Gly Pro
 385 390 395 400
 Pro Gly Val Gly Lys Thr Ser Ile Gly Arg Thr Leu Leu Lys Ser Cys
 405 410 415
 Ile Glu Ser Ser Ser Val Ser Gln
 420

<210>46

<211>122

<212>PRT

<213>Chlamydia pneumoniae

<400>46

Arg Met Phe Leu Gln Phe Phe His Pro Ile Val Phe Ser Asp Gln Ser
 1 5 10 15
 Leu Ser Phe Leu Pro Tyr Leu Gly Lys Ser Ser Gly Ile Ile Glu Lys
 20 25 30
 Cys Ser Asn Ile Val Glu His Tyr Leu His Leu Gly Gly Asp Thr Ser
 35 40 45
 Val Ile Ile Thr Gly Val Ser Gly Ala Thr Phe Leu Ser Val Asp His
 50 55 60
 Ala Leu Pro Ile Ser Lys Ser Glu Lys Ile Ile Lys Ile Leu Ser Tyr
 65 70 75 80
 Ile Leu Ile Leu Pro Leu Ile Leu Ala Leu Phe Ile Lys Ile Val Leu
 85 90 95
 Arg Ile Ile Leu Phe Xaa Lys Tyr Arg Gly Leu Ile Xaa Asp Val Lys
 100 105 110
 Lys Glu Asp Leu Glu Lys Asn Thr Tyr Thr
 115 120

<210>47

<211>150

<212>PRT

<213>Chlamydia pneumoniae

<400>47

Ser Asn Lys Asn Glu Arg Asn Glu Asn Ile Tyr Cys Phe Asn Leu Phe
 1 5 10 15
 Arg Tyr Ile Arg Phe Phe Ala Ala Leu Asn Ile Arg Thr Asn Asp Gly
 20 25 30
 Leu Arg Phe Cys Tyr Ser Tyr Ile Leu Leu Arg Pro Met Leu Leu Asp
 35 40 45
 Ser Ser Leu Leu Arg Lys Gly Gly Gln Glu Leu Leu Lys Lys Phe Gln
 50 55 60
 Ile Lys Leu Arg Thr Thr Ser Ile Lys Ser Ser Leu Ile Ser Leu Arg
 65 70 75 80
 Gln Gln Leu Gly Lys Arg Glu Ala Thr Gln Ser Asp Ile Leu Tyr Gly
 85 90 95
 Thr Ser Arg Phe Gln Tyr Leu Asn Ser Phe Glu Ile Glu Asp Pro Arg
 100 105 110
 Ile Pro Pro Thr Met Ala Ala Gln Leu Gln Glu Ile Ile Trp Ser Arg
 115 120 125
 Ser Val Met Glu Leu Lys Ile Lys Phe Tyr Val Tyr Leu Asn Ser Glu
 130 135 140
 Arg Asn Lys Thr Lys Pro
 145 150

<210>48

<211>392

<212>PRT

<213>Chlamydia pneumoniae

<400>48

Met Asp Tyr Tyr Ser Ile Leu Gly Ile Ser Lys Thr Ala Ser Ala Glu
 1 5 10 15
 Glu Ile Lys Lys Ala Tyr Arg Lys Leu Ala Val Lys Tyr His Pro Asp
 20 25 30
 Lys Asn Pro Gly Asp Ala Ala Ala Glu Lys Arg Phe Lys Glu Val Ser
 35 40 45
 Glu Ala Tyr Glu Val Leu Ser Asp Pro Gln Lys Arg Asp Ser Tyr Asp
 50 55 60
 Arg Phe Gly Lys Asp Gly Pro Phe Ala Gly Ala Gly Gly Phe Gly Gly
 65 70 75 80
 Ala Gly Gly Met Gly Asn Met Glu Asp Ala Leu Arg Thr Phe Met Gly
 85 90 95
 Ala Phe Gly Gly Glu Phe Gly Gly Gly Ser Phe Phe Asp Gly Leu Phe
 100 105 110
 Gly Gly Leu Gly Glu Ala Phe Gly Met Arg Ser Asp Pro Ala Gly Ala
 115 120 125
 Arg Gln Gly Ala Ser Lys Lys Val His Ile Asn Leu Thr Phe Glu Glu
 130 135 140
 Ala Ala His Gly Val Glu Lys Glu Leu Val Val Ser Gly Tyr Lys Ser
 145 150 155 160
 Cys Glu Thr Cys Ser Gly Gln Gly Ala Val Asn Pro Gln Gly Ile Lys
 165 170 175
 Ser Cys Glu Arg Cys Lys Gly Ser Gly Gln Val Val Gln Ser Arg Gly
 180 185 190
 Phe Phe Ser Met Ala Ser Thr Cys Pro Glu Cys Gly Gly Glu Gly Arg
 195 200 205
 Ile Ile Thr Asp Pro Cys Ser Ser Cys Arg Gly Gln Gly Arg Val Lys
 210 215 220
 Asp Lys Arg Ser Val His Val His Ile Pro Ala Gly Val Asp Ser Gly
 225 230 235 240
 Met Arg Leu Lys Met Glu Gly Tyr Gly Asp Ala Gly Gln Asn Gly Ala
 245 250 255
 Pro Ser Gly Asp Leu Tyr Val Phe Ile Asp Val Glu Ser His Pro Val
 260 265 270
 Phe Glu Arg Arg Gly Asp Asp Leu Ile Leu Glu Leu Pro Ile Gly Phe
 275 280 285

Val Asp Ala Ala Leu Gly Met Lys Lys Glu Ile Pro Thr Leu Leu Lys
 290 295 300
 Thr Glu Gly Ser Cys Arg Leu Thr Val Pro Glu Gly Ile Gln Ser Gly
 305 310 315 320
 Thr Ile Leu Lys Val Arg Asn Gln Gly Phe Pro Asn Val His Gly Lys
 325 330 335
 Gly Arg Gly Asp Leu Leu Val Arg Ile Ser Val Glu Thr Pro Gln Asn
 340 345 350
 Leu Ser Glu Glu Gln Lys Glu Leu Leu Arg Thr Phe Ala Ser Thr Glu
 355 360 365
 Lys Ala Glu Asn Phe Pro Lys Lys Arg Ser Phe Leu Asp Lys Ile Lys
 370 375 380
 Gly Phe Phe Ser Asp Phe Thr Val
 385 390

<210>49

<211>258

<212>PRT

<213>Chlamydia pneumoniae

<400>49

Met Gly Val Val Gln Asn Gln Val Ile Ser Ser Ile Arg Asp Val Leu
 1 5 10 15
 Lys Leu Val Trp Glu Leu Arg Phe Ala Glu His Lys Met Leu Leu Leu
 20 25 30
 Ser Arg Gln Ser Gly Ser Gly Gly Thr Phe Gln Leu Ser Cys Ala Gly
 35 40 45
 His Glu Leu Ala Gly Val Leu Ala Gly Lys Ser Leu Ile Pro Gly Lys
 50 55 60
 Asp Trp Ser Phe Pro Tyr Tyr Arg Asp Gln Gly Phe Pro Ile Gly Leu
 65 70 75 80
 Gly Cys Asp Leu Ser Glu Ile Phe Ala Ser Phe Leu Ala Arg Thr Thr
 85 90 95
 Pro Asn His Ser Ser Ala Arg Met Met Pro Tyr His Tyr Ser His Lys
 100 105 110
 Lys Leu Arg Ile Cys Cys Gln Ser Ser Val Val Gly Thr Gln Phe Leu
 115 120 125
 Gln Ala Ala Gly Arg Ala Trp Ala Val Lys His Ser Ser Ala Asp Glu
 130 135 140
 Val Val Tyr Val Ser Gly Gly Asp Gly Ala Thr Ser Gln Gly Glu Phe
 145 150 155 160
 His Glu Met Leu Asn Phe Val Ala Leu His Gln Leu Pro Leu Ile Thr
 165 170 175
 Val Ile Gln Asn Asn His Trp Ala Ile Ser Val Pro Phe Glu Asp Gln
 180 185 190
 Cys Gly Ala Asp Leu Ala Ser Leu Gly Arg Cys His Gln Gly Leu Ala
 195 200 205
 Val Tyr Glu Val Asp Gly Gly Asn Tyr Thr Ser Leu Thr Glu Thr Phe
 210 215 220
 Ser His Ala Val Asp Gln Ala Arg Gln His Ser Val Pro Ala Leu Ile
 225 230 235 240
 Leu Ile Asp Val Val Arg Leu Ser Ser His Ser Asn Ser Asp Asn Gln
 245 250 255
 Glu Lys

<210>50

<211>410

<212>PRT

<213>Chlamydia pneumoniae

<400>50

Met Asp Lys Asp Pro Leu Ile Leu Leu Glu Lys Glu Ala Ile Asn Val
 1 5 10 15
 Phe Gly Leu Ser Pro Phe Glu Ile Glu Glu Ile Lys Ala Glu Ala Gln
 20 25 30
 Glu Glu Val Arg Lys Ser Cys Glu Ile Ala Glu Ala Leu Pro Phe Pro
 35 40 45

Ser Lys Gly Ser Thr Ser His Glu Val Phe Ser Pro Tyr Thr Glu Thr
 50 55 60
 Leu Ile Asp Tyr Glu Asn Ser Glu Ser Ala Gln Asn Leu Arg Asn Ser
 65 70 75 80
 Glu Pro Lys Val Met Arg Asp Ala Ile Ser Glu Ala Leu Val Glu Glu
 85 90 95
 Met Thr Arg Asp Ser Gly Val Ile Val Phe Gly Glu Asp Val Ala Gly
 100 105 110
 Asp Lys Gly Gly Val Phe Gly Val Thr Arg Asn Leu Thr Glu Lys Phe
 115 120 125
 Gly Pro Gln Arg Cys Phe Asn Ser Pro Leu Ala Glu Ala Thr Ile Ile
 130 135 140
 Gly Thr Ala Ile Gly Met Ala Leu Asp Gly Ile His Lys Pro Val Val
 145 150 155 160
 Glu Ile Gln Phe Ala Asp Tyr Ile Trp Pro Gly Ile Asn Gln Leu Phe
 165 170 175
 Ser Glu Ala Ser Ser Ile Tyr Tyr Arg Ser Ala Gly Glu Trp Glu Val
 180 185 190
 Pro Leu Val Ile Arg Ala Pro Ser Gly Gly Tyr Ile Gln Gly Gly Pro
 195 200 205
 Tyr His Ser Gln Ser Ile Glu Gly Phe Leu Ala His Cys Pro Gly Ile
 210 215 220
 Lys Val Ala Tyr Pro Ser Asn Ala Ala Asp Ala Lys Ala Leu Leu Lys
 225 230 235 240
 Ala Ala Ile Arg Asp Pro Asn Pro Val Val Phe Leu Glu His Lys Ala
 245 250 255
 Leu Tyr Gln Arg Arg Ile Phe Ser Ala Cys Pro Val Phe Ser His Asp
 260 265 270
 Tyr Val Leu Pro Phe Arg Lys Ala Ala Ile Val His Pro Gly Lys Asp
 275 280 285
 Leu Thr Ile Val Ser Trp Gly Met Pro Leu Val Leu Ser Leu Glu Val
 290 295 300
 Ala Gln Glu Leu Ala Ser Arg Gly Ile Ser Ile Glu Val Ile Asp Leu
 305 310 315 320
 Arg Thr Met Val Pro Cys Asp Phe Ala Thr Val Leu Lys Ser Leu Glu
 325 330 335
 Lys Thr Gly Arg Leu Leu Val Ile His Glu Ala Ser Glu Phe Cys Gly
 340 345 350
 Phe Gly Ser Glu Leu Val Ala Thr Met Ser Glu Gln Gly Tyr Ala Tyr
 355 360 365
 Leu Asp Ala Pro Ile Arg Arg Leu Gly Gly Leu His Ala Pro Val Pro
 370 375 380
 Tyr Ser Lys Val Leu Glu Asn Glu Val Leu Pro His Lys Glu Ser Ile
 385 390 395 400
 Leu Gln Ala Ala Lys Ser Leu Ala Glu Phe
 405 410

<210>51

<211>429

<212>PRT

<213>Chlamydia pneumoniae

<400>51

Val Asn Phe Leu Leu Pro Thr Thr Cys Arg Gly Ile Leu Met Ala Glu
 1 5 10 15
 Ile Ser Thr Pro Ser Leu Pro Asp Ser Ser Ile Val Ser Gln Lys Thr
 20 25 30
 Pro Pro Val Pro Asp Pro Asp Ser Ser Pro Asp His Ile Pro Thr Ile
 35 40 45
 Pro Thr Gln Ala Pro Phe Lys Pro Gln Arg Lys Lys Glu Thr Pro Ser
 50 55 60
 Ser Ile Val Asn Ala Ile Ala Phe Ala Ile Leu Ala Phe Leu Ser Cys
 65 70 75 80
 Leu Gly Gly Val Phe Ala Ile Cys Leu Gly Cys Ser Leu Glu Ile Thr
 85 90 95
 Met Pro Leu Phe Ile Leu Thr Ala Val Phe Ile Ala Phe Thr Leu Leu

100 105 110
 Tyr Phe Ile His Tyr Leu Glu Lys Pro Lys Ile Pro Glu Pro Leu Pro
 115 120 125
 Thr Pro Pro Pro Ser Pro Thr Leu Arg Ala Pro Thr Leu Thr Pro Glu
 130 135 140
 Ile Pro Ala Pro Ala Pro Gly Ile Pro Leu Pro Pro Thr Leu Pro Lys
 145 150 155 160
 Val Asp Arg Thr Lys Leu Thr Cys Asn Pro Asp Ile His Tyr Pro Ser
 165 170 175
 Thr Tyr Asp Pro Lys Ala Cys Phe Ser Leu Leu Lys Gln Leu Phe Ser
 180 185 190
 Leu Asp Pro Glu Thr Arg Pro Glu Asp Arg Lys Tyr Ser Asn Lys Leu
 195 200 205
 Ala Ser Ile Leu Leu Arg Ser Lys Glu Lys Ser Gly Phe Arg Phe His
 210 215 220
 Cys Phe Lys Gly His Phe Ser His Asp Lys Ile Leu Asn Lys Lys Ser
 225 230 235 240
 Gly Ala Val Val Ile Ser Ser His Ser Ser Met Asp Phe Ser Thr Thr
 245 250 255
 Leu Gly Arg Ala Phe Ala Val Thr Thr Cys Leu Gln Arg Ser Cys Trp
 260 265 270
 Glu Lys Ile Lys Asn Asn Ile Pro Thr Pro Glu Lys His Leu Pro Ile
 275 280 285
 Gly Ser Cys Val Ser Gly Pro Trp Asp Val Glu Glu Gly Ala Gln Leu
 290 295 300
 Tyr Thr Ser His Leu Ile Val Ile Asn Pro Pro Thr Leu Glu Thr Leu
 305 310 315 320
 Ile Lys Glu Lys Met Arg Arg Ala Ile Thr Leu Lys Asp Phe Ser Met
 325 330 335
 Lys Glu Ala Phe Thr Asn Leu Val Leu Ala Tyr Leu Gln Cys Phe Asp
 340 345 350
 Ile Cys Ile Glu His Asn Leu Glu Ser Val Gln Leu Glu Val Phe Gly
 355 360 365
 Leu Asn Asn Leu Ser Ala Asp Gln Glu Glu Phe Thr Thr Trp Glu Ser
 370 375 380
 Cys Cys His Leu Ala Leu Leu Glu Ser Val Arg Ile Leu Leu Ala Ser
 385 390 395 400
 Lys Glu Glu Tyr Ala Leu Ser Asn Val Ser Val Asn Ser Ile Ser Gln
 405 410 415
 Val Pro Leu Gln Thr Ala Cys Arg Ala Leu Phe Leu Asn
 420 425

<210>52

<211>524

<212>PRT

<213>Chlamydia pneumoniae

<400>52

Thr Thr Leu Glu Glu Asp Ala Gly Ser Ser Leu Lys Pro Leu Pro Lys
 1 5 10 15
 Thr Phe Pro Cys Ala Thr Ala Leu Tyr Ile Thr His Arg Arg Glu Arg
 20 25 30
 Lys Ser Glu His Gln Met Trp Asn Arg Cys Gln Val Phe Ser Ser Phe
 35 40 45
 Phe Phe Arg Tyr Pro Ile Ser Ser Trp Leu Ile Arg Leu Arg Ala Ser
 50 55 60
 Cys Glu Cys Phe Gln Gln Arg His Pro Ile Phe Leu Cys Gly Leu Tyr
 65 70 75 80
 Trp Leu Ala Gly Ile Thr Ser Arg Gly Tyr Pro Glu Cys Ser Ala Leu
 85 90 95
 Ile Leu Ile Phe Leu Gly Met Phe Leu Pro Arg Asn Pro Lys Gln Trp
 100 105 110
 Leu Pro Leu Ala Ser Ala Trp Ile Ile Ser Leu Met Leu Thr Pro Ala
 115 120 125
 Pro Phe Leu His Asp Gly Pro Ile Ser Gly Thr Phe Val Ile His His
 130 135 140

Ala Gly Gly Gln Gly Xaa Thr Thr Glu Lys Leu Phe Val Phe Arg Arg
 145 150 155 160
 Pro Val Gly Lys Arg Ala His His Leu Xaa Cys Gln Ile Leu Ser Glu
 165 170 175
 Ser Arg Leu Glu Leu Lys Lys Val Tyr Glu Leu Glu Gly Thr Leu His
 180 185 190
 His Thr Ser Gln Ile Val Phe Lys Ser Asn Ala Cys Tyr Lys Glu Ile
 195 200 205
 Pro Arg Ser Arg Phe Tyr Ile Met Lys Glu Lys Cys Arg Glu Ser Ser
 210 215 220
 Cys His Phe Leu Asn His Arg Phe Pro Ser Ser Glu Val Gly Pro Phe
 225 230 235 240
 Ala Ser Ser Leu Leu Gly Thr Pro Leu Pro Gln Asn Leu Arg Asp
 245 250 255
 Leu Phe Arg Gln Lys Gly Leu Ser His Leu Phe Ala Ile Ser Gly Trp
 260 265 270
 His Phe Ser Leu Cys Ala Thr Thr Leu Trp Met Leu Cys Ala Leu Leu
 275 280 285
 Pro Leu Lys Ile Lys Lys Ile Leu Ser Phe Ile Val Leu Thr Ser Leu
 290 295 300
 Ser Cys Ile Phe Pro Met Ser Leu Ser Val Trp Arg Ser Trp Ile Ser
 305 310 315 320
 Val Thr Leu Leu Cys Phe Ser Trp Cys Phe Ser Gly Ser Cys Ser Gly
 325 330 335
 Leu Asn Arg Leu Gly Ala Gly Phe Ile Leu Cys Ser Ile Phe Phe Ser
 340 345 350
 Arg Phe Ser Pro Thr Phe Val Leu Ser Phe Leu Ala Thr Leu Gly Ile
 355 360 365
 Leu Leu Phe Phe Pro Lys Ile Phe Ser Phe Leu Tyr Thr Pro Trp Thr
 370 375 380
 Gln Phe Leu Ser Pro Phe Trp Leu Tyr Pro Ile Arg Tyr Leu Ala Met
 385 390 395 400
 Thr Leu Ala Ile Ser Leu Ser Ala Gln Leu Phe Ile Val Leu Pro Ile
 405 410 415
 Met Gln Tyr Phe Gly Ser Leu Pro Leu Glu Gly Leu Leu Tyr Asn Leu
 420 425 430
 Ile Val Pro Phe Thr Ile Leu Pro Ile Ile Val Phe Leu Ile Ala Thr
 435 440 445
 Ile Ile Leu Pro Cys Cys Ser Pro Ile Thr Glu Ala Leu Ile Gln Gly
 450 455 460
 Phe Leu Ser His Pro Trp Leu His Asn Pro Asn Ile Leu Lys Thr Leu
 465 470 475 480
 Ser Phe Ala Pro Val Pro Pro Trp Met Leu Thr Leu Ala Ser Leu Ile
 485 490 495
 Leu Phe Phe Ile Gly Ile Leu Arg Thr Asn Val Ser Pro Tyr Ala Ser
 500 505 510
 Thr Ser Ala Thr Ser Tyr Arg Phe Ile Glu Thr Leu
 515 520

<210>53

<211>276

<212>PRT

<213>Chlamydia pneumoniae

<400>53

Ala Lys Ser Leu Trp Asp Ser Glu Arg Lys Lys Met Lys Lys Pro Asp
 1 5 10 15
 Asn Asp Ser Thr Phe Asp Val Arg Ser Phe Phe Pro Phe Asp Val Leu
 20 25 30
 Cys Ile Glu Gln Leu Arg Lys Glu Met Ser Trp Glu Val Val Ser Ala
 35 40 45
 Lys Ile Pro Arg Leu Pro Arg Gly Trp Tyr Glu Leu Met Gly Leu Ser
 50 55 60
 Lys Glu Asp Arg Ile Asp Phe Cys Leu Asp Phe Trp Cys Ser Val Leu
 65 70 75 80
 Gly Ile Glu His Lys Glu Ser Pro Ser Ile Cys Arg Phe Phe Ser Leu

85 90 95
 Leu Glu Thr Ile Glu Val Tyr Ile Tyr Arg Leu Glu Lys Glu Pro Tyr
 100 105 110
 Gln Leu Lys Met Phe Tyr Val Phe Arg Asp Gly Arg Cys Gly Phe Gln
 115 120 125
 Gly Glu Pro Pro Leu Leu Asp Phe Leu Gly His His Arg Leu Pro Pro
 130 135 140
 Leu Gly Asp Arg His Tyr Glu Lys Phe Phe Ser Ile His Asn Gly Phe
 145 150 155 160
 Gly Lys Trp Glu Asp Glu Gly Ile Phe Pro Met Arg Ser Leu Ala Lys
 165 170 175
 Val Gln Gln Lys Leu Arg Gln Gln Leu Val Val Met Asn Lys Met Gln
 180 185 190
 Ala Glu Asp Asn Cys Tyr Ser Leu Gly Ile Phe Pro Phe Tyr Gly Tyr
 195 200 205
 Glu Glu Pro Phe Ala Tyr Gln Ser Phe Phe Phe Asp Pro Glu Ile Arg
 210 215 220
 Arg Asp Leu Pro Ser Pro Asn Val Leu Leu Asn Glu Glu Ser Leu Glu
 225 230 235 240
 His Arg Ser Leu Glu Thr Ile Glu Leu Leu His Leu Ser Lys Ser Tyr
 245 250 255
 Tyr Pro Ser Phe Leu Ser Trp Leu Glu Asn Tyr Leu His Ser Glu Glu
 260 265 270
 Val Tyr Asn Glu
 275

<210>54

<211>113

<212>PRT

<213>Chlamydia pneumoniae

<400>54

Val Arg Arg Cys Ile Met Asn Glu Pro Thr Arg Thr Tyr Leu Glu Ser
 1 5 10 15
 Glu Lys Asp Thr Gln Asp Gln Ile Glu Glu Leu Gln Ala Thr Cys Ile
 20 25 30
 Val Lys Asn Ala Ala Gly Ile His Val Arg Pro Ala Gly Val Ile Val
 35 40 45
 Arg Leu Phe Asp Gly Glu Pro Cys Asp Val His Phe Thr Tyr Ala Gly
 50 55 60
 Lys Thr Ile Asn Ala Lys Ser Ile Met Ser Ile Leu Met Leu Gly Ala
 65 70 75 80
 Pro Gln Gly Gly Glu Ile Leu Val Thr Ile Arg Ser Lys Glu Ala His
 85 90 95
 Arg Ile Leu Gln Lys Ile Gln Asp Ala Phe Ser Ser Gly Phe Gly Glu
 100 105 110
 Leu

<210>55

<211>420

<212>PRT

<213>Chlamydia pneumoniae

<400>55

Met Asp Thr Gln Ser Ser Ile Gly Asn Glu Glu Trp Arg Ile Ala Gly
 1 5 10 15
 Thr Ser Val Val Ser Gly Met Ala Leu Gly Lys Val Phe Phe Leu Gly
 20 25 30
 Thr Ser Pro Leu His Val Arg Glu Leu Thr Leu Pro Gln Glu Glu Val
 35 40 45
 Glu His Glu Ile His Arg Tyr Lys Ala Leu Asn Arg Ser Lys Ser
 50 55 60
 Asp Ile Val Ala Leu Glu Gln Glu Val Thr Gly Gln Gln Gly Leu Gln
 65 70 75 80
 Glu Val Ser Ser Ile Leu Gln Ala His Leu Glu Ile Met Lys Asp Pro
 85 90 95
 Leu Leu Thr Glu Glu Val Val Asn Thr Ile Arg Lys Asp Arg Lys Asn

100 105 110
 Ala Glu Tyr Val Phe Ser Ser Val Met Gly Lys Ile Glu Glu Ser Leu
 115 120 125
 Thr Ala Val Arg Gly Met Pro Ser Val Val Asp Arg Val Gln Asp Ile
 130 135 140
 His Asp Ile Ser Asn Arg Val Ile Gly His Leu Cys Cys Gln His Lys
 145 150 155 160
 Ser Ser Leu Gly Glu Ser Asp Gln Asn Leu Ile Ile Phe Ser Glu Glu
 165 170 175
 Leu Thr Pro Ser Glu Val Ala Ser Ala Asn Ser Ala Tyr Ile Arg Gly
 180 185 190
 Phe Val Ser Leu Val Gly Ala Ala Thr Ser His Thr Ala Ile Val Ser
 195 200 205
 Arg Ala Lys Ser Ile Pro Tyr Leu Ala Asn Ile Ser Glu Glu Leu Trp
 210 215 220
 Asn Ile Ala Lys Arg Tyr Asn Gly Lys Leu Val Leu Ile Asp Gly Tyr
 225 230 235 240
 Arg Gly Glu Leu Ile Phe Asn Pro Lys Pro Ala Thr Leu Gln Ser Cys
 245 250 255
 Tyr Lys Lys Glu Leu Ser Val Val Ala His Thr Ser Gln Arg Leu Val
 260 265 270
 Arg Lys Ser Leu His Pro Ile Val Ser Ser His Ala Gly Ser Asp Lys
 275 280 285
 Asp Val Glu Asp Leu Leu Glu Asn Phe Pro Gln Thr Ser Ile Gly Leu
 290 295 300
 Phe Arg Ser Glu Phe Leu Ala Val Ile Leu Gly Arg Leu Pro Thr Leu
 305 310 315 320
 Arg Glu Gln Val Asp Leu Tyr Glu Lys Leu Ala Arg Phe Pro Gly Asp
 325 330 335
 Ser Pro Ser Val Leu Arg Leu Phe Asp Phe Gly Glu Asp Lys Pro Cys
 340 345 350
 Pro Gly Ile Lys Asn Lys Lys Glu Arg Ser Ile Arg Trp Leu Leu Asp
 355 360 365
 Tyr Ser Val Ile Leu Glu Asp Gln Leu Gln Ala Ile Ala Lys Ala Ser
 370 375 380
 Leu Gln Gly Ser Ile Lys Val Leu Ile Pro Gly Val Ser Asp Val Ser
 385 390 395 400
 Glu Ile Ile Glu Val Lys Lys Lys Trp Glu Thr Ile Gln Thr Arg Phe
 405 410 415
 Pro Lys Arg Pro
 420

<210>56

<211>102

<212>PRT

<213>Chlamydia pneumoniae

<400>56

Thr Ser Lys Cys Asn Phe Ala Pro Ser Ser Asp Pro His Asp Ser Pro
 1 5 10 15
 Cys Thr Ser Ser Cys Glu Gln Asn Gln Val Pro Val Ser Ile Cys Gly
 20 25 30
 Glu Ala Ala Gly Gln Leu Ser Leu Thr Pro Leu Phe Ile Gly Leu Gly
 35 40 45
 Val Gln Glu Leu Ser Val Ala Met Pro Val Ile Asn Arg Leu Arg Asn
 50 55 60
 His Ile Ala Leu Leu Glu Leu Asn Ser Cys Leu Glu Ile Thr Glu Ala
 65 70 75 80
 Leu Leu Gln Ala Lys Thr Cys Ser Glu Val Glu Glu Leu Leu Asn Arg
 85 90 95
 Asn Asn Lys Ile Thr Ser
 100

<210>57

<211>98

<212>PRT

<213>Chlamydia pneumoniae

<400>57

Ile Ser Met Gly Ser Gly Tyr Ala Lys Lys Lys Lys Glu Ala Lys Ile
 1 5 10 15
 Met Glu Gln Gln Phe Leu Glu Met Glu Ala Ser Leu Leu Glu Lys Arg
 20 25 30
 Tyr Glu Gly Gln Ala Gly Asn Gly Leu Val Ser Val Val Ile Asn Gly
 35 40 45
 Lys Cys Asp Leu Ile Ser Val Lys Val Gln Pro Thr Cys Leu Asp Pro
 50 55 60
 Glu Asp Pro Glu Val Ile Glu Asp Leu Phe Arg Ala Ala Phe Lys Leu
 65 70 75 80
 Ala Lys Glu Gln Met Asp Gln Glu Met Ser Leu Met Arg Ser Thr Met
 85 90 95
 Pro Phe

<210>58

<211>271

<212>PRT

<213>Chlamydia pneumoniae

<400>58

Val Val Val Lys Lys Cys Ile Phe Lys Gly Phe Leu Lys Lys Arg Ser
 1 5 10 15
 Trp Arg Ser Tyr Arg Leu Trp Leu Lys Met Thr Ile Leu Arg Arg Arg
 20 25 30
 Lys Lys His Trp Arg Arg Ser Pro Val Gln His Lys Glu Ala Cys Val
 35 40 45
 Met Gln Asn Leu Phe Met Thr Tyr Val Ile Ser Leu Phe Pro Lys Ser
 50 55 60
 Leu Ser Pro Asp Thr Val Ala Gln Ala Leu Gly Phe Ala Ser Gln Asp
 65 70 75 80
 Ser Leu Arg Thr Leu Asp Asn Ala Ile Leu Gln Arg Asp Tyr Ala Thr
 85 90 95
 Ala Leu Gly Ile Val Thr Asp Phe Leu Asn Ser Gly Val Ala Pro Val
 100 105 110
 Thr Phe Leu His Asp Leu Thr Leu Phe Tyr Arg Asn Leu Leu Leu Thr
 115 120 125
 Asn Ser Thr Thr Ser Lys Phe Ser Ser Gln Tyr Lys Thr Glu Gln Leu
 130 135 140
 Leu Glu Ile Ile Asp Phe Leu Gly Glu Ser Ala Lys His Leu Gln Asn
 145 150 155 160
 Thr Ile Phe Glu Gln Thr Phe Leu Glu Thr Val Ile Ile His Ile Ile
 165 170 175
 Arg Ile Tyr Gln Arg Pro Val Leu Ser Glu Leu Ile Ser Ser Ile Lys
 180 185 190
 Ser Arg Gln Phe Glu Gly Leu Arg Asn Ile Lys Glu Pro Thr Leu Thr
 195 200 205
 Gln Gln Val Ser Ala Pro Gln Pro Gln Pro Thr Tyr Lys Glu Gln Ser
 210 215 220
 Phe Leu Glu Lys Lys Asn Gln Pro Ala Ala Glu Gly Lys Ile Ile Ser
 225 230 235 240
 Val Glu Val Lys Ser Ser Ala Ser Ile Lys Ser Ala Ala Val Asp Thr
 245 250 255
 Leu Leu Gln Phe Ala Val Val Glu Phe Ser Gly Ile Leu Arg Gln
 260 265 270

<210>59

<211>233

<212>PRT

<213>Chlamydia pneumoniae

<400>59

Met Thr Leu Gln Pro Tyr Gln Ala Ser Ser Arg Lys Tyr Arg Pro Gln
 1 5 10 15
 Ile Phe Arg Glu Ile Leu Gly Gln Ser Ser Val Val Ala Val Leu Lys
 20 25 30
 Asn Ala Leu Val Phe Asn Arg Ala Ala His Ala Tyr Leu Phe Ser Gly

Val Ala Lys Thr Ala Phe Glu Lys Ala Phe Gly Ala Leu Glu Thr Cys
 275 280 285
 Val Tyr Glu Ser Met Arg Glu Ser Tyr Arg Glu Ala Phe Cys Glu Tyr
 290 295 300
 Glu Lys Ala Lys Leu Leu Gly Asp Glu Glu Lys Ser Ala His Ala Glu
 305 310 315 320
 Gln Arg Phe Gln Asp Ile Lys Asn Arg Trp Glu Asp Val Lys Asp Ala
 325 330 335
 Phe Phe Trp Val Lys Glu Asp Gly Glu Asp
 340 345

<210>61

<211>145

<212>PRT

<213>Chlamydia pneumoniae

<400>61

Lys Lys Met Gly Lys Ile Glu Ile Asp Asp Ala Ile Gly Asn Ser Cys
 1 5 10 15
 Lys Trp Ser Glu Arg Tyr Glu Glu His Arg Ile Thr Arg Ala Arg Trp
 20 25 30
 Tyr Lys Val Ala Glu His Gln Leu Phe Asn Ala Thr Met Arg Val Lys
 35 40 45
 Asp Ser Leu Arg Glu His Asn Glu Ala Arg Val Ala Phe Glu Lys Glu
 50 55 60
 Arg Ser Lys Glu Asn Gln Arg Gln Val Gln Lys Lys Lys Glu Lys Arg
 65 70 75 80
 Leu Arg Asp Leu Lys Glu Leu His Asp Gln Glu Leu Pro Arg Ala Gln
 85 90 95
 Glu Arg Leu Arg Glu Leu Gln Ala Leu Tyr Pro Glu Ile Ala Val Ser
 100 105 110
 Val Val Glu Ala Arg Arg Glu Val Ala Ser Asp Leu Glu Lys Ala His
 115 120 125
 Glu Ser Ile Asp Lys His Tyr Gln Ser Cys Val Arg Glu Gln Glu Leu
 130 135 140

Tyr

145

<210>62

<211>279

<212>PRT

<213>Chlamydia pneumoniae

<400>62

Glu Glu Glu Glu Lys Gln Glu Ala Glu Phe Arg Glu Asn Gly Thr Lys
 1 5 10 15
 Ile Arg Ser Met Glu Glu Val Ser Glu Tyr Leu Gln Gln Val Glu Asn
 20 25 30
 Gln Leu Glu Ser Cys Ser Lys Arg Leu Thr Lys Met Glu Thr Phe Ala
 35 40 45
 Leu Gly Val Arg Leu Glu Ala Lys Glu Glu Ile Glu Ser Ile Ile Leu
 50 55 60
 Ser Asp Val Val Asn Arg Phe Glu Val Leu Cys Arg Asp Ile Glu Asp
 65 70 75 80
 Met Leu Ser Arg Val Glu Glu Ile Glu Arg Met Leu Arg Met Ala Glu
 85 90 95
 Leu Pro Val Leu Pro Ile Lys Glu Ala Leu Thr Lys Ala Phe Val Gln
 100 105 110
 His Asn Ser Cys Lys Glu Lys Leu Thr Lys Val Glu Pro Tyr Phe Lys
 115 120 125
 Glu Ser Pro Ala Tyr Leu Thr Ser Glu Asn Arg Leu Gln Ser Leu Asn
 130 135 140
 Gln Thr Leu Gln Arg Ala Tyr Lys Glu Ser Gln Lys Val Ser Gly Leu
 145 150 155 160
 Glu Ser Glu Val Arg Ala Cys Arg Glu Gln Leu Lys Asp Gln Val Arg
 165 170 175
 Gln Phe Glu Thr Gln Gly Val Ser Leu Ile Lys Glu Glu Ile Leu Phe
 180 185 190

Val Thr Ser Thr Phe Arg Thr Lys Phe Ser Tyr His Ser Phe Arg Leu
 195 200 205
 His Val Pro Cys Met Arg Leu Tyr Glu Glu Tyr Tyr Asp Asp Ile Asp
 210 215 220
 Leu Glu Arg Thr Arg Ala Arg Trp Met Ala Met Ser Glu Arg Tyr Arg
 225 230 235 240
 Asp Ala Phe Gln Ala Phe Gln Glu Met Leu Lys Glu Gly Leu Val Glu
 245 250 255
 Glu Ala Gln Ala Leu Arg Glu Thr Glu Tyr Trp Leu Tyr Arg Glu Glu
 260 265 270
 Arg Lys Ser Lys Lys Lys His
 275

<210>63

<211>644

<212>PRT

<213>Chlamydia pneumoniae

<400>63

Cys Lys Tyr Leu Tyr His His Ser Tyr Pro Pro Pro Pro Pro Pro
 1 5 10 15
 Asp Gln Ser Val Gly Ala Ser Phe Cys Leu Ser Lys Phe Arg Val Leu
 20 25 30
 Ala Ile Thr Phe Leu Val Leu Gly Val Leu Leu Leu Ile Ser Gly Ala
 35 40 45
 Leu Phe Leu Thr Leu Gly Ile Ser Gly Val Ser Leu Gly Val Gly Leu
 50 55 60
 Gly Leu Ser Ala Leu Gly Ser Val Leu Val Ile Ser Gly Phe Leu Leu
 65 70 75 80
 Leu Leu Glu Arg Arg Glu Val Ser Gly Val Gly Leu Glu Gly Ile Pro
 85 90 95
 Thr Gly Ile Pro Val Gly Pro Ser Ala Glu Pro Ser Ser Glu Glu Ile
 100 105 110
 Gln Lys Lys Gln Lys Ala Lys Gln Ile Leu Asp Gln Leu Pro Gln Glu
 115 120 125
 Leu Asp Gln Leu Asp Thr Asp Ile Gln His Val Leu Ser Cys Leu Gly
 130 135 140
 Lys Leu Lys Asp Leu Lys Cys Lys Asp Arg Gly Leu Leu Lys Asp Ala
 145 150 155 160
 Lys Glu Lys Leu Gln Val Phe Asp Phe Val Trp Lys Asp Met Met Met
 165 170 175
 Glu Phe Val Glu Leu Gln Gln Val Met Asp Gln Glu Ser Arg Tyr Leu
 180 185 190
 Glu Gly Leu Ile His Glu Val Gln Ser Ile Ala His Lys Leu Phe Val
 195 200 205
 Asp Asp Val Asn Ile Arg Ser His Leu Gly Glu Ser Cys Gly Tyr Leu
 210 215 220
 Pro Ser Glu Asp Val Arg Gly Glu Leu Leu Lys Arg Phe Ala Lys Glu
 225 230 235 240
 Val Val Ala Arg Phe Met Lys Val Thr Arg Asp Ile Arg Lys Ile Ala
 245 250 255
 Met Ala Phe Asn Lys Asn Ala Tyr Gly Ala Ala Lys Asn Ala Phe Asp
 260 265 270
 Lys Ala Phe Gly Ser Leu Glu Thr Cys Leu Tyr Lys Ser Leu Thr Lys
 275 280 285
 Ser Tyr Arg Asp Thr Phe Cys Asp Tyr Lys Arg Ala Lys Ile Leu Pro
 290 295 300
 Asp Glu Asn Asn Ser Ala Arg Ala Glu Gln Arg Phe Arg Glu Val Lys
 305 310 315 320
 Asp His Trp Glu Asp Leu Asn Glu Thr Val Phe Trp Val Lys Glu Asp
 325 330 335
 Gly Arg Ile Asp Ile Glu Val Leu Thr Ala Val Gly Gly Trp Pro Asp
 340 345 350
 Arg Tyr Pro Glu His Leu Ile Leu Glu Lys Arg Lys Asp Lys Val Met
 355 360 365
 Ser His Gln Leu Trp Glu Ala Thr Met Arg Val Lys Glu Ala Glu Val

370 375 380
 Thr Tyr Ser Val Ala Arg Val Ala Phe Glu Lys Asp Gly Ser Gln Gln
 385 390 395 400
 Asn Gln Lys Lys Phe Gln Glu Lys Thr Lys Glu Arg Leu Arg Cys Leu
 405 410 415
 Lys Asp Leu Arg Asp Gln Glu Cys His Arg Ala Gln Glu Arg Leu Glu
 420 425 430
 Lys Leu Thr Ala Leu Tyr Pro Glu Val Ser Val Ser Val Val Glu Thr
 435 440 445
 Glu Arg Glu Arg Lys Phe Asn Leu Glu Lys Ala Tyr Gly Asn Leu Glu
 450 455 460
 Glu Arg Tyr Gln Ser Val Val Gln Asp Gln Glu Asp Tyr Trp Thr Glu
 465 470 475 480
 Gln Lys Asn Arg Glu Ala Glu Phe Arg Ala Lys Gly Thr Lys Val Arg
 485 490 495
 Ser Met Glu Glu Val Ala Glu His Leu Gln Ile Leu Glu Asn Leu Leu
 500 505 510
 Glu Asp Cys Tyr Lys Arg Leu Ser Lys Ala Glu Thr Phe Ala Leu Gly
 515 520 525
 Val Glu Arg Glu Ala Thr Glu Glu Ile Glu Tyr Thr Ile Leu Ser Asp
 530 535 540
 Ala Ala Asn Arg Leu Lys Val Leu Cys Glu Asp Ile Glu Asp Thr Leu
 545 550 555 560
 Pro Arg Val Glu Glu Ile Glu Met Met Leu Arg Met Ala Glu Arg Pro
 565 570 575
 Leu His Pro Ile Lys Gln Ala Phe Thr Lys Ala Phe Val Gln Tyr Asn
 580 585 590
 Arg Cys Lys Glu Arg Leu Ala Lys Val Glu Pro Tyr Tyr Lys Glu Ser
 595 600 605
 Pro Ala Tyr Val Asn Ser Glu Glu Arg Leu Gln Ser Leu Asp Gln Ala
 610 615 620
 Ser Gln Cys Ile Gln Arg Val Pro Lys Gly Phe Lys Phe Arg Asn Gly
 625 630 635 640
 Ser Met Tyr Ile

<210>64

<211>114

<212>PRT

<213>Chlamydia pneumoniae

<400>64

Ser Lys Ile Cys Phe Ala Phe Cys Phe Phe Cys Ile Ser Ser Glu Glu
 1 5 10 15
 Gly Ser Ala Glu Gly Pro Thr Gly Ile Pro Val Gly Ile Pro Ser Lys
 20 25 30
 Pro Thr Pro Glu Thr Ser Arg Leu Ser Lys Ser Asn Arg Asn Pro Glu
 35 40 45
 Ile Thr Ser Thr Leu Pro Asn Ala Glu Ser Pro Lys Pro Thr Pro Arg
 50 55 60
 Glu Thr Pro Glu Ile Pro Asn Val Arg Lys Arg Ala Pro Glu Ile Ser
 65 70 75 80
 Lys Ser Thr Pro Arg Thr Lys Lys Val Ile Ala Lys Thr Arg Asn Leu
 85 90 95
 Asp Arg Gln Lys Glu Ala Pro Thr Asp Trp Ser Gly Gly Gly Gly Gly
 100 105 110
 Gly Gly

<210>65

<211>167

<212>PRT

<213>Chlamydia pneumoniae

<400>65

Ile Ala Lys Ser Asp Cys Arg Val Trp Ile Arg Leu His Ser Ala Tyr
 1 5 10 15
 Lys Glu Ser Gln Lys Val Ser Ser Leu Glu Thr Glu Ala Cys Thr Tyr

	20		25		30										
Arg	Glu	Tyr	Leu	Arg	Glu	Gln	Val	Gln	Gln	Phe	Glu	Thr	Gln	Gly	Val
	35		40		45										
Ser	Leu	Ile	Lys	Glu	Glu	Leu	Leu	Phe	Leu	Ser	Ser	Thr	Leu	Lys	Ser
	50		55		60										
Lys	Leu	Ser	Tyr	Asp	Pro	Leu	Ile	Ala	Asn	Ile	Pro	Cys	Met	Lys	Phe
	65		70		75		80								
Tyr	Tyr	Gln	Tyr	Tyr	Asp	Asp	Ile	Asp	Lys	Ala	Arg	Ala	Gln	Ser	Arg
			85		90		95								
Trp	Leu	Glu	Lys	Ser	Glu	Arg	Tyr	Arg	Asn	Ala	Lys	Arg	Arg	Phe	Gln
			100		105		110								
Glu	Ile	Val	Lys	Lys	Gly	Leu	Phe	Lys	Glu	Ala	Lys	Pro	Leu	Lys	Lys
			115		120		125								
Glu	Glu	Tyr	Arg	Leu	Leu	Gln	Glu	Glu	Arg	Ser	Asn	Lys	Glu	Lys	Arg
			130		135		140								
Leu	Ile	Tyr	Asn	Lys	Met	Ala	Val	Ala	Arg	Gln	Arg	Val	Gln	Glu	Phe
			145		150		155		160						
Glu	Ser	Met	Glu	Ile	Pro	Glu									
					165										

<210>66

<211>235

<212>PRT

<213>Chlamydia pneumoniae

<400>66

Cys	Lys	Tyr	Thr	Tyr	His	Pro	Pro	Gln	Leu	Pro	Pro	Asp	His	Ser	Val
	1		5		10		15								
Gly	Ala	Thr	Ser	Trp	Gln	Pro	Lys	Leu	Arg	Ile	Leu	Thr	Ile	Thr	Phe
			20		25		30								
Leu	Val	Leu	Gly	Val	Leu	Leu	Leu	Ile	Ser	Gly	Ala	Leu	Phe	Leu	Thr
			35		40		45								
Leu	Gly	Val	Pro	Gly	Leu	Ala	Ala	Gly	Leu	Ser	Phe	Gly	Leu	Gly	Ile
			50		55		60								
Gly	Leu	Ser	Ala	Leu	Gly	Gly	Val	Leu	Val	Val	Ser	Gly	Leu	Leu	Phe
			65		70		75		80						
Phe	Leu	Ile	Arg	Arg	Gly	Val	Ser	Lys	Val	Arg	Pro	Glu	Glu	Ile	Pro
			85		90		95								
Val	Thr	Pro	Ser	His	Glu	Ala	Gln	Lys	Ile	Leu	Cys	Gln	Leu	Pro	Gln
			100		105		110								
Glu	Leu	Asp	Gln	Leu	Asp	Thr	Ser	Ile	Gln	Glu	Val	Val	Ser	Cys	Leu
			115		120		125								
Gly	Lys	Leu	Lys	Asp	Leu	Lys	Tyr	Glu	Asp	Gln	Gly	Leu	Leu	Thr	Glu
			130		135		140								
Val	Gln	Glu	Lys	Leu	Arg	Val	Phe	Asp	Phe	Val	Arg	Lys	Asp	Met	Val
			145		150		155		160						
Thr	Glu	Phe	Leu	Glu	Leu	Gln	Gln	Val	Val	Ala	Gln	Glu	Gly	Gln	Phe
			165		170		175								
Leu	Asp	Tyr	Leu	Ile	Asn	Gln	Val	Gln	Ser	Ile	Ser	His	Lys	Leu	Phe
			180		185		190								
Val	Pro	Asp	Val	Asn	Ile	Gly	Ala	His	Leu	Ala	Glu	Leu	Cys	Gly	Tyr
			195		200		205								
Leu	Pro	Ser	Gly	Asp	Val	Arg	Val	Glu	Arg	Leu	Lys	Arg	Ser	Ala	Arg
			210		215		220								
Gln	Val	Val	Asp	Arg	Phe	His	Glu	Gly	Asp	Leu					
			225		230		235								

<210>67

<211>526

<212>PRT

<213>Chlamydia pneumoniae

<400>67

Arg	Glu	Cys	Cys	Gly	Val	Ala	Lys	Asn	Ala	Phe	Asp	Lys	Ala	Phe	Gly
	1		5		10		15								
Ala	Leu	Glu	Glu	Cys	Val	Tyr	Lys	Ser	Leu	Thr	Glu	Ser	Tyr	Arg	Glu
			20		25		30								
Ala	Phe	Tyr	Glu	Tyr	Glu	Lys	Ala	Lys	Ile	Leu	Arg	Asn	Glu	Asp	Val

35 40 45
 Glu Trp Leu Gln Asp Lys Asn Lys Ser Ala Arg Ala Glu Gln Arg Phe
 50 55 60
 Arg Glu Val Lys Asp Arg Trp Glu Asp Leu Lys Glu Thr Val Phe Trp
 65 70 75 80
 Val Lys Glu Asn Gly Cys Ile Asp Leu Glu Val Leu Thr Ala Val Gly
 85 90 95
 Gly Trp Pro Asp Arg Gly Pro Glu His Leu Ile Pro Glu Lys Arg Arg
 100 105 110
 Asn Lys Val Met Ser His Lys Leu Trp Glu Ala Thr Met Arg Met Lys
 115 120 125
 Gly Ala Glu Gly Thr Tyr Ser Val Ala Arg Val Ala Phe Glu Lys Asp
 130 135 140
 Gly Ser Arg Lys Asn Gln Lys Lys Phe Gln Glu Lys Thr Lys Glu Trp
 145 150 155 160
 Leu Arg Cys Leu Lys Asp Leu His Asp Gln Glu Cys His Arg Ala Arg
 165 170 175
 Glu Arg Leu Ala Glu Leu Glu Ala Leu Tyr Pro Glu Val Ser Val Ser
 180 185 190
 Val Val Glu Thr Glu Arg Glu Thr Lys Phe Lys Leu Glu Thr Ala Tyr
 195 200 205
 Gly Asn Leu Glu Glu Arg Tyr Gln Ser Val Val Arg Asp Gln Glu Asp
 210 215 220
 Tyr Trp Lys Glu Glu Glu Asn Lys Glu Ala Glu Phe Arg Glu Lys Gly
 225 230 235 240
 Thr Lys Val Arg Ser Pro Glu Glu Val Val Glu Tyr Leu Gln Ile Leu
 245 250 255
 Glu Asn Leu Leu Glu Asp Cys Ser Lys Gln Leu Thr Ile Ala Glu Val
 260 265 270
 Val Val Leu Gly Val Glu Leu Glu Ala Thr Ala Glu Phe Glu Tyr Thr
 275 280 285
 Ile Leu Ser Asp Ala Ala Asn Arg Leu Lys Val Leu Cys Glu Asp Ile
 290 295 300
 Glu Asp Ile Leu Pro Arg Val Glu Glu Ile Glu Ile Met Leu Arg Ile
 305 310 315 320
 Ala Glu Leu Pro Phe Leu Pro Ile Lys Gln Ala Phe Thr Lys Ala Phe
 325 330 335
 Leu Gln Tyr Asn Ser Cys Lys Asp Lys Leu Ala Lys Val Glu Pro Tyr
 340 345 350
 Cys Gln Glu Ser Val Asp Tyr Arg Arg Asn Lys Glu Arg Phe Gln Ser
 355 360 365
 Leu Asn Gln Asp Leu Gln Asn Val Tyr Gln Glu Cys Gln Lys Ala Thr
 370 375 380
 Gly Leu Glu Ser Glu Val Ser Ala Tyr Arg Asp His Leu Arg Glu Gln
 385 390 395 400
 Ile Thr Glu Phe Glu Thr Gln Gly Leu Asp Val Ile Lys Glu Glu Leu
 405 410 415
 Leu Phe Val Ser Ser Thr Leu Lys Ser Lys Leu Ser Tyr Asp Pro Leu
 420 425 430
 Ile Ala Asp Ile Pro Cys Met Lys Phe Tyr Glu Glu Tyr Tyr Asp Gly
 435 440 445
 Ile Asp Lys Ala Arg Val Gln Ser Arg Trp Leu Glu Lys Ser Glu Arg
 450 455 460
 Tyr Arg Lys Ala Lys Lys Gly Phe Gln Glu Met Leu Lys Glu Gly Leu
 465 470 475 480
 Phe Lys Glu Asp Gln Ala Leu Lys Lys Ala Glu Tyr Arg Leu Leu Arg
 485 490 495
 Glu Lys Arg Met Asn Lys Glu Lys Leu Leu Ile Cys Asn Lys Ile Glu
 500 505 510
 Ala Ala Gln Gln Arg Val Gln Glu Phe Gly Pro Ser Asp Ser
 515 520 525
 <210>68
 <211>705
 <212>PRT

<213>Chlamydia pneumoniae

<400>68

Met	Lys	Glu	Leu	Arg	His	Glu	Ser	Tyr	Asn	Arg	Ala	Leu	His	Lys	Leu	1	5	10	15
Ser	His	Gln	Trp	Val	Arg	Tyr	Phe	Leu	Tyr	Thr	Phe	Val	Ser	Cys	Ser	20	25	30	
Phe	Ile	Val	Ala	Ile	Phe	Thr	Phe	Ala	Trp	Leu	Lys	Val	Leu	Tyr	Val	35	40	45	
Pro	Glu	Xaa	Lys	Ala	Gly	Glu	Ile	Ser	Arg	Ile	Ser	Leu	Thr	Ala	Pro	50	55	60	
Met	Asp	Phe	Xaa	Leu	Ser	Trp	Ser	Ala	His	Lys	Phe	Tyr	Lys	Arg	Thr	65	70	75	80
Ala	His	Ile	Ser	Glu	Ala	Phe	Gly	Lys	Val	Tyr	His	Leu	Thr	Leu	Ser	85	90	95	
Pro	Gly	Ser	Leu	Leu	Ser	Lys	Glu	Gly	Asn	Ala	Asp	Glu	Asn	Thr	Asp	100	105	110	
Tyr	Trp	Phe	Lys	Lys	Ala	Ala	Asp	Phe	Leu	Leu	Ser	Thr	Asn	Phe	Val	115	120	125	
Asp	Ser	Ser	Thr	Gln	Lys	Cys	Leu	Lys	Asp	Leu	Cys	Ile	Tyr	Pro	Pro	130	135	140	
Leu	Leu	Gly	Lys	Glu	Lys	Lys	Thr	Leu	Glu	Ile	Asn	Ile	Asn	Ser	Asn	145	150	155	160
Lys	Gly	Asn	Val	Ile	Ala	Gln	Cys	Phe	Cys	His	Leu	Lys	Ile	Phe	Leu	165	170	175	
Ile	Gln	Glu	Asn	Cys	Pro	Gln	Pro	Cys	Phe	Asp	Ala	Ile	Met	Asp	Ile	180	185	190	
Leu	Lys	Ile	Ala	Asn	Phe	Glu	Val	Ala	Val	Asp	Lys	Glu	Met	Ser	Gly	195	200	205	
Cys	Val	Lys	Gly	Glu	Leu	Leu	Gly	Lys	Arg	Cys	Ile	Glu	Lys	Ile	Thr	210	215	220	
Lys	Gly	Thr	Pro	Ile	Leu	Glu	Lys	Tyr	Gln	Arg	Ile	Asp	Asp	Arg	Asp	225	230	235	240
Ala	Lys	Ile	Leu	Lys	Gln	Leu	Arg	Ala	Gln	Leu	Leu	Ser	Val	His	Thr	245	250	255	
Leu	Phe	Ser	Cys	Arg	Ser	Leu	Trp	Gly	Ala	Ile	Phe	Val	Val	Leu	Leu	260	265	270	
Ile	Leu	Leu	Trp	Gly	Tyr	Gly	Ala	Leu	Lys	Ala	Leu	Cys	Pro	Glu	Met	275	280	285	
Leu	Lys	Ser	Pro	Gln	Arg	Phe	Met	Leu	Tyr	Ile	Ala	Ile	Leu	Thr	Leu	290	295	300	
Ser	Leu	Leu	Trp	Cys	Arg	Gly	Thr	Glu	Ile	Phe	Cys	Ala	Tyr	Trp	Val	305	310	315	320
Ser	Tyr	Leu	Ser	Tyr	Pro	Pro	Ile	Leu	Pro	Phe	Thr	Ala	Val	Leu	Leu	325	330	335	
Gly	Tyr	Phe	Leu	Gly	Leu	Pro	Ile	Ala	Gly	Phe	Ser	Cys	Thr	Phe	Leu	340	345	350	
Ala	Leu	Leu	Tyr	Thr	Leu	Gly	Ser	Asp	Leu	Trp	Asn	Asn	Ser	Trp	Phe	355	360	365	
Leu	Ser	Ile	Asn	Leu	Leu	Cys	Ser	Trp	Arg	Ile	Leu	Val	Ser	Leu	His	370	375	380	
Arg	Val	Ser	Arg	Leu	Ser	Ser	Val	Phe	Trp	Ala	Cys	Met	Lys	Leu	Gly	385	390	395	400
Gly	Val	Ala	Met	Gly	Ser	Leu	Leu	Met	Phe	Arg	Ile	Phe	Thr	Asn	Thr	405	410	415	
Ile	Ser	Arg	Glu	Ala	Leu	Tyr	Ala	Asp	Gly	Ile	Glu	Ser	Phe	Val	Tyr	420	425	430	
Ser	Leu	Ile	Thr	Ala	Ile	Ser	Val	Val	Ala	Leu	Ile	Pro	Val	Phe	Glu	435	440	445	
Ala	Ser	Phe	Gly	Ala	Ser	Thr	Asn	Phe	Ser	Leu	Leu	Thr	Tyr	Leu	Ser	450	455	460	
Pro	Glu	Asn	Ala	Leu	Leu	Lys	Arg	Leu	Phe	Lys	Glu	Ala	Pro	Gly	Thr	465	470	475	480
Tyr	Gln	His	Ser	Val	Leu	Val	Gly	Ser	Leu	Ala	Glu	Ala	Ala	Ala	Gln	485	490	495	

Ala Ile Gly Ala Asp Ser Leu Tyr Cys Leu Val Ala Ala His Tyr His
 500 505 510
 Asp Ile Gly Lys Leu Ile Asn Pro Gly Phe Phe Ser Glu Asn Gln Lys
 515 520 525
 Ile Leu Gln Gln Ser Gly His Ser Leu Ser Pro Leu Glu Cys Ala Lys
 530 535 540
 Met Ile Met Arg His Ile Pro Glu Gly Val Asn Leu Ala Arg Gln Xaa
 545 550 555 560
 Gly Leu Pro Glu Ser Asp Ile Gln Val Ile Glu Glu His His Gly Thr
 565 570 575
 Ser Val Ile Arg Ser Ala Tyr Tyr Ser His Met Val Glu Asn Pro Ser
 580 585 590
 Thr Gly Ser Phe Asp Glu Glu Leu Phe Arg Tyr Ser Gly Asn Lys Pro
 595 600 605
 Ser Ser Lys Glu Thr Thr Ile Ile Met Ile Ala Asp Ser Phe Glu Ala
 610 615 620
 Ala Ser Arg Ser Leu Lys Asn Ala Ser Leu Pro Asp Leu Gln Arg Leu
 625 630 635 640
 Ile Asp Gln Ile Ile Gln Gly Lys Leu Gln Asp Gly Gln Phe Ser Cys
 645 650 655
 Ser Pro Ile Thr Leu Asp Glu Leu Ala Leu Ile Ser Lys Ser Met Val
 660 665 670
 Gln Thr Leu Tyr Gly Ala Leu His Ser Arg Met Lys Tyr Pro Glu Ile
 675 680 685
 Ser Tyr Gln Ile Ser Met Asp Ser Cys Pro Lys Pro Ser Ile Gly Gly
 690 695 700

Thr

705

<210>69

<211>224

<212>PRT

<213>Chlamydia pneumoniae

<400>69

Val Ile Ser Cys Gln Gly Lys Arg Pro Leu Arg Tyr Cys Phe Leu Glu
 1 5 10 15
 Ile Gln Ile Leu Ala Lys Ala Gln Val His Glu Cys Ile Ser Phe Xaa
 20 25 30
 Arg Ser Trp Tyr Pro Lys Leu Trp Phe Gln Leu Ser Thr Thr Glu Thr
 35 40 45
 Thr Gly Asp Arg Glu Lys Lys Ile Pro Leu His Leu Val Glu Asn Ser
 50 55 60
 Tyr Phe Phe Thr Asp Gly Val Asp Ala Leu Val His Lys Gly Val Cys
 65 70 75 80
 Asp Leu Ala Ile His Ser Ala Lys Asp Leu Pro Glu Thr Pro Ser Leu
 85 90 95
 Pro Val Val Ala Ile Thr Arg Cys Leu His Pro Ala Asp Leu Leu Val
 100 105 110
 Tyr Ala Asp His Tyr Val His Glu Pro Leu Pro Leu Ser Pro Arg Leu
 115 120 125
 Gly Ser Ser Ser Leu Arg Arg Ser Ala Val Leu Lys Gln Leu Phe Pro
 130 135 140
 Gln Gly Gln Ile Leu Asp Ile Arg Gly Thr Ile Glu Glu Arg Leu Asp
 145 150 155 160
 Gln Leu His Arg Gly His Tyr Asp Ala Ile Val Leu Ala Lys Ala Ala
 165 170 175
 Ser Leu Arg Leu His Leu His His Ala Tyr Ser Ile Glu Leu Pro Pro
 180 185 190
 Pro Tyr His Ala Leu Gln Gly Ser Leu Ala Ile Thr Ala Lys Asp His
 195 200 205
 Ala Gly Lys Trp Lys Gln Leu Phe Thr Pro Ile His Cys His Ser Ser
 210 215 220

<210>70

<211>334

<212>PRT

<213>Chlamydia pneumoniae

<400>70

Arg Ile Cys Asn Ala Asp Val Phe Glu Ser Glu Ala Leu Asn Ile Ser
 1 5 10 15
 Ser Pro Leu Ile Tyr Leu Phe Pro Glu Thr Asn Leu Asp Asn Ile Lys
 20 25 30
 Gln Gln Ile Ala Thr Leu Glu Pro Asp Ile Leu Ile Ile Asp Ser Ile
 35 40 45
 Gln Ile Ile Phe Asn Pro Thr Leu Asn Ser Ala Pro Gly Ser Val Ala
 50 55 60
 Gln Val Arg Glu Val Thr Tyr Glu Leu Met Gln Ile Ala Lys Ser Ala
 65 70 75 80
 Gln Ile Thr Thr Phe Ile Ile Gly His Val Thr Lys Ser Gly Glu Ile
 85 90 95
 Ala Gly Pro Arg Val Leu Glu His Leu Val Asp Thr Val Leu Tyr Phe
 100 105 110
 Glu Gly Asn Ser His Ala Asn Tyr Arg Met Ile Arg Ser Val Lys Asn
 115 120 125
 Arg Phe Gly Pro Thr Asn Glu Leu Leu Ile Leu Ser Met His Ala Asp
 130 135 140
 Gly Leu Lys Glu Val Ser Asn Pro Ser Gly Leu Phe Leu Gln Glu Lys
 145 150 155 160
 Thr Gly Pro Thr Thr Gly Ser Met Ile Ile Pro Ile Ile Glu Gly Ser
 165 170 175
 Gly Ala Leu Leu Ile Glu Leu Gln Ala Leu Val Ser Ser Ser Pro Phe
 180 185 190
 Ala Asn Pro Val Arg Lys Thr Ala Gly Phe Asp Pro Asn Arg Phe Ser
 195 200 205
 Leu Leu Leu Ala Val Leu Glu Lys Arg Ala Gln Val Lys Leu Phe Thr
 210 215 220
 Met Asp Val Phe Leu Ser Ile Thr Gly Gly Leu Lys Ile Ile Glu Pro
 225 230 235 240
 Ala Ala Asp Leu Gly Ala Leu Leu Ala Val Ala Ser Ser Leu Tyr Asn
 245 250 255
 Arg Leu Leu Pro Asn Asn Ser Ile Val Ile Gly Glu Val Gly Leu Gly
 260 265 270
 Gly Glu Ile Arg His Val Ala His Leu Glu Arg Arg Ile Lys Glu Gly
 275 280 285
 Lys Leu Met Gly Phe Glu Gly Ala Ile Leu Pro Glu Gly Gln Ile Ser
 290 295 300
 Ser Leu Pro Lys Glu Ile Arg Glu Asn Phe Arg Leu Gln Gly Val Lys
 305 310 315 320
 Thr Ile Lys Arg Cys Tyr Pro Ser Val Thr Leu Thr Pro Val
 325 330

<210>71

<211>97

<212>PRT

<213>Chlamydia pneumoniae

<400>71

Glu Thr Tyr Val Pro Leu Leu Pro Pro Arg Glu Glu Ile Leu Pro Leu
 1 5 10 15
 Met Ser Gly Asn Pro Lys Asn Leu Leu Gln Gln Phe Thr Gln Lys Gln
 20 25 30
 Phe Arg Val Leu Pro Val Tyr Gln Ser Thr Ala Val Thr Asp Ala Gln
 35 40 45
 Gly Asn Val Ser Tyr Gln Ile Gln Val Leu Val Asn Gln Glu Val Trp
 50 55 60
 Gly Glu Gly Asn Ala Ser Ser Lys Lys Glu Ala Glu Lys Ile Ala Ala
 65 70 75 80
 Gln Gln Ala Leu Asp Thr Tyr Gly Asn Lys Asn Gln Asn Thr Met Asp
 85 90 95
 Val

<210>72

<211>168

<212>PRT

<213>Chlamydia pneumoniae

<400>72

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Ile Pro Asn Ser Lys Phe Lys Asp Gly Ala Leu Leu Ser Met His Pro
 1           5           10           15
Pro Ile Asp Ile Thr Ala Ile Glu Ala Lys Leu Asn Phe Thr Phe Thr
          20           25           30
Gln Pro Lys Leu Leu Glu Ile Ala Leu Thr His Pro Ser Tyr Lys Asn
          35           40           45
Glu Ser Ala Val Gln Ile Glu Asp Ser Glu Arg Leu Glu Phe Leu Gly
          50           55           60
Asp Ala Val Leu Gly Leu Ile Val Thr Glu His Leu Phe Leu Leu Phe
          65           70           75           80
Pro Ser Met Asp Glu Gly Thr Leu Ser Thr Ala Arg Ala Ser Leu Val
          85           90           95
Asn Ala Lys Ala Cys Cys Arg Tyr Thr Met Leu Gly Ile Gly Asp
          100          105          110
Tyr Leu Leu Ile Gly Lys Gly Glu Lys Ile Gln Ser Glu Arg Gly Arg
          115          120          125
Leu Ser Ala Tyr Ala Asn Leu Phe Glu Ser Ile Leu Gly Ala Val Tyr
          130          135          140
Leu Asp Gly Gly Leu Ser Pro Ala Arg Lys Leu Thr Phe Pro Ser Phe
          145          150          155          160
Leu Leu Glu Lys Lys Phe Phe Leu
          165

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<210>73

<211>165

<212>PRT

<213>Chlamydia pneumoniae

<400>73

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Cys Phe Trp Ile Cys Tyr Leu Ile Arg Ile Arg Met Arg Ser Ala Leu
 1           5           10           15
His Leu Gln His Leu Arg His Phe His Asn His Gly Ser Ile Leu Phe
          20           25           30
Glu Asn Leu Leu Thr Ile Lys Asp Cys Phe Leu Leu Glu Thr Lys Leu
          35           40           45
Gln Asn Phe Ile Ala Lys Ala Ser Lys Thr Ile Asp Thr Val Arg Trp
          50           55           60
Arg Glu Asn Ile Phe Arg Ser Met Pro Glu Ile Tyr Thr Val Val Arg
          65           70           75           80
Lys Arg Arg Leu Asp Phe Phe Ala Ala Glu Leu Val His Arg Pro Lys
          85           90           95
Leu Ser Leu Val Arg Asp Leu Trp Val Phe Pro Gly Glu Glu Ile Leu
          100          105          110
Glu Gly Glu Glu Asp Cys Met Leu Phe Leu Leu Leu Ser Gly Asp Arg
          115          120          125
Ala Gly Ser Gly Ile Phe Phe Thr Gly Pro Tyr Pro Ser Asp Leu Tyr
          130          135          140
Glu Leu Glu Lys Gly Thr Thr Gly Leu Leu Leu Ala Phe Ser Ser Val
          145          150          155          160
Gly Ile Pro Val Ile
          165

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<210>74

<211>595

<212>PRT

<213>Chlamydia pneumoniae

<400>74

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Glu Phe Leu Lys Leu Ser Leu His Arg Ile Ser Leu Met Lys Glu Val
 1           5           10           15
Glu Gln Arg Ile Arg Ser Leu Tyr Asp Ala Val Thr Ala Glu Asn Ile
          20           25           30
Cys Arg Trp Leu Ser Asn Asp Cys Thr Gln Gln Asp Ala Lys Thr Ile
          35           40           45

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Leu	Gly	Trp	Leu	Asp	Thr	Asp	Pro	Ala	Gln	Leu	Glu	Asp	Leu	Phe	Gly	50	55	60
Ala	Thr	Leu	Thr	Phe	Gly	Thr	Gly	Gly	Leu	Arg	Ser	Leu	Met	Gly	Ile	65	70	75
Gly	Thr	Asn	Arg	Ile	Asn	Leu	Phe	Thr	Ile	Arg	Arg	Thr	Thr	Gln	Gly	85	90	95
Leu	Val	Gln	Val	Leu	Arg	Ala	His	Leu	Pro	His	Pro	Gly	Asp	Pro	Met	100	105	110
Arg	Val	Val	Val	Gly	Cys	Asp	Thr	Arg	His	Asn	Ser	Ile	Glu	Phe	Ala	115	120	125
Gln	Glu	Thr	Ala	Lys	Val	Leu	Ala	Gly	Asn	Gly	Cys	Glu	Val	Phe	Leu	130	135	140
Phe	Gln	Tyr	Pro	Glu	Pro	Leu	Ala	Leu	Val	Ser	Phe	Thr	Val	Arg	Tyr	145	150	155
Glu	Arg	Ala	Ile	Gly	Gly	Val	Met	Ile	Thr	Ala	Ser	His	Asn	Pro	Pro	165	170	175
Asn	Tyr	Asn	Gly	Tyr	Lys	Val	Tyr	Met	Ala	Ser	Gly	Gly	Gln	Val	Leu	180	185	190
Pro	Pro	Leu	Asp	Gln	Glu	Ile	Val	Ala	Ala	Cys	Ser	Ala	Val	Asn	Glu	195	200	205
Ile	Leu	Ser	Val	Pro	Ser	Ile	Asp	His	Pro	Asn	Ile	His	Leu	Ile	Gly	210	215	220
Lys	Glu	Tyr	Glu	Ala	Leu	Tyr	Arg	Asp	Thr	Leu	Lys	Gln	Leu	Gln	Leu	225	230	235
Tyr	Pro	Glu	Ala	Asn	Arg	Ile	Ser	Gly	Arg	Ser	Leu	Ser	Ile	Ser	Tyr	245	250	255
Ser	Pro	Leu	His	Gly	Thr	Gly	Ile	Ser	Leu	Val	Pro	His	Val	Leu	Lys	260	265	270
Asp	Trp	Gly	Phe	Leu	Ser	Val	His	Leu	Val	Glu	Lys	Gln	Ala	Ile	Gly	275	280	285
Asp	Gly	Asp	Phe	Pro	Thr	Val	Gln	Leu	Pro	Asn	Pro	Glu	Asp	Pro	Glu	290	295	300
Ala	Leu	Thr	Leu	Gly	Thr	Glu	Gln	Met	Leu	Ala	Asn	Asp	Asp	Asp	Leu	305	310	315
Phe	Ile	Ala	Thr	Asp	Pro	Asp	Ala	Asp	Arg	Val	Gly	Val	Val	Cys	Leu	325	330	335
Glu	Asp	Gly	Gln	Pro	Tyr	Arg	Phe	Asn	Gly	Asn	Gln	Met	Ala	Ser	Leu	340	345	350
Leu	Ala	Asp	His	Ile	Leu	Gly	Ala	Trp	Ser	Lys	Thr	Arg	His	Leu	Gly	355	360	365
Glu	His	Asp	Lys	Leu	Val	Lys	Ser	Leu	Val	Thr	Thr	Glu	Met	Leu	Ser	370	375	380
Ala	Ile	Ala	Lys	His	Tyr	His	Val	Asp	Leu	Ile	Asn	Val	Gly	Thr	Gly	385	390	395
Phe	Lys	Tyr	Ile	Gly	Glu	Lys	Ile	Glu	Ser	Trp	Arg	Asn	Ser	Thr	Asn	405	410	415
Lys	Phe	Val	Phe	Gly	Ala	Glu	Glu	Ser	Tyr	Gly	Cys	Leu	Tyr	Gly	Thr	420	425	430
His	Val	Glu	Asp	Lys	Asp	Ala	Ile	Ile	Ala	Ser	Ala	Leu	Ile	Ala	Glu	435	440	445
Ala	Ala	Leu	Gln	Gln	Lys	Leu	Gln	Gly	Lys	Thr	Leu	Cys	Asp	Ala	Leu	450	455	460
Leu	Ser	Leu	Tyr	Glu	Thr	Tyr	Gly	Tyr	Phe	Ala	Asn	Lys	Thr	Glu	Ser	465	470	475
Val	Val	Phe	Ser	Ala	Lys	Thr	Asp	Glu	Gln	Glu	Ile	Arg	Lys	Lys	Leu	485	490	495
Ser	His	Leu	Glu	Ile	Ser	Ser	Ala	Asn	Phe	Phe	Ser	Gly	Lys	Tyr		500	505	510
Gln	Val	Glu	Lys	Phe	Glu	Asn	Tyr	Lys	Gln	Gly	Ile	Gly	Phe	Asn	Leu	515	520	525
Leu	Ser	Lys	Asp	Ser	Tyr	Ala	Leu	Thr	Leu	Pro	Lys	Thr	Ser	Met	Leu	530	535	540
Cys	Tyr	Tyr	Phe	Ser	Gly	Gly	Gly	Arg	Val	Ile	Ile	Arg	Pro	Ser	Gly	545	550	555

Thr Glu Pro Lys Ile Lys Phe Tyr Phe Glu Met Ser Thr His Tyr Pro
 565 570 575
 Glu Arg Val Thr Asp Lys Glu Ile Gln Lys His Val Lys Gln Arg Val
 580 585 590
 Phe Asn Ile
 595

<210>75

<211>214

<212>PRT

<213>Chlamydia pneumoniae

<400>75

Ile Leu Lys Arg Tyr Val Val Met Ser Phe Val Pro Tyr Ser Leu Pro
 1 5 10 15
 Glu Leu Pro Tyr Asp Tyr Asp Ala Leu Glu Pro Val Ile Ser Ser Glu
 20 25 30
 Ile Met Ile Leu His His Gln Lys His His Gln Ile Tyr Ile Asn Asn
 35 40 45
 Leu Asn Ala Ala Leu Lys Arg Leu Asp Ala Ala Glu Thr Gln Gln Asn
 50 55 60
 Leu Asn Glu Leu Ile Ala Leu Glu Pro Ala Leu Arg Phe Asn Gly Gly
 65 70 75 80
 Gly His Ile Asn His Ser Leu Phe Trp Glu Thr Leu Ala Pro Ile Asp
 85 90 95
 Gln Gly Gly Gly Gln Pro Pro Asn His Glu Leu Leu Ser Leu Ile Glu
 100 105 110
 Arg Phe Trp Gly Thr Met Asp Asn Phe Leu Lys Lys Leu Ile Glu Val
 115 120 125
 Ala Ala Gly Val Gln Gly Ser Gly Trp Ala Trp Leu Gly Phe Cys Pro
 130 135 140
 Ala Lys Gln Glu Leu Val Leu Gln Ala Thr Ala Asn Gln Asp Pro Leu
 145 150 155 160
 Glu Pro Leu Thr Gly Lys Leu Pro Leu Leu Gly Val Asp Val Trp Glu
 165 170 175
 His Ala Tyr Tyr Leu Gln Tyr Lys Asn Val Arg Met Asp Tyr Leu Lys
 180 185 190
 Ala Phe Pro Gln Ile Ile Asn Trp Gly His Ile Glu Asn Arg Phe Ser
 195 200 205
 Glu Ile Ile Ser Ser Lys
 210

<210>76

<211>255

<212>PRT

<213>Chlamydia pneumoniae

<400>76

Ile Arg Trp Leu Val Arg Leu Phe Ser Tyr Asp Lys Pro Lys Ile Lys
 1 5 10 15
 Val Gln Lys Ile Lys Ala Asp Gly Phe Ser Gly Trp Leu Lys Cys Asn
 20 25 30
 His Cys His Glu Met Ile His Ala Asn Glu Leu Gly Gln Asn Tyr Asn
 35 40 45
 Cys Cys Pro Lys Cys Ser Tyr His Tyr Arg Ile Thr Ala Ile Glu Arg
 50 55 60
 Val Lys Leu Leu Ala Asp Lys Asp Ser Trp Arg Pro Leu Tyr Thr Asp
 65 70 75 80
 Leu Lys Ser Gln Asp Pro Leu Glu Phe Ile Asp Thr Asp Thr Tyr Ala
 85 90 95
 Asn Arg Leu Glu Lys Ala Arg Lys Asn Thr Thr Glu Ser Glu Gly Val
 100 105 110
 Ile Val Gly Ile Cys Thr Ile Gly Leu His Pro Val Ala Leu Ala Val
 115 120 125
 Met Asp Phe Asn Phe Met Ala Gly Ser Met Gly Ala Val Val Gly Xaa
 130 135 140
 Lys Leu Thr Arg Leu Ile Glu Glu Ala Ile Glu Thr Arg Leu Pro Val
 145 150 155 160

Ile Ile Val Ser Ala Ser Gly Gly Ala Arg Met Gln Glu Ser Val Phe
 165 170 175
 Ser Leu Met Gln Met Val Lys Thr Ser Ala Ala Leu Ala Lys Leu His
 180 185 190
 Glu Ala Gly Leu Pro Tyr Ile Ser Val Leu Thr Asn Pro Thr Ser Gly
 195 200 205
 Gly Val Thr Ala Ser Phe Ala Ala Leu Gly Asp Ile Ile Ile Ala Glu
 210 215 220
 Pro Lys Ala Leu Ile Cys Phe Ala Gly Pro Arg Val Val Ala Gln Val
 225 230 235 240
 Ile Gly Glu Asp Leu Pro Glu Gly Phe Lys Asn Leu Asn Ser Tyr
 245 250 255

<210>77

<211>90

<212>PRT

<213>Chlamydia pneumoniae

<400>77

Ile Cys Asn Ala Ile Leu Met Thr Val Phe Cys Glu Leu Asp Ser Gly
 1 5 10 15
 Gly Glu Leu Pro Glu Tyr Thr Thr Pro Gly Ala Ala Gly Ala Asp Leu
 20 25 30
 Arg Ala Asn Ile Glu Glu Pro Ile Ala Leu Leu Pro Gly Gln Arg Ala
 35 40 45
 Leu Ile Pro Thr Gly Ile Lys Ala Glu Ile Pro Glu Val Arg Ala Thr
 50 55 60
 Gly Pro Ser Ser Glu Arg Phe Gly Phe Lys Ala Arg His Tyr Cys Phe
 65 70 75 80
 Lys Phe Pro Arg Asp Tyr Arg Phe Arg Leu
 85 90

<210>78

<211>101

<212>PRT

<213>Chlamydia pneumoniae

<400>78

Ser Leu Pro Glu Ser Lys Gln Lys Phe Pro Lys Tyr Glu Leu Gln Val
 1 5 10 15
 Arg Pro Arg Ser Gly Leu Ala Leu Lys His Gly Ile Thr Val Leu Asn
 20 25 30
 Ser Pro Gly Thr Ile Asp Ser Asp Tyr Arg Gly Glu Ile Arg Val Ile
 35 40 45
 Leu Ile Asn Phe Gly Asp Ser Thr Phe Ile Ile Glu Pro Lys Met Arg
 50 55 60
 Ile Ala Gln Val Val Leu Ser Pro Val Val Gln Ala Thr Phe Val Val
 65 70 75 80
 Lys Gln Xaa Ser Leu Ala Glu Thr Ala Arg Gly Ser Gly Gly Phe Gly
 85 90 95
 His Thr Gly Ala Ser
 100

<210>79

<211>169

<212>PRT

<213>Chlamydia pneumoniae

<400>79

Val Glu Val Leu Val Ile Leu Glu Gln Ala Lys Met Pro Ser Tyr Cys
 1 5 10 15
 Gln Asn Gln Gln Asp Phe Ser Leu Phe Ser Leu Leu Ser Pro Arg Leu
 20 25 30
 Val Met Phe Leu Gly Lys His Ser Arg Asp Glu Ile Leu Gln Asp Leu
 35 40 45
 Thr Asp Leu Val Asp Ala Ala Gly Leu Leu Glu Asp Lys Gln Ala Phe
 50 55 60
 Phe Asp Ala Leu Val Arg Arg Glu Asn Ile Met Ser Thr Gly Ile Gly
 65 70 75 80
 Met Gly Val Ala Ile Pro His Gly Lys Leu Glu Ser Cys Ser Asn Phe

85 90 95
 Phe Ile Ala Ile Gly Ile His Thr Gln Gly Ile Leu Trp Asp Ala Ile
 100 105 110
 Asp Gly Ala Leu Val Arg Leu Val Phe Leu Ile Gly Gly Pro Glu Asn
 115 120 125
 Ala Gln Ala Glu Tyr Leu Lys Leu Leu Ser Thr Leu Thr Leu Ser Leu
 130 135 140
 Arg Glu Glu Ser Arg Arg Gln Gln Leu Leu Gln Val Asn Thr Ile Glu
 145 150 155 160
 Glu Val Met Asn Val Phe Val Gly Met
 165

<210>80

<211>225

<212>PRT

<213>Chlamydia pneumoniae

<400>80

Met Asp Leu Lys Leu Asp Glu Val Ala Ser Leu Leu Asp Val Ser Glu
 1 5 10 15
 His Thr Val Leu Gln Trp Leu Lys Glu Gly Ala Ile Pro Ser Tyr Ser
 20 25 30
 Met Asn Asn Glu Tyr Arg Phe Ser Arg Glu Glu Ile Glu Asp Trp Leu
 35 40 45
 Leu His Asn Gln Ala Leu Met Ile Gln Glu Arg Gly Glu Asp Lys Glu
 50 55 60
 Ala Leu Lys Asp Leu Ser Leu Lys Tyr Ser Leu Tyr Lys Ala Ile His
 65 70 75 80
 Arg Gly Gly Val Leu Cys Asp Val Val Val His Ser Lys Glu Glu Ala
 85 90 95
 Leu Gln Tyr Ala Ser Lys Tyr Ile Ala Gln Lys Phe Gln Leu Asp Glu
 100 105 110
 Ser Val Leu Phe Glu Met Leu Ser His Arg Glu Asn Leu Met Ser Thr
 115 120 125
 Gly Ile Gly Glu Gly Ile Ala Leu Pro His Ala Lys Asp Phe Leu Ile
 130 135 140
 Asn Ala Tyr Tyr Asp Ile Val Val Pro Met Phe Leu Ala Glu Pro Ile
 145 150 155 160
 Glu Tyr Gly Ala Leu Asp Gly Lys Pro Val Gly Ile Leu Phe Phe Leu
 165 170 175
 Phe Ala Cys Gln Asp Lys Ser His Leu Asn Leu Val Asn Lys Ile Val
 180 185 190
 His Leu Gly Met Ser Leu Asn Ala Arg Ser Phe Phe Lys Asn Tyr Pro
 195 200 205
 Asn Lys Asp Gln Leu Leu Ala Tyr Val Lys Glu Trp Glu Ser Gln Thr
 210 215 220

His

225

<210>81

<211>480

<212>PRT

<213>Chlamydia pneumoniae

<400>81

Lys Lys Ser Phe Cys Cys Tyr Gly Asp Pro His Arg Leu Pro Gly Asp
 1 5 10 15
 Cys Ser Arg Met Met Ser Ser Lys Arg Thr Ser Lys Ile Ala Val Leu
 20 25 30
 Ser Ile Leu Leu Thr Phe Thr His Ser Ile Gly Phe Ala Asn Ala Asn
 35 40 45
 Ser Ser Val Gly Leu Gly Thr Val Tyr Ile Thr Ser Glu Val Val Lys
 50 55 60
 Lys Pro Gln Lys Gly Ser Glu Arg Lys Gln Ala Lys Lys Glu Pro Arg
 65 70 75 80
 Ala Arg Lys Gly Tyr Leu Val Pro Ser Ser Arg Thr Leu Ser Ala Arg
 85 90 95
 Ala Gln Lys Met Lys Asn Ser Ser Arg Lys Glu Ser Ser Gly Gly Cys

95

Ala Thr Ile Leu Gln Ala Arg Asn Ser Tyr Lys Lys Ala Val Asn Gln
 100 105 110
 Lys Lys Leu Ser Glu Pro Leu Met Glu Arg Pro Glu Leu Lys Ala Leu
 115 120 125
 Asp Tyr Ser Leu Asp Leu Lys Glu Val Trp Asp Leu His His Ser Cys
 130 135 140
 Cys Gln His Leu Lys Lys Ile Asp Leu Asn Leu Ser Glu Thr Gln Arg
 145 150 155 160
 Glu Val Leu Asn Gln Ile Lys Ile Asp Asp Glu Gly Pro Ser Leu Gly
 165 170 175
 Glu Cys Ala Ala Met Ile Ser Glu Asn Tyr Asp Ala Cys Leu Lys Met
 180 185 190
 Leu Ala Tyr Arg Glu Glu Leu Leu Lys Glu Gln Thr Gln Tyr Gln Glu
 195 200 205
 Thr Arg Phe Asn Gln Asn Leu Thr His Arg Asn Lys Val Leu Leu Ser
 210 215 220
 Ile Leu Ser Arg Ile Thr Asp Asn Ile Ser Lys Ala Gly Gly Val Phe
 225 230 235 240
 Ser Leu Lys Phe Ser Thr Leu Ser Ser Arg Met Ser Arg Ile His Thr
 245 250 255
 Thr Thr Thr Val Ile Leu Ala Leu Ser Ala Val Val Ser Val Met Val
 260 265 270
 Val Ala Ala Leu Ile Pro Gly Gly Ile Leu Ala Leu Pro Ile Leu Leu
 275 280 285
 Ala Val Ala Ile Ser Ala Gly Val Ile Val Thr Gly Leu Ser Tyr Leu
 290 295 300
 Val Arg Gln Ile Leu Ser Asn Thr Lys Arg Asn Arg Gln Asp Phe Tyr
 305 310 315 320
 Lys Asp Phe Val Lys Asn Val Asp Ile Glu Leu Leu Asn Gln Thr Val
 325 330 335
 Thr Leu Gln Arg Phe Leu Phe Glu Met Leu Lys Gly Val Leu Lys Glu
 340 345 350
 Glu Glu Glu Val Ser Leu Glu Gly Gln Asp Trp Tyr Thr Gln Tyr Ile
 355 360 365
 Thr Asn Ala Pro Ile Glu Lys Arg Leu Ile Glu Glu Ile Arg Val Thr
 370 375 380
 Tyr Lys Glu Ile Asp Ala Gln Thr Lys Lys Met Lys Thr Asp Leu Glu
 385 390 395 400
 Phe Leu Glu Asn Glu Val Arg Ser Gly Arg Leu Ser Val Ala Ser Pro
 405 410 415
 Ser Glu Asp Pro Ser Glu Thr Pro Ile Phe Thr Gln Gly Lys Glu Phe
 420 425 430
 Ala Lys Leu Arg Arg Gln Thr Ser Gln Asn Ile Ser Thr Ile Tyr Gly
 435 440 445
 Pro Asp Asn Glu Asn Ile Asp Pro Glu Phe Ser Leu Pro Trp Met Pro
 450 455 460
 Lys Lys Glu Glu Glu Ile Asp His Ser Leu Glu Pro Val Thr Lys Leu
 465 470 475 480
 Glu Pro Gly Ser Arg Glu Glu Leu Leu Leu Val Glu Gly Val Asn Pro
 485 490 495
 Thr Leu Arg Glu Leu Asn Met Arg Ile Ala Leu Leu Gln Gln Gln Leu
 500 505 510
 Ser Ser Val Arg Lys Trp Arg His Pro Arg Gly Glu His Tyr Gly Asn
 515 520 525
 Val Ile Tyr Ser Asp Thr Glu Leu Asp Arg Ile Gln Met Leu Glu Gly
 530 535 540
 Ala Phe Tyr Asn His Leu Arg Glu Ala Gln Glu Ile Thr Gln Ser
 545 550 555 560
 Leu Gly Asp Leu Val Asp Ile Gln Asn Arg Ile Leu Gly Ile Ile Val
 565 570 575
 Glu Gly Asp Ser Asp Ser Arg Thr Glu Glu Glu Pro Gln Glu
 580 585 590

<210>83

<211>580

<212>PRT

<213>Chlamydia pneumoniae

<400>83

Gly Val Tyr Met Ala Asn Pro Thr Gln Ser Arg Pro Pro Ser Pro Glu
 1 5 10 15
 Ile Ser Ile Glu Glu Leu Glu Leu Gln Glu Leu Ala Gly Ser Ser Asn
 20 25 30
 Thr Glu Thr Ile Ser Asn Thr Pro Pro Pro Ser Cys Ala Ala Thr Ala
 35 40 45
 Glu Glu Val Ser Leu Phe Ile Glu Gly Gly Arg Arg Asn Ser Glu Asp
 50 55 60
 Glu Glu Gly Pro Leu Gly Ser Cys Glu Val Tyr Asp Val Val Cys Ile
 65 70 75 80
 Thr Asn Gln Gly Asp Pro Glu Val Arg Asp His Glu Val Arg Val Met
 85 90 95
 Tyr Ile Asn Gly Ser Gly Arg Thr Gln His Glu Gly Ile Leu Asp Ala
 100 105 110
 Met Asn Ile Cys Asp Leu Arg Gly Glu Pro Val Arg Phe Ile His Asn
 115 120 125
 Ser Gly Tyr Gly Leu Gly Ser Cys Phe Leu Gly Ile Arg Asn Arg Ile
 130 135 140
 Pro Pro Arg Asp Asn Val Ile Ser Gln Ala Ile Gln Ala Arg Trp Asn
 145 150 155 160
 Glu Phe Phe Ile Phe Ala Glu Asn Ala Asn Arg Asp Tyr Ile Val Leu
 165 170 175
 Phe Ser Gly Asn Gly Gly Leu Tyr Leu Gln Val Ala Leu Asp Asn Ser
 180 185 190
 Ile Tyr Ser His His Ile Leu Cys Val Gly Ile Gly Ser Ser Tyr Tyr
 195 200 205
 Ile Gln Gly Asn Tyr Arg Val His Asn Tyr Arg Val Thr Gly Asp Trp
 210 215 220
 Thr Thr Leu Leu Asp Arg Arg Gly Ala Thr Ala Val Asn Thr Thr Thr
 225 230 235 240
 Leu Pro Tyr Ala Asp Ser Ala Glu Gly Leu Phe Leu Pro Ser Val Arg
 245 250 255
 Cys Pro Ser Tyr Gln Trp Ala Leu Arg Cys Gly Glu Gln Cys Leu Ile
 260 265 270
 Met Asp Asn Asn Gln Gln Val Gly Phe Arg Pro Gln Asp Ser Ser Ser
 275 280 285
 Glu Ile Ala Leu Val Val Asn Leu Asn Gln Asp His Ser Thr Trp Thr
 290 295 300
 Arg Leu Ile Glu Trp Ile Asp Arg Gly Asp Ser Gln Ala Val Leu Glu
 305 310 315 320
 Leu Asn Pro Gln Pro Ser His Cys Arg Asp Ile Ala Leu Thr Ala Leu
 325 330 335
 Tyr Ala Thr Thr Arg Ile Ser Ser Leu Leu Gln Glu Cys Leu Met Ile
 340 345 350
 Ser Val Thr Tyr Ala Pro Glu Val Phe Val Thr Tyr Ala Ile Val Thr
 355 360 365
 Gly Tyr Ser Ile Met Thr Leu Arg Tyr Phe Ile Leu Leu Leu Thr Asn
 370 375 380
 Arg Pro Gly Cys Arg Arg His Phe Arg Val Leu Arg Leu Ala Ala Leu
 385 390 395 400
 Gly Leu Gln Ser Leu Gly Phe Leu Thr Val Leu Leu Asp His Ile Asn
 405 410 415
 Val Thr Arg Arg Val Asn Arg Arg Pro Leu Ile Ser Val Ile Phe
 420 425 430
 Cys Thr Ala Ser Phe Ala Thr Gly Ser Phe Ile Tyr Val Asp Leu Thr
 435 440 445
 Arg Met Phe Phe Thr Ser Leu Arg Ser Arg Leu Gln Leu Phe Val Gln
 450 455 460
 Arg Arg Leu Thr Gly Arg Gly Leu Pro Leu Arg Arg Val Phe Val Asn
 465 470 475 480
 His Leu Asp Ser Leu Arg Phe Ser Gln Asn Ala Leu Ile Thr Phe His

485 490 495
 Gly Gly Leu Phe Met Pro Leu Ile Ile Gly Phe Phe Asn Gln Leu Val
 500 505 510
 Ile Gln Val Pro Arg Val Val Ile Arg Pro Asn Thr Thr Ala Val Tyr
 515 520 525
 Asp Leu Asn Gln Thr Ser Gln Glu Ala Trp Asp Ser Gly Asp Val Leu
 530 535 540
 Ala Ile Gly Gln Thr Ile Asn Phe Leu Leu Cys Met Ile Leu Leu Val
 545 550 555 560
 Ile Asn Thr Phe Phe Phe Val Arg Ser Val Arg Arg Asn Leu His Arg
 565 570 575
 Arg Pro His Arg
 580

<210>84

<211>264

<212>PRT

<213>Chlamydia pneumoniae

<400>84

Lys Gly Ser Gly Tyr Ser Tyr Arg Gly Pro Pro Met Ala Val Glu Gly
 1 5 10 15
 Arg Val Asn Ser Ser Gln Ala Leu Asn Gln Asp Cys Gln Glu Val Leu
 20 25 30
 Ala Asn Lys Gln Ser Lys Gly Leu Leu Arg Cys Arg Ile Leu Ser Ile
 35 40 45
 Val Val Ala Val Ile Thr Phe Ile Ala Gly Val Val Leu Ile Ala Leu
 50 55 60
 Thr Leu Ala Ser Ile Leu Thr Ser Val Pro Tyr Leu Ala Leu Gly Val
 65 70 75 80
 Phe Leu Leu Ile Val Thr Leu Gly Cys Ile Ile Phe Ala Leu Cys Ser
 85 90 95
 Glu Lys Ile Lys Lys Val Pro Pro Thr Pro Ile Ser His Lys Glu Glu
 100 105 110
 Ile Ile Ala Trp Phe Glu Glu Arg Lys Asn Ile Asp Met Glu Lys Glu
 115 120 125
 Lys Glu Asp Pro Glu His Phe Gly Arg Thr Ala Thr Asp Ile Pro Met
 130 135 140
 Arg Ser Ala Leu Asp Gln Phe Asn His Ser Cys His His Ile His Glu
 145 150 155 160
 Ser Pro Ala Leu Thr Glu Thr Tyr Arg Ser His Gln Asp Val Leu Leu
 165 170 175
 Phe Lys Asp Trp Cys Pro Val Thr Leu Pro Asp Val Thr Ser Glu Glu
 180 185 190
 Glu Val Leu Ile Arg Ser Val Val Gly Ser Tyr Leu Leu Met Glu Ala
 195 200 205
 Cys Val Pro Lys Val Ser Met Leu Ile Asp Glu Leu His Asn Lys Leu
 210 215 220
 Xaa Ser Pro Ser Glu Arg Glu Cys Leu Phe Ile Asp Lys Lys Thr Leu
 225 230 235 240
 Gln Arg Lys Ala Ser Phe Leu Phe Thr Gln Lys Asp Leu Ala Thr Phe
 245 250 255
 Phe Leu Asp Leu Tyr Ala Gly Glu
 260

<210>85

<211>193

<212>PRT

<213>Chlamydia pneumoniae

<400>85

Ser Phe Met Ile Lys Lys Phe Phe Ile Tyr Ser Leu Ile Phe Ser Cys
 1 5 10 15
 Ser Phe Ser Ala Pro Leu Lys Gly Ile Cys Asn Glu Asp Val Ser Ser
 20 25 30
 Gln Ser Arg Ile Glu Glu Asp Pro Glu Val Leu Ile Thr Gln Leu Asn
 35 40 45
 Glu Leu Ile Glu Thr Pro Ile Glu Glu Gly Lys Glu Ile Arg Asn Glu

50 55 60
 Leu Gln Ala Ile Ser Asp Gly Gln Lys Ser Ser Glu Glu Ile Glu Glu
 65 70 75 80
 Ser Cys Gly Thr Ser Asp Ser Glu Gly Leu Ser Glu Lys Thr Asp Lys
 85 90 95
 Glu Ser Ser Asn Glu Tyr Val Leu Asp Phe Phe Asp Ser Met Val Gln
 100 105 110
 Arg Leu Glu Gly Ile Ser Lys Met Cys Gln Ser Gly Gln Val Ala Gln
 115 120 125
 Ile Ile Asp Cys Phe Asn Arg Glu Phe Asp Ile Arg Asn Arg Glu Leu
 130 135 140
 Glu Leu Lys Asn Arg Glu Leu Glu Leu Arg Glu Lys Asp Leu Glu Phe
 145 150 155 160
 Lys Lys Ser Ile Leu Asp Trp Asn Lys Glu Lys Val Ser Arg Glu Leu
 165 170 175
 Ala Phe Gln Arg Glu Gln Asp Ile Lys Gln Thr Leu Met Leu Leu Lys
 180 185 190
 Lys

<210>86

<211>297

<212>PRT

<213>Chlamydia pneumoniae

<400>86

Asn Phe Lys Ile Trp Gly Ile Arg Ile Thr Ile Ala Val Glu Leu Pro
 1 5 10 15
 Pro Pro Glu Val Gly Gly Glu Leu Pro Pro Tyr Phe Ser Ala Ser Asn
 20 25 30
 Phe Val Val Ile Glu Arg Gly Ala Pro Ser Leu Pro Ser Pro Gln Gln
 35 40 45
 Leu Leu Ser Leu Pro Glu Tyr Ser Arg Gln Pro Pro Pro Gly Tyr Phe
 50 55 60
 Asp Glu Thr Ala Ser Ile Thr Ser Arg Thr Ser Glu Glu Met Phe Gly
 65 70 75 80
 Thr Leu Val Ser Thr Leu Cys Cys Pro Ala Asn Ser Glu Arg Asp Trp
 85 90 95
 Glu Asp His Glu Val Asn Cys Ile Tyr Ile Ala Ser Thr Ser Asp Thr
 100 105 110
 Gln Leu Glu Ala Val Gln Gly Gly Met His Ile Thr Glu Leu Arg Gly
 115 120 125
 Glu Pro Val Arg Val Leu Tyr Glu Thr Gly His Leu Tyr Ala Phe Ala
 130 135 140
 Arg Glu Asn Thr Cys His Ser Arg Leu Glu Val Ser His Thr Val Arg
 145 150 155 160
 Ala Met Thr Tyr Phe Trp Asp Arg Phe Phe Ser Arg His Trp Asn Val
 165 170 175
 Gly Arg Arg Phe Leu Val Phe Tyr Gln Gly Asn Gly Gly Ala Tyr Val
 180 185 190
 Gln Ala Ala Leu Asp Ser Ser Met His Thr Gln Asp Ile Tyr Val Leu
 195 200 205
 Gly Leu Ser Pro Thr Val Tyr Ile Arg Gly Asn Tyr His Val Gln His
 210 215 220
 Tyr Arg Val Arg Gly Phe Trp Pro Ser Cys Leu Asp Ser Leu Ala Ala
 225 230 235 240
 Cys Ala Glu Asn Thr Ser Val Leu Pro Thr Gly Asn Arg Val Thr Glu
 245 250 255
 Ser Phe Thr Pro Leu Tyr Ser Ala Thr His Leu Ile Thr Arg Tyr Gly
 260 265 270
 Met Val Arg Asp Ala Cys Trp Phe Val Leu Arg Ala Trp Glu Cys Phe
 275 280 285
 Gln Lys Arg Asn Asn Lys His Leu Leu
 290 295

<210>87

<211>380

<212>PRT

<213>Chlamydia pneumoniae

<400>87

Arg Glu Leu Ser Arg Thr Ala Leu Pro Cys Ser Arg Ile Leu Ala Leu
 1 5 10 15
 Leu Pro Gly Phe Ser Ser Gly Leu Cys Gly Lys Tyr Ile Ser Thr Ser
 20 25 30
 Tyr Gly Glu Ser Ser Asp Gly Ile Phe Tyr Pro Ser Leu Phe Ser His
 35 40 45
 Thr Phe Asp Asn Ala Ile Arg Tyr Gly Glu Arg Cys Leu Leu Val Cys
 50 55 60
 Ser Glu Gly Met Gly Met Leu Pro Glu Thr Gln Gln Gln Thr Ser Pro
 65 70 75 80
 Leu Thr Ser Leu Glu Gly Gly His Glu Val Ala Leu Val Leu Asn Pro
 85 90 95
 Gln Gln Asn Pro Glu Ala Leu Ser Ile Ala Ser Arg Leu Met His Glu
 100 105 110
 Glu Arg Gly Gly Arg Leu Glu Ser Asn Tyr Met Pro Gly Arg Ser Ser
 115 120 125
 Asn Pro Phe Met Thr Ser Met Tyr Val Leu Val Arg Leu Asn Thr Leu
 130 135 140
 Ala Gln Ile Tyr Leu Met Ser Pro Tyr Tyr Ser Phe Gln Ser Asn Asp
 145 150 155 160
 Ile Val Cys Leu Ile Phe Ile Ser Ser Ala Ala Val Glu Thr Val Ser
 165 170 175
 Tyr Ile Phe Leu Thr Val Thr Asp Ser Thr Cys Gly Arg Arg Tyr Leu
 180 185 190
 Arg Val Pro Arg Leu Val Cys Thr Gly Leu Arg Asn Leu Ala Leu Pro
 195 200 205
 Thr Thr Leu Leu Glu Leu Leu Ile Leu Ser Tyr Pro Arg Ser Val Glu
 210 215 220
 Gly Val Pro Phe Asn Val Arg Phe Ile Leu Gly Tyr Met Cys Thr Thr
 225 230 235 240
 Arg Val Val Phe Phe Ala Trp Asn Leu Ile Leu His Trp Pro Phe Arg
 245 250 255
 Cys Leu Arg His Gly Ile Gln Leu Phe Val His Arg Ser Ile Ile Gly
 260 265 270
 His Thr Leu Gly Ala Arg Ile Thr Asp Leu Thr Leu Ala Ser Met Arg
 275 280 285
 Tyr Ala Ile Val Phe Pro Ser Ile Val Ser Ser Cys Leu Leu Thr Ala
 290 295 300
 Leu Ala His Ala Asn Thr Asn Ile Leu Ala Leu Asp Pro Tyr Arg Leu
 305 310 315 320
 Ile Glu Ser Gly Asp Leu Arg Arg Pro Ala Phe Asn Asp Asp Glu Met
 325 330 335
 Gln Gln Ala Asp Asn Pro Trp Asp Ala Tyr Ser Ile Gly Leu Val Ile
 340 345 350
 Asn Thr Cys Ile Tyr Met Leu Ile Leu Phe Ala Asn Leu Ile Phe Met
 355 360 365
 Val Tyr Ser Val Arg Arg Tyr His Arg Ser Arg Arg
 370 375 380

<210>88

<211>156

<212>PRT

<213>Chlamydia pneumoniae

<400>88

Ile Lys Ser Leu Arg Ser Ile Leu Glu Phe Ile Cys Pro Leu Gln His
 1 5 10 15
 Ala Arg Cys Leu Lys Lys Gln His Lys Ile Ile Glu Glu Leu Phe Pro
 20 25 30
 Glu Pro Phe Gln Lys Asp His Leu Tyr Leu Lys Leu Met Glu Asn Ser
 35 40 45
 Ser Ser Arg Asp Ala Phe Asp Lys Lys Arg Met Leu Lys Glu Asn Leu
 50 55 60

Val Val Gly Cys Gln Ser Asp Leu Tyr Leu Tyr Glu Val Tyr Gln Asp
 65 70 75 80
 Gly Ile Leu Phe Phe Phe Thr Tyr Thr Lys Ala Leu Val Ser Ser Gly
 85 90 95
 Ile Ala Ser Leu Phe Thr Glu Val Tyr Ser Gly Glu Thr Pro Ser Thr
 100 105 110
 Ile Leu Thr Cys Lys Pro Ile Phe Phe Gln Arg Leu Thr Pro Tyr Leu
 115 120 125
 Ser Phe Gly Arg Leu Asn Gly Gly Glu Ser Leu Tyr Met Arg Met Lys
 130 135 140
 Gln Ile Ala Val Gln Tyr Leu Lys Pro Pro Gln Thr
 145 150 155
 <210>89
 <211>345
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>89
 Cys Leu Leu Phe Tyr Phe Phe His Tyr Arg Met Ser Thr Pro Leu Ser
 1 5 10 15
 Ser Gly Gly Ile Ser Pro Ser Asp Gln Tyr Val Pro Gln Glu Leu Phe
 20 25 30
 Cys Asp Arg Leu Ser Ser Ser Arg Ser Asn Ser Pro Asp Ser Asn Ala
 35 40 45
 Ser Gly Asp Ser Pro Ile Val Ser Pro Pro Ile Ser Ala Leu Val Ala
 50 55 60
 Leu Thr Asp Leu Lys Leu Val Pro Tyr Asn Gln Asn Ser Phe Ser Trp
 65 70 75 80
 Thr Thr Arg Leu Lys Asn Ala Val Glu Lys Ile Gly Leu Phe Leu Gln
 85 90 95
 Arg Asn Trp Lys Tyr Ile Leu Leu Tyr Ile Leu Ala Trp Ala Leu Ile
 100 105 110
 Leu Val Cys His His Thr Val Ala Leu Thr Leu Thr Ile Trp Leu Gly
 115 120 125
 Val Gly Leu Gly Ile Gly Val Val Phe Gly Ile Phe Thr Ala Thr Cys
 130 135 140
 Leu Asp Lys Glu Asn Lys His Arg His Val Asn Ser Leu Trp Asn Leu
 145 150 155 160
 Ile Asn His Gly Ile Leu Gln Leu Asp Pro Asn Gly Thr Arg Gln Ile
 165 170 175
 Leu Leu Ala Thr Met Ile Ala Ser Ile Ser Ala Leu Ile Tyr Ala Val
 180 185 190
 Pro Gln Ala Val Gly Leu Val Ile Gly Phe Ser Ile Gly Asn Gln Leu
 195 200 205
 Ser Ile Asn Thr Val Tyr Gly Ala Arg Leu Gly Asp Glu Ala Thr Tyr
 210 215 220
 Ala Ile Asp Arg Lys Ala His Lys Lys Arg Ile Glu Asn Ile Glu Gln
 225 230 235 240
 Ala Ile Asn Gln His Gln Ile Ile Lys His Gln Met Ile Asn Gln Lys
 245 250 255
 Gln Leu Asn Ala Leu Ile Glu Ile Asn Arg Asn Asn Gln Thr Asp Pro
 260 265 270
 Ala Thr Ala Asn Leu Leu Ala Ser Leu Lys Leu Asn Leu Asn Gln Pro
 275 280 285
 Met Pro Tyr Cys Phe Ser Met Pro Glu Cys Gly Val Thr Ser Ser Tyr
 290 295 300
 Leu Asp Leu Asn Asn Asn Ser Pro Asp Asp Ile Ile Ala Arg Ala Asp
 305 310 315 320
 Gln Cys Ile Met Thr Leu Ser Gln Thr Leu Gln Gln Ile Lys Lys Glu
 325 330 335
 Pro Asp Arg Ile Ile Glu Ser Asn His
 340 345
 <210>90
 <211>394
 <212>PRT

<213>Chlamydia pneumoniae

<400>90

Met Ser Lys Glu Thr Phe Gln Arg Asn Lys Pro His Ile Asn Ile Gly
 1 5 10 15
 Thr Ile Gly His Val Asp His Gly Lys Thr Thr Leu Thr Ala Ala Ile
 20 25 30
 Thr Arg Ala Leu Ser Gly Asp Gly Leu Ala Ser Phe Arg Asp Tyr Ser
 35 40 45
 Ser Ile Asp Asn Thr Pro Glu Glu Lys Ala Arg Gly Ile Thr Ile Asn
 50 55 60
 Ala Ser His Val Glu Tyr Glu Thr Pro Asn Arg His Tyr Ala His Val
 65 70 75 80
 Asp Cys Pro Gly His Ala Asp Tyr Val Lys Asn Met Ile Thr Gly Ala
 85 90 95
 Ala Gln Met Asp Gly Ala Ile Leu Val Ser Ala Thr Asp Gly Ala
 100 105 110
 Met Pro Gln Thr Lys Glu His Ile Leu Leu Ala Arg Gln Val Gly Val
 115 120 125
 Pro Tyr Ile Val Val Phe Leu Asn Lys Val Asp Met Ile Ser Gln Glu
 130 135 140
 Asp Ala Glu Leu Ile Asp Leu Val Glu Met Glu Leu Ser Glu Leu Leu
 145 150 155 160
 Glu Glu Lys Gly Tyr Lys Gly Cys Pro Ile Ile Arg Gly Ser Ala Leu
 165 170 175
 Lys Ala Leu Glu Gly Asp Ala Asn Tyr Ile Glu Lys Val Arg Glu Leu
 180 185 190
 Met Gln Ala Val Asp Asp Xaa Ile Pro Thr Pro Glu Arg Glu Ile Asp
 195 200 205
 Lys Pro Phe Leu Met Pro Ile Glu Asp Val Phe Ser Ile Ser Gly Arg
 210 215 220
 Gly Thr Val Val Thr Gly Arg Ile Glu Arg Gly Ile Val Lys Val Ser
 225 230 235 240
 Asp Lys Val Gln Leu Val Gly Leu Gly Glu Thr Lys Glu Thr Ile Val
 245 250 255
 Thr Gly Val Glu Met Phe Arg Lys Glu Leu Pro Glu Gly Arg Ala Gly
 260 265 270
 Glu Asn Val Gly Leu Leu Leu Arg Gly Ile Gly Lys Asn Asp Val Glu
 275 280 285
 Arg Gly Met Val Val Cys Gln Pro Asn Ser Val Lys Pro His Thr Lys
 290 295 300
 Phe Lys Ser Ala Val Tyr Val Leu Gln Lys Glu Glu Gly Gly Arg His
 305 310 315 320
 Lys Pro Phe Phe Ser Gly Tyr Arg Pro Gln Phe Phe Phe Arg Thr Thr
 325 330 335
 Asp Val Thr Gly Val Val Thr Leu Pro Glu Gly Thr Glu Met Val Met
 340 345 350
 Pro Gly Asp Asn Val Glu Leu Asp Val Glu Leu Ile Gly Thr Val Ala
 355 360 365
 Leu Glu Glu Gly Met Arg Phe Ala Ile Arg Glu Gly Gly Arg Thr Ile
 370 375 380
 Gly Ala Gly Thr Ile Ser Lys Ile Asn Ala
 385 390

<210>91

<211>88

<212>PRT

<213>Chlamydia pneumoniae

<400>91

Ser Arg Ser Trp Phe Met Lys Gln Gln His Asn Arg Lys Ala Leu Ser
 1 5 10 15
 Arg Lys Ile Gly Thr Val Lys Lys Gln Ala Lys Phe Ala Gly Ser Phe
 20 25 30
 Leu Asp Glu Ile Lys Lys Ile Glu Trp Val Ser Lys His Asp Leu Lys
 35 40 45
 Lys Tyr Ile Lys Val Val Leu Ile Ser Ile Phe Gly Phe Gly Phe Ala

50 55 60
 Ile Tyr Phe Val Asp Leu Val Leu Arg Lys Ser Ile Thr Cys Leu Asp
 65 70 75 80
 Gly Ile Thr Thr Phe Leu Phe Gly
 85

<210>92

<211>190

<212>PRT

<213>Chlamydia pneumoniae

<400>92

Gln Pro Phe Cys Ser Val Asn Cys Met Tyr Lys Trp Tyr Val Val Gln
 1 5 10 15
 Val Phe Thr Ala Gln Glu Lys Lys Val Lys Lys Ala Leu Glu Asp Phe
 20 25 30
 Lys Glu Ser Ser Gly Met Thr Asp Phe Ile Gln Glu Ile Ile Leu Pro
 35 40 45
 Ile Glu Asn Val Met Glu Val Lys Lys Gly Glu His Lys Val Val Glu
 50 55 60
 Lys Tyr Ile Trp Pro Gly Tyr Leu Leu Val Lys Met His Leu Thr Asp
 65 70 75 80
 Glu Ser Trp Leu Tyr Val Lys Ser Thr Ala Gly Ile Val Glu Phe Leu
 85 90 95
 Gly Gly Gly Val Pro Val Ala Leu Ser Glu Asp Glu Val Arg Ser Ile
 100 105 110
 Leu Thr Asp Ile Glu Glu Lys Lys Ser Gly Val Val Gln Lys His Gln
 115 120 125
 Phe Glu Val Gly Ser Arg Val Lys Ile Asn Asp Gly Val Phe Val Asn
 130 135 140
 Phe Ile Gly Thr Val Ser Glu Val Phe His Asp Lys Gly Arg Leu Ser
 145 150 155 160
 Val Met Val Ser Ile Phe Gly Arg Glu Thr Arg Val Asp Asp Leu Glu
 165 170 175
 Phe Trp Gln Val Glu Glu Val Ala Pro Gly Gln Glu Ser Glu
 180 185 190

<210>93

<211>150

<212>PRT

<213>Chlamydia pneumoniae

<400>93

Val Ser Gln Cys Lys Val Arg Phe Ser Met Ser Val Lys Lys Val Ile
 1 5 10 15
 Lys Ile Ile Lys Leu Gln Ile Pro Gly Lys Lys Ala Asn Pro Ala Pro
 20 25 30
 Pro Ile Gly Pro Ala Leu Gly Ala Ala Gly Val Asn Ile Met Gly Phe
 35 40 45
 Cys Lys Glu Phe Asn Ala Ala Thr Gln Asp Lys Pro Gly Asp Leu Leu
 50 55 60
 Pro Val Val Ile Thr Val Tyr Ala Asp Lys Thr Phe Thr Phe Ile Thr
 65 70 75 80
 Lys Gln Pro Pro Val Ser Ser Leu Ile Lys Lys Thr Leu Asn Leu Glu
 85 90 95
 Ser Gly Ser Lys Ile Pro Asn Arg Asn Lys Val Gly Lys Leu Thr Gln
 100 105 110
 Ala Gln Val Glu Ala Ile Ala Glu Gln Lys Met Lys Asp Met Asp Ile
 115 120 125
 Val Leu Leu Glu Ser Ala Lys Arg Met Val Glu Gly Thr Ala Arg Ser
 130 135 140
 Met Gly Ile Asp Val Glu
 145 150

<210>94

<211>232

<212>PRT

<213>Chlamydia pneumoniae

<400>94

Met Thr Lys His Gly Lys Arg Ile Arg Gly Ile Leu Lys Asn Tyr Asp
 1 5 10 15
 Phe Ser Lys Ser Tyr Ser Leu Arg Glu Ala Ile Asp Ile Leu Lys Gln
 20 25 30
 Cys Pro Pro Val Arg Phe Asp Gln Thr Val Asp Val Ser Ile Lys Leu
 35 40 45
 Gly Ile Asp Pro Lys Lys Ser Asp Gln Gln Ile Arg Gly Ala Val Phe
 50 55 60
 Leu Pro Asn Gly Thr Gly Lys Thr Leu Arg Ile Leu Val Phe Ala Ser
 65 70 75 80
 Gly Asn Lys Val Lys Glu Ala Val Glu Ala Gly Ala Asp Phe Met Gly
 85 90 95
 Ser Asp Asp Leu Val Glu Lys Ile Lys Ser Gly Trp Leu Glu Phe Asp
 100 105 110
 Val Ala Val Ala Thr Pro Asp Met Met Arg Glu Val Gly Lys Leu Gly
 115 120 125
 Lys Val Leu Gly Pro Arg Asn Leu Met Pro Thr Pro Lys Thr Gly Thr
 130 135 140
 Val Thr Thr Asp Val Ala Lys Ala Ile Ser Glu Leu Arg Lys Gly Lys
 145 150 155 160
 Ile Glu Phe Lys Ala Asp Arg Ala Gly Val Cys Asn Val Gly Val Gly
 165 170 175
 Lys Leu Ser Phe Glu Ser Ser Gln Ile Lys Glu Asn Ile Glu Ala Leu
 180 185 190
 Ser Ser Ala Leu Ile Lys Ala Lys Pro Pro Ala Ala Lys Gly Gln Tyr
 195 200 205
 Leu Val Ser Phe Thr Ile Ser Ser Thr Met Gly Pro Gly Ile Ser Ile
 210 215 220
 Asp Thr Arg Glu Leu Met Ala Ser
 225 230

<210>95

<211>170

<212>PRT

<213>Chlamydia pneumoniae

<400>95

Met Lys Gln Glu Lys Thr Leu Leu Leu Gln Glu Val Glu Asp Lys Ile
 1 5 10 15
 Ser Ala Ala Gln Gly Phe Ile Leu Leu Arg Tyr Leu Arg Phe Thr Ala
 20 25 30
 Ala Tyr Ser Arg Glu Phe Arg Asn Ser Leu Ser Gly Val Ser Ala Glu
 35 40 45
 Phe Glu Val Leu Lys Lys Arg Ile Phe Phe Lys Ala Ile Glu Ala Ala
 50 55 60
 Gly Leu Glu Val Asp Cys Ser Asp Thr Asp Gly His Leu Gly Val Val
 65 70 75 80
 Phe Ser Cys Gly Asp Pro Val Ser Ala Ala Lys Gln Val Leu Asp Phe
 85 90 95
 Asn Lys Gln His Lys Asp Ser Leu Val Phe Leu Ala Gly Arg Met Asp
 100 105 110
 Asn Ala Ser Leu Ser Gly Ala Glu Val Glu Ala Val Ala Lys Leu Pro
 115 120 125
 Ser Leu Lys Glu Leu Arg Gln Gln Val Val Gly Leu Phe Ala Ala Pro
 130 135 140
 Met Ser Gln Val Val Gly Ile Met Asn Ser Val Leu Ser Gly Val Ile
 145 150 155 160
 Ser Cys Val Asp Gln Lys Ala Gly Lys Asn
 165 170

<210>96

<211>132

<212>PRT

<213>Chlamydia pneumoniae

<400>96

Val Thr Lys Val Thr Thr Glu Ser Leu Glu Thr Leu Val Glu Lys Leu
 1 5 10 15

Ser Asn Leu Thr Val Leu Glu Leu Ser Gln Leu Lys Lys Leu Leu Glu
 20 25 30
 Glu Lys Trp Asp Val Thr Ala Ser Ala Pro Val Val Ala Val Ala Ala
 35 40 45
 Gly Gly Gly Gly Glu Ala Pro Val Ala Ala Glu Pro Thr Glu Phe Ala
 50 55 60
 Val Thr Leu Glu Asp Val Pro Ala Asp Lys Lys Ile Gly Val Leu Lys
 65 70 75 80
 Val Val Arg Glu Val Thr Gly Leu Ala Leu Lys Glu Ala Lys Glu Met
 85 90 95
 Thr Glu Gly Leu Pro Lys Thr Val Lys Glu Lys Thr Ser Lys Ser Asp
 100 105 110
 Ala Glu Asp Thr Val Lys Lys Leu Gln Asp Ala Gly Ala Lys Ala Ser
 115 120 125
 Phe Lys Gly Leu
 130

<210>97

<211>1262

<212>PRT

<213>Chlamydia pneumoniae

<400>97

Leu Ser His Gln Asn Ser Arg Arg Thr Arg Thr Leu Lys Cys Pro Glu
 1 5 10 15
 Arg Val Ser Val Lys Lys Lys Glu Asp Ile Pro Asp Leu Pro Asn Leu
 20 25 30
 Ile Glu Ile Gln Ile Lys Ser Tyr Lys Gln Phe Leu Gln Ile Gly Lys
 35 40 45
 Leu Ala Glu Glu Arg Glu Asn Ile Gly Leu Glu Glu Val Phe Arg Glu
 50 55 60
 Ile Phe Pro Ile Lys Ser Tyr Asn Glu Ala Thr Val Leu Glu Tyr Leu
 65 70 75 80
 Ser Tyr Asn Leu Gly Val Pro Lys Tyr Ser Pro Glu Glu Cys Ile Arg
 85 90 95
 Arg Gly Ile Thr Tyr Ser Val Thr Leu Lys Val Arg Phe Arg Leu Thr
 100 105 110
 Asp Glu Thr Gly Ile Lys Glu Glu Glu Val Tyr Met Gly Thr Ile Pro
 115 120 125
 Leu Met Thr Asp Lys Gly Thr Phe Ile Ile Asn Gly Ala Glu Arg Val
 130 135 140
 Val Val Ser Gln Val His Arg Ser Pro Gly Ile Asn Phe Glu Gln Glu
 145 150 155 160
 Lys His Ser Lys Gly Asn Ile Leu Phe Ser Phe Arg Ile Ile Pro Tyr
 165 170 175
 Arg Gly Ser Trp Leu Glu Ala Ile Phe Asp Ile Asn Asp Leu Ile Tyr
 180 185 190
 Ile His Ile Asp Arg Lys Lys Arg Arg Arg Lys Ile Leu Ala Ile Thr
 195 200 205
 Phe Ile Arg Ala Leu Gly Tyr Ser Ser Asp Ala Asp Ile Ile Glu Glu
 210 215 220
 Phe Phe Thr Ile Gly Glu Ser Ser Leu Arg Ser Glu Lys Asp Phe Ala
 225 230 235 240
 Leu Leu Val Gly Arg Ile Leu Ala Asp Asn Ile Ile Asp Glu Ala Ser
 245 250 255
 Ser Leu Val Tyr Gly Lys Ala Gly Glu Lys Leu Ser Thr Ala Met Leu
 260 265 270
 Lys Arg Met Leu Asp Ala Gly Ile Ala Ser Val Lys Ile Ala Val Asp
 275 280 285
 Ala Asp Glu Asn His Pro Ile Ile Lys Met Leu Ala Lys Asp Pro Thr
 290 295 300
 Asp Ser Tyr Glu Ala Ala Leu Lys Asp Phe Tyr Arg Arg Leu Arg Pro
 305 310 315 320
 Gly Glu Pro Ala Thr Leu Ala Asn Ala Arg Ser Thr Ile Met Arg Leu
 325 330 335
 Phe Phe Asp Pro Lys Arg Tyr Asn Leu Gly Arg Val Gly Arg Tyr Lys

340 345 350
 Leu Asn Arg Lys Leu Gly Phe Ser Ile Asp Asp Glu Ala Leu Ser Gln
 355 360 365
 Val Thr Leu Arg Lys Glu Asp Val Ile Gly Ala Leu Lys Tyr Leu Ile
 370 375 380
 Arg Leu Lys Met Gly Asp Glu Lys Ala Cys Val Asp Asp Ile Asp His
 385 390 395 400
 Leu Ala Asn Arg Arg Val Arg Ser Val Gly Glu Leu Ile Gln Asn Gln
 405 410 415
 Cys Arg Ser Gly Leu Ala Arg Met Glu Lys Ile Val Arg Glu Arg Met
 420 425 430
 Asn Leu Phe Asp Phe Ser Ser Asp Thr Leu Thr Pro Gly Lys Val Val
 435 440 445
 Ser Ala Lys Gly Leu Ala Ser Val Leu Lys Asp Phe Phe Gly Arg Ser
 450 455 460
 Gln Leu Ser Gln Phe Met Asp Gln Thr Asn Pro Val Ala Glu Leu Thr
 465 470 475 480
 His Lys Arg Arg Leu Ser Ala Leu Gly Pro Gly Gly Leu Asn Arg Glu
 485 490 495
 Arg Ala Gly Phe Glu Val Arg Asp Val His Ala Ser His Tyr Gly Arg
 500 505 510
 Ile Cys Pro Ile Glu Thr Pro Glu Gly Pro Asn Ile Gly Leu Ile Thr
 515 520 525
 Ser Leu Ser Ser Phe Ala Lys Ile Asn Glu Phe Gly Phe Ile Glu Thr
 530 535 540
 Pro Tyr Arg Ile Val Arg Asp Gly Ile Val Thr Asp Glu Ile Glu Tyr
 545 550 555 560
 Met Thr Ala Asp Val Glu Glu Glu Cys Val Ile Ala Gln Ala Ser Ala
 565 570 575
 Ser Leu Asp Glu Tyr Asn Met Phe Thr Glu Pro Val Cys Trp Val Arg
 580 585 590
 Tyr Ala Gly Glu Ala Phe Glu Ala Asp Thr Ser Thr Val Thr His Met
 595 600 605
 Asp Val Ser Pro Lys Gln Leu Val Ser Ile Val Thr Gly Leu Ile Pro
 610 615 620
 Phe Leu Glu His Asp Asp Ala Asn Arg Ala Leu Met Gly Ser Asn Met
 625 630 635 640
 Gln Arg Gln Ala Val Pro Leu Leu Lys Thr Glu Ala Pro Val Val Gly
 645 650 655
 Thr Gly Leu Glu Cys Arg Ala Ala Lys Asp Ser Gly Ala Ile Val Val
 660 665 670
 Ala Glu Glu Asp Gly Val Val Asp Phe Val Asp Gly Tyr Lys Val Val
 675 680 685
 Val Ala Ala Lys His Asn Pro Thr Ile Lys Arg Thr Tyr His Leu Lys
 690 695 700
 Lys Phe Leu Arg Ser Asn Ser Gly Thr Cys Ile Asn Gln Gln Pro Leu
 705 710 715 720
 Cys Ala Val Gly Asp Val Ile Thr Lys Gly Asp Val Ile Ala Asp Gly
 725 730 735
 Pro Ala Thr Asp Arg Gly Glu Leu Ala Leu Gly Lys Asn Val Leu Val
 740 745 750
 Ala Phe Met Pro Trp Tyr Gly Tyr Asn Phe Glu Asp Ala Ile Ile Ile
 755 760 765
 Ser Glu Lys Leu Ile Arg Glu Asp Ala Tyr Thr Ser Ile Tyr Ile Glu
 770 775 780
 Glu Phe Glu Leu Thr Ala Arg Asp Thr Lys Leu Gly Lys Glu Glu Ile
 785 790 795 800
 Thr Arg Asp Ile Pro Asn Val Ser Asp Glu Val Leu Ala Asn Leu Gly
 805 810 815
 Glu Asp Gly Ile Ile Arg Ile Gly Ala Glu Val Lys Pro Gly Asp Ile
 820 825 830
 Leu Val Gly Lys Ile Thr Pro Lys Ser Glu Thr Glu Leu Ala Pro Glu
 835 840 845
 Glu Arg Leu Leu Arg Ala Ile Phe Gly Glu Lys Ala Ala Asp Val Lys

850	855	860
Asp Ala Ser Leu Thr Val	Pro Pro Gly Thr Glu Gly Val Val Met Asp	
865	870	875
Val Lys Val Phe Ser Arg Lys Asp Arg Leu Ser Lys Ser Asp Asp Glu		880
	885	890
Leu Val Glu Glu Ala Val His Leu Lys Asp Leu Gln Lys Gly Tyr Lys		895
	900	905
Asn Gln Val Ala Thr Leu Lys Thr Glu Tyr Arg Glu Lys Leu Gly Ala		910
	915	920
Leu Leu Leu Asn Glu Lys Ala Pro Ala Ala Ile Ile His Arg Arg Thr		925
	930	935
Ala Glu Ile Val Val His Glu Gly Leu Leu Phe Asp Gln Glu Thr Ile		940
945	950	955
Glu Arg Ile Glu Gln Glu Asp Leu Val Asp Leu Leu Met Pro Asn Cys		960
	965	970
Glu Met Tyr Glu Val Leu Lys Gly Leu Leu Ser Asp Tyr Glu Thr Ala		975
	980	985
Leu Gln Arg Leu Glu Ile Asn Tyr Lys Thr Glu Val Glu His Ile Arg		990
	995	1000
Glu Gly Asp Ala Asp Leu Asp His Gly Val Ile Arg Gln Val Lys Val		1005
	1010	1015
Tyr Val Ala Ser Lys Arg Lys Leu Gln Val Gly Asp Lys Met Ala Gly		1020
1025	1030	1035
Arg His Gly Asn Lys Gly Val Val Ser Lys Ile Val Pro Glu Ala Asp		1040
	1045	1050
Met Pro Tyr Leu Ser Asn Gly Glu Thr Val Gln Met Ile Leu Asn Pro		1055
	1060	1065
Leu Gly Val Pro Ser Arg Met Asn Leu Gly Gln Val Leu Glu Thr His		1070
	1075	1080
Leu Gly Tyr Ala Ala Lys Thr Ala Gly Ile Tyr Val Lys Thr Pro Val		1085
	1090	1095
Phe Glu Gly Phe Pro Glu Gln Arg Ile Trp Asp Met Met Ile Glu Gln		1100
1105	1110	1115
Gly Leu Pro Glu Asp Gly Lys Ser Phe Leu Tyr Asp Gly Lys Thr Gly		1120
	1125	1130
Glu Arg Phe Asp Asn Lys Val Val Ile Gly Tyr Ile Tyr Met Leu Lys		1135
	1140	1145
Leu Ser His Leu Ile Ala Asp Lys Ile His Ala Arg Ser Ile Gly Pro		1150
	1155	1160
Tyr Ser Leu Val Thr Gln Gln Pro Leu Gly Gly Lys Ala Gln Met Gly		1165
	1170	1175
Gly Gln Arg Phe Gly Glu Met Glu Val Trp Ala Leu Glu Ala Tyr Gly		1180
1185	1190	1195
Val Ala His Met Leu Gln Glu Ile Leu Thr Val Lys Ser Asp Asp Val		1200
	1205	1210
Ser Gly Arg Thr Arg Ile Tyr Glu Ser Ile Val Lys Gly Glu Asn Leu		1215
	1220	1225
Leu Arg Ser Gly Thr Pro Glu Ser Phe Asn Val Leu Ile Lys Glu Met		1230
	1235	1240
Gln Gly Leu Gly Leu Asp Val Arg Pro Met Val Val Asp Ala		1245
	1250	1255
		1260
<210>98		
<211>1218		
<212>PRT		
<213>Chlamydia pneumoniae		
<400>98		
Leu Glu Lys Ile Met Phe Gly Glu Asn Ser Arg Asp Ile Gly Val Leu		
1	5	10
Ser Lys Glu Gly Leu Phe Asp Lys Leu Glu Ile Gly Ile Ala Ser Asp		15
	20	25
Ile Thr Ile Arg Asp Lys Trp Ser Cys Gly Glu Ile Lys Lys Pro Glu		30
	35	40
Thr Ile Asn Tyr Arg Thr Phe Lys Pro Glu Lys Gly Glu Leu Phe Cys		45
	50	55
		60

Glu Lys Ile Leu Gly Pro Thr Lys Asp Trp Glu Cys Cys Cys Gly Lys
 65 70 75 80
 Tyr Lys Lys Ile Lys His Lys Gly Ile Val Cys Asp Arg Cys Gly Val
 85 90 95
 Glu Val Thr Leu Ser Lys Val Arg Arg Glu Arg Met Ala His Ile Glu
 100 105 110
 Leu Ala Val Pro Ile Val His Ile Trp Phe Phe Lys Thr Thr Pro Ser
 115 120 125
 Arg Ile Gly Asn Val Leu Gly Met Thr Ala Ser Asp Leu Glu Arg Val
 130 135 140
 Ile Tyr Tyr Glu Glu Tyr Val Val Ile Asp Pro Gly Lys Thr Asp Leu
 145 150 155 160
 Thr Lys Lys Gln Leu Asn Asp Ala Gln Tyr Arg Glu Val Val Glu
 165 170 175
 Lys Trp Gly Lys Asp Ala Phe Val Ala Lys Met Gly Gly Glu Ala Ile
 180 185 190
 Tyr Asp Leu Leu Lys Ser Glu Asp Leu Gln Ser Leu Leu Lys Asp Leu
 195 200 205
 Lys Glu Arg Leu Arg Lys Thr Lys Ser Gln Gln Ala Arg Met Lys Leu
 210 215 220
 Ala Lys Arg Leu Lys Ile Ile Glu Gly Phe Val Ser Ser Ser Asn His
 225 230 235 240
 Pro Glu Trp Met Val Leu Lys Asn Ile Pro Val Val Pro Pro Asp Leu
 245 250 255
 Arg Pro Leu Val Pro Leu Asp Gly Gly Arg Phe Ala Thr Ser Asp Leu
 260 265 270
 Asn Asp Leu Tyr Arg Arg Val Ile Asn Arg Asn Asn Arg Leu Lys Ala
 275 280 285
 Ile Leu Arg Leu Lys Thr Pro Glu Val Ile Val Arg Asn Glu Lys Arg
 290 295 300
 Met Leu Gln Glu Ala Val Asp Ala Leu Phe Asp Asn Gly Arg His Gly
 305 310 315 320
 His Pro Val Met Gly Ala Gly Asn Arg Pro Leu Lys Ser Leu Ser Glu
 325 330 335
 Met Leu Lys Gly Lys Asn Gly Arg Phe Arg Gln Asn Leu Leu Gly Lys
 340 345 350
 Arg Val Asp Tyr Ser Gly Arg Ser Val Ile Ile Val Gly Pro Glu Leu
 355 360 365
 Lys Phe Asn Gln Cys Gly Leu Pro Lys Glu Met Ala Leu Glu Leu Phe
 370 375 380
 Glu Pro Phe Ile Ile Xaa Arg Leu Lys Asp Gln Gly Ser Val Tyr Thr
 385 390 395 400
 Ile Arg Ser Ala Lys Lys Met Ile Gln Arg Gly Ala Pro Glu Val Trp
 405 410 415
 Asp Val Leu Glu Glu Ile Ile Lys Gly His Pro Val Leu Leu Asn Arg
 420 425 430
 Ala Pro Thr Leu His Arg Leu Gly Ile Gln Ala Phe Glu Pro Val Leu
 435 440 445
 Ile Glu Gly Lys Ala Ile Arg Ile His Pro Leu Val Cys Ala Ala Phe
 450 455 460
 Asn Ala Asp Phe Asp Gly Asp Gln Met Ala Val His Val Pro Leu Ser
 465 470 475 480
 Val Glu Ala Gln Leu Glu Ala Lys Val Leu Met Met Ala Pro Asp Asn
 485 490 495
 Ile Phe Leu Pro Ser Ser Gly Lys Pro Val Ala Ile Pro Ser Lys Asp
 500 505 510
 Met Thr Leu Gly Leu Tyr Tyr Leu Met Ala Asp Pro Thr Tyr Phe Pro
 515 520 525
 Glu Glu His Gly Gly Lys Thr Lys Ile Phe Lys Asp Glu Ile Glu Val
 530 535 540
 Leu Arg Ala Leu Asn Asn Gly Gly Phe Ile Asp Asp Val Phe Gly Asp
 545 550 555 560
 Arg Arg Asp Glu Thr Gly Arg Gly Ile His Ile His Glu Lys Ile Lys
 565 570 575

392

Ile Ala Ile Tyr Asp Asp Ala Asp Leu Ser Glu Leu Val Gly Thr Tyr
 1090 1095 1100
 Ala Ile Pro Ser Gly Ala Ile Ile Ser Val Glu Glu Gly Gln Arg Val
 1105 1110 1115 1120
 Asp Pro Gly Met Leu Leu Ala Arg Leu Pro Arg Gly Ala Ile Lys Thr
 1125 1130 1135
 Lys Asp Ile Thr Gly Gly Leu Pro Arg Val Ala Glu Leu Val Glu Ala
 1140 1145 1150
 Arg Lys Pro Glu Asp Ala Ala Asp Ile Ala Lys Ile Asp Gly Val Val
 1155 1160 1165
 Asp Phe Lys Gly Ile Gln Lys Asn Lys Arg Ile Leu Val Val Cys Asp
 1170 1175 1180
 Glu Met Thr Gly Met Glu Glu Glu His Leu Ile Pro Leu Thr Lys His
 1185 1190 1195 1200
 Leu Ile Val Gln Arg Gly Asp Ser Val Ile Lys Gly Ser Ser Leu Pro
 1205 1210 1215
 Met Val

<210>99

<211>186

<212>PRT

<213>Chlamydia pneumoniae

<400>99

Gly Gln Gln Leu Thr Asp Gly Leu Val Val Pro His Glu Ile Leu Glu
 1 5 10 15
 Ile Cys Gly Val Arg Glu Leu Gln Lys Tyr Leu Val Asn Glu Val Gln
 20 25 30
 Glu Val Tyr Arg Leu Gln Gly Val Asp Ile Asn Asp Lys His Ile Glu
 35 40 45
 Ile Ile Val Arg Gln Met Leu Gln Lys Val Arg Ile Thr Asp Pro Gly
 50 55 60
 Asp Thr Thr Leu Leu Phe Gly Glu Asp Val Asn Lys Lys Glu Phe Tyr
 65 70 75 80
 Glu Glu Asn Arg Arg Thr Glu Glu Asp Gly Gly Lys Pro Ala Gln Ala
 85 90 95
 Val Pro Val Leu Leu Gly Ile Thr Lys Ala Ser Leu Gly Thr Glu Ser
 100 105 110
 Phe Ile Ser Ala Ala Ser Phe Gln Asp Thr Thr Arg Val Leu Thr Asp
 115 120 125
 Ala Ala Cys Cys Ser Lys Thr Asp Tyr Leu Leu Gly Phe Lys Glu Asn
 130 135 140
 Val Ile Met Gly His Met Ile Pro Gly Gly Thr Gly Phe Glu Thr His
 145 150 155 160
 Lys Arg Ile Lys Gln Tyr Leu Glu Lys Glu Gln Glu Asp Leu Val Phe
 165 170 175
 Asp Phe Val Ser Glu Thr Glu Cys Val Xaa
 180 185

<210>100

<211>337

<212>PRT

<213>Chlamydia pneumoniae

<400>100

Leu Glu Ile Asn Ser Asp Ala Lys Val Pro Met Ser Asn Gln Phe Asp
 1 5 10 15
 Gln Leu Lys Lys Leu Ser Thr Ile Val Cys Asp Ser Gly Asp Pro Glu
 20 25 30
 Leu Val Lys Ala Ser Gly Ser Gln Asp Ala Thr Thr Asn Pro Ser Leu
 35 40 45
 Ile Leu Lys Val Ala Gln Glu Pro Lys Phe Gln Glu Leu Leu Asn Glu
 50 55 60
 Ala Val Val Trp Gly Ile Arg Gln Asn Gly Asp Asp Leu Gln Thr Leu
 65 70 75 80
 Ser Phe Ile Leu Asp Lys Ile Gln Val Asn Phe Ala Leu Glu Ile Ile
 85 90 95

Lys Asn Ile Pro Gly Arg Ile Ser Leu Glu Ile Asp Ala Arg Leu Ser
 100 105 110
 Phe Asn Val Glu Ala Met Val Gln Arg Ala Val Phe Leu Ser Gln Leu
 115 120 125
 Phe Glu Ala Met Gly Gly Asp Lys Lys Arg Leu Leu Val Lys Ile Pro
 130 135 140
 Gly Thr Trp Glu Gly Ile Arg Ala Val Glu Phe Leu Glu Ala Lys Gly
 145 150 155 160
 Ile Ala Cys Asn Val Thr Leu Ile Phe Asn Leu Val Gln Ala Ile Ala
 165 170 175
 Ala Ala Lys Ala Lys Ala Thr Leu Ile Ser Pro Phe Val Gly Arg Ile
 180 185 190
 Tyr Asp Trp Trp Ile Ala Ala Tyr Gly Asp Glu Gly Tyr Ser Ile Asp
 195 200 205
 Ala Asp Pro Gly Val Ala Ser Val Ser Asn Ile Tyr Ala Tyr Tyr Lys
 210 215 220
 Lys Phe Gly Ile Pro Thr Gln Ile Met Ala Ala Ser Phe Arg Thr Lys
 225 230 235 240
 Glu Gln Val Leu Ala Leu Ala Gly Cys Asp Leu Leu Thr Ile Ser Pro
 245 250 255
 Lys Leu Leu Asp Glu Leu Lys Lys Ser Gln His Pro Val Lys Lys Glu
 260 265 270
 Leu Asp Pro Ala Glu Ala Lys Lys Leu Asp Val Gln Pro Ile Glu Leu
 275 280 285
 Thr Glu Ser Phe Phe Arg Phe Leu Met Asn Glu Asp Ala Met Ala Thr
 290 295 300
 Xaa Lys Leu Ala Glu Gly Ile Arg Ile Phe Ala Gly Asp Thr Gln Ile
 305 310 315 320
 Leu Glu Thr Ala Ile Thr Glu Phe Ile Lys Gln Ile Ala Ala Glu Gly
 325 330 335
 Ala

<210>101

<211>132

<212>PRT

<213>Chlamydia pneumoniae

<400>101

Ser Glu Met Lys Asn Lys Met Asp Tyr Lys Ser Gln Leu Val Phe Ser
 1 5 10 15
 Cys Pro Cys Cys Cys Lys Gly Asn Val Cys Phe Ser Val Phe Asn Leu
 20 25 30
 Asp Val Ile Leu Thr Cys Asn Val Cys Ser Ser Thr Tyr Thr Phe Asp
 35 40 45
 Ser Val Ile Arg Asn Glu Ile Arg Gln Phe Val Ala Leu Cys Lys Arg
 50 55 60
 Ile His Asp Ala Asn Ser Ile Leu Gly Asn Ala Thr Val Ser Val Ser
 65 70 75 80
 Val Glu Asp Asn Gln Met Asp Ile Pro Phe Gln Leu Leu Phe Ser Arg
 85 90 95
 Phe Pro Val Val Leu Asn Leu Ser Leu Asp Gly Lys Lys Ile Ala Ile
 100 105 110
 Arg Phe Leu Phe Asp Ala Leu Asn Thr Ser Ile Leu His Gln Glu Ser
 115 120 125
 Asp Leu Ile Ser
 130

<210>102

<211>192

<212>PRT

<213>Chlamydia pneumoniae

<400>102

Asn Lys Ser Thr Ala Arg Lys Lys Ile Gly Lys Phe Glu Lys Lys Pro
 1 5 10 15
 Ser Leu Ser Pro Val Gln Trp Val Arg Tyr Ser Gly Lys Asn Tyr Ser
 20 25 30

Ile Gln Thr Pro Ser Leu Trp Gln Cys Ile Asp Asp Lys Thr Gln Leu
 35 40 45
 Pro Glu Lys Leu Asp Val Leu Ile Gly Lys Gly Lys Gly Asn Leu
 50 55 60
 Thr Pro Thr Ile Asn Ile Ala Gln Glu Ile Thr Ser Lys Ser Ser Lys
 65 70 75 80
 Glu Tyr Ile Glu Glu Ile Leu Ala Tyr His Lys Ala Asn Glu Met Thr
 85 90 95
 Leu Glu Ser Gly Ile Phe Thr Gln Ile Gln Ser Pro Ser Gly Glu Phe
 100 105 110
 Thr Ile Ile Lys Thr Glu Lys Asn Ser Ser Trp Gly Arg Val Phe Cys
 115 120 125
 Leu Gln Ala Thr Thr Val Ile Asp His Thr Ala Tyr Ile Phe Thr Ser
 130 135 140
 Thr Ala Thr Leu Asp Asp Tyr Ala Glu Leu Ser Phe Thr Phe Leu Lys
 145 150 155 160
 Val Val Ser Ser Phe Gln Ile Arg Gly Gly Lys Glu Ala Thr Ser Gly
 165 170 175
 Asp Ala Ile Leu Glu Lys Ala Leu Glu Ala Leu Gln Asn Glu Asn Lys
 180 185 190

<210>103

<211>163

<212>PRT

<213>Chlamydia pneumoniae

<400>103

Asn Ile Met Ala Asn Leu Asn Ala Asp Gly Lys Leu Lys Gln Ile Cys
 1 5 10 15
 Asp Ala Leu Arg Leu Asp Thr Leu Lys Pro Ala Glu Asp Glu Ala Ala
 20 25 30
 Ala Leu Leu His Asn Ala Lys Glu Gln Ala Lys Arg Ile Ile Gln Glu
 35 40 45
 Ala Gln Glu Glu Ala Arg Lys Ile Leu Glu Thr Ala Glu Glu Arg Ala
 50 55 60
 His Gln Lys Ile Lys Gln Gly Glu Val Ala Leu Ser Gln Ala Gly Lys
 65 70 75 80
 Arg Ala Leu Glu Ala Leu Lys Gln Ala Val Glu Asn Lys Ile Phe Arg
 85 90 95
 Glu Ser Leu Val Glu Trp Leu Glu His Val Thr Thr Asp Pro Glu Val
 100 105 110
 Ser Thr Lys Leu Ile Gln Ala Leu Val Gln Ala Leu Glu Ala Gln Gly
 115 120 125
 Val Ser Gly Asn Leu Thr Ala Tyr Ile Gly Lys His Val Ser Pro Arg
 130 135 140
 Ala Val Asn Glu Leu Leu Arg Lys Gly Cys Asn Asn Lys Asn Tyr Glu
 145 150 155 160
 Arg Lys Val

<210>104

<211>211

<212>PRT

<213>Chlamydia pneumoniae

<400>104

Ser His Glu Lys Ile Phe Ser Ile Phe Lys Val Val Val Met Thr Gln
 1 5 10 15
 Tyr Tyr Phe Leu Ser Ser Phe Leu Pro Thr Gln Leu Pro Glu Ser Val
 20 25 30
 Pro Leu Phe Ser Ile Ser Asp Leu Asp Asp Leu Leu Tyr Leu Asn Leu
 35 40 45
 Ser Glu Asn Asp Leu Cys Asn Tyr Gly Leu Leu Lys Arg Phe Phe Asp
 50 55 60
 Phe Glu Asn Phe Ala Phe Phe Trp Ala Gly Lys Pro Ile Pro Phe Ser
 65 70 75 80
 Phe Gly Glu Val Thr Gln Glu Asn Val Glu Arg Met Leu Ser Ser Gln
 85 90 95

Gln Trp Ser Asp Asp Asn Asp Phe Glu Asp Phe Phe Lys Asp Phe Leu
 100 105 110
 Met Asn His Lys Ser Ser Gln Asp Arg Leu Asn His Phe Ser Asp Leu
 115 120 125
 Phe Arg Glu Phe Leu Ser Tyr His Gln Thr Asn Ser Ser Lys Phe Leu
 130 135 140
 Gln Asp Tyr Phe Arg Phe Gln Gln Gln Leu Arg Val Val Leu Ala Gly
 145 150 155 160
 Phe Arg Ala Arg Val Leu Asn Met Asp Val Ser Tyr Val Leu Arg Asp
 165 170 175
 Glu Asp Ser Ser Asp Pro Val Val Leu Glu Val Leu Met Gln Lys Asp
 180 185 190
 Ser Pro Asn Tyr Glu Xaa Pro Glu Glu Phe Xaa Asp Leu Gln Gly Val
 195 200 205

Leu Asp Asp

210

<210>105

<211>440

<212>PRT

<213>Chlamydia pneumoniae

<400>105

Lys Arg Gln Ser Asn Gly Asn Ser Phe Arg Thr Lys Leu Ala Gln Gly
 1 5 10 15
 His Val Ile Glu Ala Tyr Gly Asn Leu Leu Arg Val Arg Phe Asp Gly
 20 25 30
 Tyr Val Arg Gln Gly Glu Val Ala Tyr Val Asn Val Asp Asn Thr Trp
 35 40 45
 Leu Lys Ala Glu Val Ile Glu Val Ala Asp Gln Glu Val Lys Val Gln
 50 55 60
 Val Phe Glu Asp Thr Gln Gly Ala Cys Arg Gly Ala Leu Val Thr Phe
 65 70 75 80
 Ser Gly His Leu Leu Glu Ala Glu Leu Gly Pro Gly Leu Leu Gln Gly
 85 90 95
 Ile Phe Asp Gly Leu Gln Asn Arg Leu Glu Val Leu Ala Glu Asp Ser
 100 105 110
 Ser Phe Leu Gln Arg Gly Lys His Val Asn Ala Ile Ser Asp His Asn
 115 120 125
 Leu Trp Asn Tyr Thr Pro Val Ala Ser Val Gly Asp Thr Leu Arg Arg
 130 135 140
 Gly Asp Leu Leu Gly Thr Val Pro Glu Gly Arg Phe Thr His Lys Ile
 145 150 155 160
 Met Val Pro Phe Ser Cys Phe Gln Glu Val Thr Leu Thr Trp Val Ile
 165 170 175
 Ser Glu Gly Thr Tyr Asn Ala His Thr Val Val Ala Lys Ala Arg Asp
 180 185 190
 Ala Gln Gly Lys Glu Cys Ala Phe Thr Met Val Gln Arg Trp Pro Ile
 195 200 205
 Lys Gln Ala Phe Ile Glu Gly Glu Lys Ile Pro Ala His Lys Ile Met
 210 215 220
 Asp Val Gly Leu Arg Ile Leu Asp Thr Gln Ile Pro Val Leu Lys Gly
 225 230 235 240
 Gly Thr Phe Cys Thr Pro Gly Pro Phe Gly Ala Gly Lys Thr Val Leu
 245 250 255
 Gln His His Leu Ser Lys Tyr Ala Ala Val Asp Ile Val Ile Leu Cys
 260 265 270
 Ala Cys Gly Glu Arg Ala Gly Glu Val Val Glu Val Leu Gln Glu Phe
 275 280 285
 Pro His Leu Ile Asp Pro His Thr Gly Lys Ser Leu Met His Arg Thr
 290 295 300
 Cys Ile Ile Cys Asn Thr Ser Ser Met Pro Val Ala Ala Arg Glu Ser
 305 310 315 320
 Ser Ile Tyr Leu Gly Val Thr Ile Ala Glu Tyr Tyr Arg Gln Met Gly
 325 330 335
 Leu Asp Ile Leu Leu Leu Ala Asp Ser Thr Ser Arg Trp Ala Gln Ala

340 345 350
 Leu Arg Glu Ile Ser Gly Arg Leu Glu Glu Ile Pro Gly Glu Glu Ala
 355 360 365
 Phe Pro Ala Tyr Leu Ser Ser Arg Ile Ala Ala Phe Tyr Glu Arg Gly
 370 375 380
 Gly Ala Ile Thr Thr Lys Asp Gly Ser Glu Gly Ser Leu Thr Ile Cys
 385 390 395 400
 Gly Ala Val Ser Pro Ala Gly Gly Asn Phe Glu Glu Pro Val Thr Gln
 405 410 415
 Ser Thr Leu Ala Val Val Gly Ala Phe Cys Gly Leu Ser Lys Ala Arg
 420 425 430
 Leu Thr His Val Gly Ile Leu Gln
 435 440

<210>106

<211>185

<212>PRT

<213>Chlamydia pneumoniae

<400>106

Arg Thr Ser His Ser Ile Tyr Ile Ser Cys Ser Arg Ser Val Leu Trp
 1 5 10 15
 Ser Phe Lys Ser Thr Thr Asp Ala Arg Arg Tyr Pro Ser Ile Asp Pro
 20 25 30
 Leu Ile Ser Trp Ser Lys Tyr Leu Asn Gln Val Gly Gln Ile Leu Glu
 35 40 45
 Glu Lys Val Ser Gly Trp Gly Gly Ala Val Lys Lys Ala Ala Gln Phe
 50 55 60
 Leu Glu Lys Gly Ser Glu Ile Gly Lys Arg Met Glu Val Val Gly Glu
 65 70 75 80
 Glu Gly Val Ser Met Glu Asp Met Glu Ile Tyr Leu Lys Ala Glu Leu
 85 90 95
 Tyr Asp Phe Cys Tyr Leu Gln Gln Asn Ala Phe Asp Pro Val Asp Cys
 100 105 110
 Tyr Cys Pro Phe Glu Arg Gln Ile Glu Leu Phe Ser Leu Ile Ser Arg
 115 120 125
 Ile Phe Asp Ala Lys Phe Val Phe Asp Ser Pro Asp Asp Ala Arg Ser
 130 135 140
 Phe Phe Leu Glu Leu Gln Ser Lys Ile Lys Thr Leu Asn Gly Leu Lys
 145 150 155 160
 Phe Leu Ser Glu Glu Tyr His Glu Ser Lys Glu Val Ile Val Arg Leu
 165 170 175
 Leu Glu Lys Thr Met Val Gln Met Ala
 180 185

<210>107

<211>438

<212>PRT

<213>Chlamydia pneumoniae

<400>107

Met Gln Thr Ile Tyr Thr Lys Ile Thr Asp Ile Lys Gly Asn Leu Ile
 1 5 10 15
 Thr Val Glu Ala Glu Gly Ala Arg Leu Gly Glu Leu Ala Thr Ile Thr
 20 25 30
 Arg Ser Asp Gly Arg Ser Ser Tyr Ala Ser Val Leu Arg Phe Asp Leu
 35 40 45
 Lys Lys Val Thr Leu Gln Val Phe Gly Gly Thr Ser Gly Leu Ser Thr
 50 55 60
 Gly Asp His Val Thr Phe Leu Gly Arg Pro Met Glu Val Thr Phe Gly
 65 70 75 80
 Ser Ser Leu Leu Gly Arg Arg Leu Asn Gly Ile Gly Lys Pro Ile Asp
 85 90 95
 Asn Glu Gly Glu Cys Phe Gly Glu Pro Ile Glu Ile Ala Thr Pro Thr
 100 105 110
 Phe Asn Pro Val Cys Arg Ile Val Pro Arg Ser Met Val Arg Thr Asn
 115 120 125
 Ile Pro Met Ile Asp Val Phe Asn Cys Leu Val Lys Ser Gln Lys Ile

130 135 140
 Pro Ile Phe Ser Ser Ser Gly Glu His His Asn Ala Leu Leu Met Arg
 145 150 155 160
 Ile Ala Ala Gln Thr Asp Ala Asp Ile Val Val Ile Gly Gly Met Gly
 165 170 175
 Leu Thr Phe Val Asp Tyr Ser Phe Phe Val Glu Glu Ser Lys Lys Leu
 180 185 190
 Gly Phe Ala Asp Lys Cys Val Met Phe Ile His Lys Ala Val Asp Ala
 195 200 205
 Pro Val Glu Cys Val Leu Val Pro Asp Met Ala Leu Ala Cys Ala Glu
 210 215 220
 Lys Phe Ala Val Glu Glu Lys Lys Asn Val Leu Val Leu Leu Thr Asp
 225 230 235 240
 Met Thr Ala Phe Ala Asp Ala Leu Lys Glu Ile Ser Ile Thr Met Asp
 245 250 255
 Gln Ile Pro Ala Asn Arg Gly Tyr Pro Gly Ser Leu Tyr Ser Asp Leu
 260 265 270
 Ala Leu Arg Tyr Glu Lys Ala Val Glu Ile Ala Asp Gly Gly Ser Ile
 275 280 285
 Thr Leu Ile Thr Val Thr Thr Met Pro Ser Asp Asp Ile Thr His Pro
 290 295 300
 Val Pro Asp Asn Thr Gly Tyr Ile Thr Glu Gly Gln Phe Tyr Leu Arg
 305 310 315 320
 Asn Asn Arg Ile Asp Pro Phe Gly Ser Leu Ser Arg Leu Lys Gln Leu
 325 330 335
 Val Ile Gly Lys Val Thr Arg Glu Asp His Gly Asp Leu Ala Asn Ala
 340 345 350
 Leu Ile Arg Leu Tyr Ala Asp Ser Arg Lys Ala Thr Glu Arg Met Ala
 355 360 365
 Met Gly Phe Lys Leu Ser Asn Trp Asp Lys Lys Leu Leu Ala Phe Ser
 370 375 380
 Glu Leu Phe Glu Thr Arg Leu Met Ser Leu Glu Val Asn Ile Pro Leu
 385 390 395 400
 Glu Glu Ala Leu Asp Ile Gly Trp Lys Ile Leu Ala Gln Ser Phe Thr
 405 410 415
 Ser Glu Glu Val Gly Ile Lys Ala Gln Leu Ile Asn Lys Tyr Trp Pro
 420 425 430
 Lys Ala Cys Leu Ser Lys
 435

<210>108

<211>214

<212>PRT

<213>Chlamydia pneumoniae

<400>108

Val Leu Ala Lys Ser Met Ser Val Gln Val Lys Leu Thr Lys Asn Ser
 1 5 10 15
 Phe Arg Leu Glu Lys Gln Lys Leu Ala Arg Leu Gln Thr Tyr Leu Pro
 20 25 30
 Thr Leu Lys Leu Lys Lys Ala Leu Leu Gln Ala Glu Val Gln Asn Ala
 35 40 45
 Val Lys Asp Ala Ala Glu Cys Asp Lys Asp Tyr Val Gln Ala Tyr Glu
 50 55 60
 Arg Ile Tyr Ala Phe Ala Glu Leu Phe Ser Ile Pro Leu Cys Thr Asp
 65 70 75 80
 Cys Val Glu Lys Ser Phe Glu Ile Gln Ser Ile Asp Asn Asp Phe Glu
 85 90 95
 Asn Ile Ala Gly Val Glu Val Pro Ile Val Arg Glu Val Thr Leu Phe
 100 105 110
 Pro Ala Ser Tyr Ser Leu Leu Gly Thr Pro Ile Trp Leu Asp Thr Met
 115 120 125
 Leu Ser Ala Ser Lys Glu Leu Val Val Lys Lys Val Met Ala Glu Val
 130 135 140
 Ser Lys Glu Arg Leu Lys Ile Leu Glu Glu Glu Leu Arg Ala Val Ser
 145 150 155 160

Ile Arg Val Asn Leu Phe Glu Lys Lys Leu Ile Pro Glu Thr Thr Lys
 165 170 175
 Ile Leu Lys Lys Ile Ala Val Phe Leu Ser Asp Arg Ser Ile Thr Asp
 180 185 190
 Val Gly Gln Val Lys Met Ala Lys Lys Lys Ile Glu Leu Arg Lys Ala
 195 200 205
 Arg Gly Asp Glu Cys Val
 210
 <210>109
 <211>660
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>109
 Val Arg Leu Asn Ile His Lys Tyr Leu Phe Ile Gly Arg Asn Lys Ala
 1 5 10 15
 Asp Phe Phe Ser Ala Ser Arg Glu Leu Gly Val Val Glu Phe Ile Ser
 20 25 30
 Lys Lys Cys Phe Ile Thr Thr Glu Gln Gly His Arg Phe Val Glu Cys
 35 40 45
 Leu Lys Val Phe Asp His Leu Glu Ala Glu Tyr Ser Leu Glu Ala Leu
 50 55 60
 Glu Phe Val Lys Asp Glu Ser Val Ser Val Glu Asp Ile Val Ser Glu
 65 70 75 80
 Val Leu Thr Leu Asn Lys Glu Ile Lys Gly Leu Leu Glu Thr Val Lys
 85 90 95
 Ala Leu Arg Lys Glu Ile Val Arg Val Lys Pro Leu Gly Ala Phe Ser
 100 105 110
 Ser Ser Glu Ile Ala Glu Leu Ser Arg Lys Thr Gly Ile Ser Leu Arg
 115 120 125
 Phe Phe Tyr Arg Thr His Lys Asp Asn Glu Asp Leu Glu Glu Asp Ser
 130 135 140
 Pro Asn Val Phe Tyr Leu Ser Thr Ala Tyr Asn Phe Asp Tyr Tyr Leu
 145 150 155 160
 Val Leu Gly Val Val Asp Leu Pro Arg Asp Arg Tyr Thr Glu Ile Glu
 165 170 175
 Ala Pro Arg Ser Val Asn Glu Leu Gln Val Asp Leu Ala Asn Leu Gln
 180 185 190
 Arg Glu Ile Arg Asn Arg Ser Asp Arg Leu Cys Asp Leu Tyr Ala Tyr
 195 200 205
 Arg Arg Glu Val Leu Arg Gly Leu Cys Asn Tyr Asp Asn Glu Gln Arg
 210 215 220
 Leu His Gln Ala Lys Glu Cys Cys Glu Asp Leu Phe Asp Gly Lys Val
 225 230 235 240
 Phe Ala Val Ala Gly Trp Val Ile Val Asp Arg Ile Lys Glu Leu Gln
 245 250 255
 Ser Leu Cys Asn Arg Tyr Gln Ile Tyr Met Glu Arg Val Pro Val Asp
 260 265 270
 Pro Asp Glu Thr Ile Pro Thr Tyr Leu Glu Asn Lys Gly Val Gly Val
 275 280 285
 Met Gly Glu Asp Leu Val Gln Ile Tyr Asp Thr Pro Ala Tyr Ser Asp
 290 295 300
 Lys Asp Pro Ser Thr Trp Val Phe Phe Ala Phe Val Leu Phe Phe Ser
 305 310 315 320
 Met Ile Val Asn Asp Ala Gly Tyr Gly Leu Leu Phe Leu Met Ser Ser
 325 330 335
 Leu Leu Phe Ser Trp Lys Phe Arg Arg Lys Met Lys Phe Ser Lys His
 340 345 350
 Leu Ser Arg Met Leu Lys Met Thr Ala Ile Leu Gly Leu Gly Cys Ile
 355 360 365
 Cys Trp Gly Thr Thr Thr Thr Ser Phe Phe Gly Met Ser Phe Ser Lys
 370 375 380
 Thr Ser Val Phe Arg Glu Tyr Ser Met Thr His Val Leu Ala Leu Lys
 385 390 395 400
 Lys Ala Glu Tyr Tyr Leu Gln Met Arg Pro Lys Ala Tyr Lys Glu Leu

405 410 415
 Thr Asn Glu Tyr Pro Ser Leu Lys Ala Ile Arg Asp Pro Lys Ala Phe
 420 425 430
 Leu Leu Ala Thr Glu Ile Gly Ser Ala Gly Ile Glu Ser Arg Tyr Val
 435 440 445
 Val Tyr Asp Lys Phe Ile Asp Asn Ile Leu Met Glu Leu Ala Leu Phe
 450 455 460
 Ile Gly Val Val His Leu Ser Leu Gly Met Leu Arg Tyr Leu Arg Tyr
 465 470 475 480
 Arg Tyr Ser Gly Ile Gly Trp Ile Leu Phe Met Val Ser Ala Tyr Leu
 485 490 495
 Tyr Val Pro Ile Tyr Leu Gly Thr Val Ser Leu Ile His Tyr Leu Phe
 500 505 510
 His Val Pro Tyr Glu Leu Gly Gly Gln Ile Gly Tyr Tyr Gly Met Phe
 515 520 525
 Gly Gly Ile Gly Leu Ala Val Val Leu Ala Met Ile Gln Arg Ser Trp
 530 535 540
 Arg Gly Val Glu Glu Ile Ile Ser Val Ile Gln Val Phe Ser Asp Val
 545 550 555 560
 Leu Ser Tyr Leu Arg Ile Tyr Ala Leu Gly Leu Ala Gly Ala Met Met
 565 570 575
 Gly Ala Thr Phe Asn Gln Met Gly Ala Arg Leu Pro Met Leu Leu Gly
 580 585 590
 Ser Ile Val Ile Leu Leu Gly His Ser Val Asn Ile Ile Leu Ser Ile
 595 600 605
 Met Gly Gly Val Ile His Gly Leu Arg Leu Asn Phe Ile Glu Trp Tyr
 610 615 620
 His Tyr Ser Phe Asp Gly Gly Arg Pro Leu Arg Pro Leu Arg Lys
 625 630 635 640
 Ile Val Cys Ser Glu Asp Ala Glu Ala Ser Gly Ile His Leu Asp Asn
 645 650 655
 Asn Ser Ile Val
 660

<210>110

<211>149

<212>PRT

<213>Chlamydia pneumoniae

<400>110

Leu Lys Gly Ala His Glu Val Ser Met Ile Asp Met Ser Val Val Gly
 1 5 10 15
 Pro Ala Leu Val Leu Gly Leu Ala Met Ile Gly Ser Ala Ile Gly Cys
 20 25 30
 Gly Met Ala Gly Val Ala Ser His Ala Val Met Ser Arg Ile Asp Glu
 35 40 45
 Gly His Gly Lys Leu Ile Gly Met Ser Ala Met Pro Ser Ser Gln Ser
 50 55 60
 Ile Tyr Gly Phe Ile Leu Met Leu Leu Met Gln Ala Ala Ile Lys Asn
 65 70 75 80
 Gly Thr Leu Ser Pro Val Gly Gly Ile Ala Ile Gly Leu Ser Val Gly
 85 90 95
 Ala Ala Leu Leu Val Ser Ser Val Met Gln Gly Lys Cys Cys Val Ser
 100 105 110
 Gly Ile Gln Ala Tyr Ala Arg Ser Ser Ser Ile Tyr Gly Lys Cys Tyr
 115 120 125
 Ala Ala Ile Gly Ile Val Glu Ser Phe Ser Leu Phe Ala Val Val Phe
 130 135 140
 Ala Leu Leu Leu Leu
 145

<210>111

<211>940

<212>PRT

<213>Chlamydia pneumoniae

<400>111

Met Thr Thr Glu Asp Phe Pro Lys Ala Tyr Asn Phe Gln Asp Thr Glu

1 5 10 15
 Pro Glu Leu Tyr Val Phe Trp Glu Lys Asn Gly Met Phe Lys Ala Glu
 20 25 30
 Ala Ser Ser Asp Lys Pro Pro Tyr Ser Val Ile Met Pro Pro Pro Asn
 35 40 45
 Val Thr Gly Val Leu His Met Gly His Ala Leu Val Asn Thr Leu Gln
 50 55 60
 Asp Val Leu Val Arg Tyr Lys Arg Met Ser Gly Phe Glu Val Cys Trp
 65 70 75 80
 Ile Pro Gly Thr Asp His Ala Gly Ile Ala Thr Gln Ala Val Val Glu
 85 90 95
 Arg His Leu Gln Ala Ser Glu Gly Lys Arg Arg Thr Asp Tyr Ser Arg
 100 105 110
 Glu Asp Phe Leu Lys His Ile Trp Ala Trp Lys Glu Lys Ser Glu Lys
 115 120 125
 Val Val Leu Ser Gln Leu Arg Gln Leu Gly Cys Ser Cys Asp Trp Asp
 130 135 140
 Arg Lys Arg Phe Thr Met Glu Pro Leu Ala Asn Arg Ala Val Lys Lys
 145 150 155 160
 Ala Phe Lys Thr Leu Phe Glu Asn Gly Tyr Ile Tyr Arg Gly Tyr Tyr
 165 170 175
 Leu Val Asn Trp Asp Pro Val Leu Gln Thr Ala Leu Ala Asp Asp Glu
 180 185 190
 Val Glu Tyr Glu Glu Lys Asp Gly Trp Leu Tyr Tyr Ile Arg Tyr Arg
 195 200 205
 Met Val Gly Ser Gln Glu Ser Ile Val Val Ala Thr Thr Arg Pro Glu
 210 215 220
 Thr Ser Leu Gly Asp Thr Gly Ile Ala Val Ser Pro Asn Asp Glu Arg
 225 230 235 240
 Tyr Ala Ser Trp Ile Gly Ala Ser Val Glu Val Pro Phe Val Asn Arg
 245 250 255
 Gln Ile Pro Ile Ile Gly Asp Ala Ser Val Asp Pro Thr Phe Gly Thr
 260 265 270
 Gly Ala Val Lys Val Thr Pro Ala His Asp Lys Asp Asp Tyr Leu Met
 275 280 285
 Gly Thr Asn His His Leu Pro Met Ile Asn Ile Leu Thr Pro Ser Gly
 290 295 300
 Gly Ile Asn Glu Asn Gly Gly Pro Phe Ala Gly Met Ala Lys Glu Lys
 305 310 315 320
 Ala Arg Glu Glu Ile Leu Ile Ala Leu Glu Glu Gln Gly Leu Phe Val
 325 330 335
 Arg Lys Glu Pro Tyr Lys Leu Arg Val Gly Val Ser Tyr Arg Ser Gly
 340 345 350
 Ala Val Ile Glu Pro Tyr Leu Ser Lys Gln Trp Phe Val Ser Val Ser
 355 360 365
 Glu Phe Arg Gly Ala Leu Arg Glu Phe Val Glu Ser Gln Asp Ile Lys
 370 375 380
 Ile Phe Pro Lys Asp Phe Val Lys Asn Tyr Leu Ser Trp Val Asn His
 385 390 395 400
 Leu Arg Asp Trp Cys Ile Ser Arg Gln Leu Trp Trp Gly His Arg Ile
 405 410 415
 Pro Val Trp Tyr His Lys Asn His Asp Glu Arg Val Leu Cys Tyr Asp
 420 425 430
 Gly Glu Gly Ile Pro Glu Glu Val Ala Gln Asp Pro Asp Ser Trp Tyr
 435 440 445
 Gln Asp Pro Asp Val Leu Asp Thr Trp Phe Ser Ser Gly Leu Trp Pro
 450 455 460
 Leu Thr Cys Leu Gly Trp Pro Asp Glu Asn Ser Pro Asp Leu Lys Lys
 465 470 475 480
 Phe Tyr Pro Thr Ala Leu Leu Val Thr Gly His Asp Ile Leu Phe Phe
 485 490 495
 Trp Val Thr Arg Met Val Leu Leu Cys Ser Ser Met Ser Gly Glu Lys
 500 505 510
 Pro Phe Ser Glu Val Phe Leu His Gly Leu Ile Phe Gly Lys Ser Tyr

515 520 525
 Lys Arg Tyr Asn Asp Phe Gly Glu Trp Ser Tyr Ile Ser Gly Lys Glu
 530 535 540
 Lys Leu Ala Tyr Asp Met Gly Glu Ala Leu Pro Asp Gly Val Val Ala
 545 550 555 560
 Lys Trp Glu Lys Leu Ser Lys Ser Lys Gly Asn Val Ile Asp Pro Leu
 565 570 575
 Glu Met Ile Ala Thr Tyr Gly Thr Asp Ala Val Arg Leu Thr Leu Cys
 580 585 590
 Ser Cys Ala Asn Arg Gly Glu Gln Ile Asp Leu Asp Tyr Arg Leu Phe
 595 600 605
 Glu Glu Tyr Lys His Phe Ala Asn Lys Val Trp Asn Gly Ala Arg Phe
 610 615 620
 Ile Phe Gly His Ile Ser Asp Leu Gln Gly Lys Asp Leu Leu Ala Gly
 625 630 635 640
 Ile Asp Glu Asp Ser Leu Gly Leu Glu Asp Phe Tyr Ile Leu Asp Gly
 645 650 655
 Phe Asn Gln Leu Ile His Gln Leu Glu Ala Tyr Ala Thr Tyr Ala
 660 665 670
 Phe Asp Lys Val Ala Thr Leu Ala Tyr Glu Phe Phe Arg Asn Asp Leu
 675 680 685
 Cys Ser Thr Tyr Ile Glu Ile Ile Lys Pro Thr Leu Phe Gly Lys Gln
 690 695 700
 Gly Asn Glu Ala Ser Gln Ser Thr Lys Arg Thr Leu Leu Ala Val Leu
 705 710 715 720
 Leu Ile Asn Val Leu Gly Val Leu His Pro Val Ala Pro Phe Ile Thr
 725 730 735
 Glu Ser Leu Phe Leu Arg Ile Gln Asp Thr Leu Gly Ala Leu Pro Glu
 740 745 750
 Gly Asp Gly Asp Ala Phe Thr Gly His Ala Leu Arg Met Leu Arg Ser
 755 760 765
 Arg Ala Cys Met Glu Ala Pro Tyr Pro Lys Ala Phe Asp Val Lys Ile
 770 775 780
 Pro Gln Asp Leu Arg Glu Ser Phe Thr Leu Ala Gln Arg Leu Val Tyr
 785 790 795 800
 Thr Ile Arg Asn Ile Arg Gly Glu Met Gln Leu Asp Pro Arg Leu His
 805 810 815
 Leu Lys Ala Phe Val Val Cys Ser Asp Thr Thr Glu Ile Gln Ser Cys
 820 825 830
 Ile Pro Ile Leu Gln Ala Leu Gly Gly Leu Glu Ser Ile Gln Leu Leu
 835 840 845
 Asp Lys Glu Pro Glu Lys Gly Leu Tyr Ser Phe Gly Val Val Asp Thr
 850 855 860
 Ile Arg Leu Gly Ile Phe Val Pro Glu Glu His Leu Leu Lys Glu Lys
 865 870 875 880
 Gly Arg Leu Glu Lys Glu Arg Val Arg Leu Glu Arg Ala Val Glu Asn
 885 890 895
 Leu Glu Arg Leu Leu Gly Asp Glu Ser Phe Cys Gln Lys Ala Asn Pro
 900 905 910
 Asn Leu Val Val Ala Lys Gln Glu Ala Leu Lys Asn Asn Arg Ile Glu
 915 920 925
 Leu Gln Gly Ile Leu Asp Lys Leu Ala Ser Phe Ala
 930 935 940

<210>112

<211>945

<212>PRT

<213>Chlamydia pneumoniae

<400>112

Ala Cys Ile Val Cys Leu Asp Arg Glu Asp Gln Arg Ser Leu Glu Arg

1

5

10

15

Tyr Asp Ile Val Arg Ile Ile Gly Lys Gly Gly Met Gly Glu Val Tyr

20

25

30

Leu Ala Tyr Asp Pro Val Cys Ser Arg Lys Val Ala Leu Lys Lys Ile

35

40

45

Arg Glu Asp Leu Ala Glu Asn Pro Leu Leu Lys Arg Arg Phe Leu Arg
 50 55 60
 Glu Ala Arg Ile Ala Ala Asp Leu Ile His Pro Gly Val Val Pro Val
 65 70 75 80
 Tyr Thr Ile Tyr Ser Glu Lys Asp Pro Val Tyr Tyr Thr Met Pro Tyr
 85 90 95
 Ile Glu Gly Tyr Thr Leu Lys Thr Leu Leu Lys Ser Val Trp Gln Lys
 100 105 110
 Glu Ser Leu Ser Lys Glu Leu Ala Glu Lys Thr Ser Val Gly Ala Phe
 115 120 125
 Leu Ser Ile Phe His Lys Ile Cys Cys Thr Ile Glu Tyr Val His Ser
 130 135 140
 Arg Gly Ile Leu His Arg Asp Leu Lys Pro Asp Asn Ile Leu Leu Gly
 145 150 155 160
 Leu Phe Ser Glu Ala Val Ile Leu Asp Trp Gly Ala Ala Val Ala Cys
 165 170 175
 Gly Glu Glu Glu Asp Leu Leu Asp Ile Asp Val Ser Lys Glu Glu Val
 180 185 190
 Leu Ser Ser Arg Met Thr Ile Pro Gly Arg Ile Val Gly Thr Pro Asp
 195 200 205
 Tyr Met Ala Pro Glu Arg Leu Leu Gly His Pro Ala Ser Lys Ser Thr
 210 215 220
 Asp Ile Tyr Ala Leu Gly Val Val Leu Tyr Gln Met Leu Thr Leu Ser
 225 230 235 240
 Phe Pro Tyr Arg Arg Lys Lys Gly Lys Lys Ile Val Leu Asp Gly Gln
 245 250 255
 Arg Ile Pro Ser Pro Gln Glu Val Ala Pro Tyr Arg Glu Ile Pro Pro
 260 265 270
 Phe Leu Ser Ala Val Val Met Arg Met Leu Ala Val Asp Pro Gln Glu
 275 280 285
 Arg Tyr Ser Ser Val Thr Glu Leu Lys Glu Asp Ile Glu Ser His Leu
 290 295 300
 Lys Gly Ser Pro Lys Trp Thr Leu Thr Thr Ala Leu Pro Pro Lys Lys
 305 310 315 320
 Ser Ser Ser Trp Lys Leu Asn Glu Pro Ile Leu Leu Ser Lys Tyr Phe
 325 330 335
 Pro Met Leu Glu Val Ser Pro Ala Ser Trp Tyr Ser Leu Ala Ile Ser
 340 345 350
 Asn Ile Glu Ser Phe Ser Glu Met Arg Leu Glu Tyr Thr Leu Ser Lys
 355 360 365
 Lys Gly Leu Asn Glu Gly Phe Gly Ile Leu Leu Pro Thr Ser Glu Asn
 370 375 380
 Ala Leu Gly Gly Asp Phe Tyr Gln Gly Tyr Gly Phe Trp Leu His Ile
 385 390 395 400
 Lys Glu Arg Thr Leu Ser Val Ser Leu Val Lys Asn Ser Leu Glu Ile
 405 410 415
 Gln Arg Cys Ser Gln Asp Leu Glu Ser Asp Lys Glu Thr Phe Leu Ile
 420 425 430
 Ala Leu Glu Gln His Asn His Ser Leu Ser Leu Phe Val Asp Gly Thr
 435 440 445
 Thr Trp Leu Ile His Met Asn Tyr Leu Pro Ser Arg Ser Gly Arg Val
 450 455 460
 Ala Ile Ile Val Arg Asp Met Glu Asp Ile Leu Glu Asp Ile Gly Ile
 465 470 475 480
 Phe Glu Ser Ser Gly Ser Leu Arg Val Ser Cys Leu Ala Val Pro Asp
 485 490 495
 Ala Phe Leu Ala Glu Lys Leu Tyr Asp Arg Ala Leu Val Leu Tyr Arg
 500 505 510
 Arg Ile Ala Glu Ser Phe Pro Gly Arg Lys Glu Gly Tyr Glu Ala Arg
 515 520 525
 Phe Arg Ala Gly Ile Thr Val Leu Glu Lys Ala Ser Thr Asp Asn Asn
 530 535 540
 Glu Gln Glu Phe Ala Leu Ala Ile Glu Glu Phe Ser Lys Leu His Asp
 545 550 555 560

Gly Val Ala Ala Pro Leu Glu Tyr Leu Gly Lys Ala Leu Val Tyr Gln
 565 570 575
 Arg Leu Gln Glu Tyr Asn Glu Glu Ile Lys Ser Leu Leu Leu Ala Leu
 580 585 590
 Lys Arg Tyr Ser Gln His Pro Glu Ile Phe Arg Leu Lys Asp His Val
 595 600 605
 Val Tyr Arg Leu His Glu Ser Phe Tyr Lys Arg Asp Arg Leu Ala Leu
 610 615 620
 Val Phe Met Ile Leu Val Leu Glu Ile Ala Pro Gln Ala Ile Thr Pro
 625 630 635 640
 Gly Gln Glu Glu Lys Ile Leu Val Trp Leu Lys Asp Lys Ser Arg Ala
 645 650 655
 Thr Leu Phe Cys Leu Leu Asp Pro Thr Val Leu Glu Leu Arg Ser Ser
 660 665 670
 Lys Met Glu Leu Phe Leu Ser Tyr Trp Ser Gly Phe Ile Pro His Leu
 675 680 685
 Asn Ser Leu Phe His Arg Ala Trp Asp Gln Ser Asp Val Arg Ala Leu
 690 695 700
 Ile Glu Ile Phe Tyr Val Ala Cys Asp Leu His Lys Trp Gln Phe Leu
 705 710 715 720
 Ser Ser Cys Ile Asp Ile Phe Lys Glu Ser Leu Glu Asp Gln Lys Ala
 725 730 735
 Thr Glu Glu Ile Val Glu Phe Ser Phe Glu Asp Leu Gly Ala Phe Leu
 740 745 750
 Phe Ala Ile Gln Ser Ile Phe Asn Lys Glu Asp Ala Glu Lys Ile Phe
 755 760 765
 Val Ser Asn Asp Gln Leu Ser Pro Ile Leu Leu Val Tyr Ile Phe Asp
 770 775 780
 Leu Phe Ala Asn Arg Ala Leu Leu Glu Ser Gln Gly Glu Ala Ile Phe
 785 790 795 800
 Gln Ala Leu Asp Leu Ile Arg Ser Lys Val Pro Glu Asn Phe Tyr His
 805 810 815
 Asp Tyr Leu Arg Asn His Glu Ile Arg Ala His Leu Trp Cys Arg Asn
 820 825 830
 Glu Lys Ala Leu Ser Thr Ile Phe Glu Asn Tyr Thr Glu Lys Gln Leu
 835 840 845
 Lys Asp Glu Gln His Glu Leu Phe Val Leu Tyr Gly Cys Tyr Leu Ala
 850 855 860
 Leu Ile Gln Gly Ala Glu Ala Ala Lys Gln His Phe Asp Val Cys Arg
 865 870 875 880
 Glu Asp Arg Ile Phe Pro Ala Ser Leu Leu Ala Arg Asn Tyr Asn Arg
 885 890 895
 Leu Gly Leu Pro Lys Asp Ala Leu Ser Tyr Gln Glu Arg Arg Leu Leu
 900 905 910
 Leu Arg Gln Lys Phe Leu Tyr Phe His Cys Leu Gly Asn His Asp Glu
 915 920 925
 Arg Asp Leu Cys Gln Thr Met Tyr His Leu Leu Thr Glu Glu Phe Gln
 930 935 940

Leu

945

<210>113

<211>1826

<212>PRT

<213>Chlamydia pneumoniae

<400>113

Met Lys Ser Leu Pro Val Tyr Val Ser Gly Ile Lys Val Arg Asn Leu
 1 5 10 15

Lys Asn Val Ser Ile His Phe Asn Ser Glu Glu Ile Val Leu Leu Thr
 20 25 30

Gly Val Ser Gly Ser Gly Lys Ser Ser Ile Ala Phe Asp Thr Leu Tyr
 35 40 45

Ala Ala Gly Arg Lys Arg Tyr Ile Ser Thr Leu Pro Thr Phe Phe Ala
 50 55 60

Thr Thr Ile Thr Thr Leu Pro Asn Pro Lys Val Glu Glu Ile His Gly

65 70 75 80
 Leu Ser Pro Thr Ile Ala Ile Lys Gln Asn His Phe Ser His Tyr Ser
 85 90 95
 His Ala Thr Val Gly Ser Thr Thr Glu Leu Phe Ser His Leu Ala Leu
 100 105 110
 Leu Phe Thr Leu Glu Gly Gln Ala Arg Asp Pro Lys Thr Lys Glu Val
 115 120 125
 Leu Asp Leu Tyr Ser Lys Glu Lys Val Leu Ser Thr Ile Met Glu Leu
 130 135 140
 Ser Glu Gly Val Gln Ile Ser Ile Leu Ala Pro Leu Leu Arg Lys Asp
 145 150 155 160
 Ile Ala Ala Ile His Glu Tyr Ala Gln Gln Gly Phe Thr Lys Val Arg
 165 170 175
 Cys Asn Gly Thr Ile His Pro Ile Tyr Ser Phe Leu Thr Ser Gly Ile
 180 185 190
 Pro Glu Asp Cys Ser Val Asp Ile Val Ile Asp Thr Leu Ile Lys Ser
 195 200 205
 Glu Asn Asn Ile Ala Arg Leu Lys Val Ser Leu Phe Thr Ala Leu Glu
 210 215 220
 Phe Gly Glu Gly His Cys Ser Val Leu Ser Asp Glu Glu Leu Met Thr
 225 230 235 240
 Phe Ser Thr Lys Gln Gln Ile Asp Asp Val Thr Tyr Thr Pro Leu Thr
 245 250 255
 Gln Gln Leu Phe Ser Pro His Ala Leu Glu Ser Arg Cys Ser Leu Cys
 260 265 270
 Gln Gly Ser Gly Ile Phe Ile Ser Ile Asp Asn Pro Leu Leu Ile Asp
 275 280 285
 Glu Asn Leu Ser Ile Lys Glu Asn Cys Cys Ser Phe Ala Gly Asn Cys
 290 295 300
 Ser Ser Tyr Leu Tyr His Thr Ile Tyr Gln Ala Leu Ala Asp Ala Leu
 305 310 315 320
 Asn Phe Asn Leu Glu Thr Pro Trp Lys Asp Leu Ser Pro Glu Ile Gln
 325 330 335
 Asn Ile Phe Leu Arg Gly Lys Asn Asn Leu Val Leu Pro Val Arg Leu
 340 345 350
 Phe Asp Gln Thr Leu Gly Lys Lys Asn Leu Thr Tyr Lys Val Trp Arg
 355 360 365
 Gly Val Leu Asn Asp Ile Gly Asp Lys Val Arg Tyr Thr Thr Lys Pro
 370 375 380
 Ser Arg Tyr Leu Ser Lys Gly Met Ser Ala His Ser Cys Ser Leu Cys
 385 390 395 400
 Lys Gly Thr Gly Leu Gly Asp Tyr Ala Ser Val Ala Thr Trp Glu Gly
 405 410 415
 Lys Thr Phe Thr Glu Phe Gln Gln Met Ser Leu Asn Asn Trp His Val
 420 425 430
 Phe Phe Ser Lys Val Lys Ser Pro Ser Leu Ser Ile Gln Glu Ile Leu
 435 440 445
 Gln Gly Leu Lys Gln Arg Leu Ser Phe Leu Ile Asp Leu Gly Leu Gly
 450 455 460
 Tyr Leu Thr Pro Asn Arg Ala Leu Ala Thr Leu Ser Gly Gly Glu Gln
 465 470 475 480
 Glu Arg Thr Ala Ile Ala Lys His Leu Gly Gly Glu Leu Phe Gly Ile
 485 490 495
 Thr Tyr Ile Leu Asp Glu Pro Ser Ile Gly Leu His Pro Gln Asp Thr
 500 505 510
 Glu Lys Leu Ile Gly Val Ile Lys Lys Leu Arg Asp Gln Gly Asn Thr
 515 520 525
 Val Ile Leu Val Glu His Glu Glu Arg Met Ile Ser Leu Ala Asp Arg
 530 535 540
 Ile Ile Asp Ile Gly Pro Gly Ala Gly Ile Phe Gly Gly Glu Val Leu
 545 550 555 560
 Phe Asn Gly Lys Pro Glu Asp Phe Leu Met Asn Ser Ser Ser Leu Thr
 565 570 575
 Ala Lys Tyr Leu Arg Gln Glu Leu Thr Ile Pro Ile Pro Glu Ser Arg

580	585	590
Glu Ala Pro Thr Ser Trp Leu	Leu Leu Thr Glu Ala Thr	Ile His Asn
595	600	605
Leu Lys Asn Leu Ser Ile Arg	Leu Pro Leu Ala Arg	Leu Ile Gly Val
610	615	620
Thr Gly Val Ser Gly Ser Gly	Lys Ser Ser Leu Ile Asn	Asn Thr Leu
625	630	635
Val Pro Ala Ile Glu Ser Phe	Leu Lys Gln Glu Asn Pro	Lys Asn Leu
645	650	655
His Phe Glu Trp Gly Cys Ile	Gly Arg Leu Ile His Ile	Thr Arg Asp
660	665	670
Leu Pro Gly Arg Ser Gln Arg	Ser Ile Pro Leu Thr Tyr	Ile Lys Ala
675	680	685
Phe Asp Asp Ile Arg Glu Leu	Phe Ala Ser Gln Pro Arg	Ser Leu Arg
690	695	700
Gln Gly Leu Thr Lys Ala His	Phe Ser Phe Asn Gln Pro	Gln Gly Ala
705	710	715
Cys Ile Gln Cys Gln Gly Leu	Gly Thr Met Thr Ile Ser	Asp Asp Asp
725	730	735
Thr Pro Ile Pro Cys Ser Glu	Cys Gln Gly Lys Arg Tyr	His Ser Glu
740	745	750
Val Leu Glu Ile Leu Tyr Glu	Gly Lys Asn Ile Ala Asp	Ile Leu Asp
755	760	765
Met Thr Ala Tyr Glu Ala Glu	Lys Phe Phe Ile Ser His	Pro Lys Ile
770	775	780
His Glu Lys Ile His Ala Leu	Cys Ser Leu Arg Leu Asp	Tyr Leu Pro
785	790	795
Leu Gly Arg Pro Leu Ser Thr	Leu Ser Gly Glu Ile Gln	Arg Leu
805	810	815
Lys Leu Ala His Glu Leu Leu	Phe Ala Ser Pro Lys Gln	Thr Leu Tyr
820	825	830
Val Leu Asp Glu Pro Thr Thr	Gly Leu His Thr His Asp	Ile Gln Ala
835	840	845
Leu Ile Glu Val Leu Leu Ser	Leu Thr Tyr Leu Gly His	Thr Val Leu
850	855	860
Val Ile Glu His Asn Met His	Val Val Lys Val Cys Asp	Tyr Val Leu
865	870	875
Glu Leu Gly Pro Glu Gly Gly	Asp Leu Gly Gly Tyr Leu	Leu Ala Ser
885	890	895
Cys Thr Pro Lys Asp Leu Ile	Gln Leu Asn Thr Pro Thr	Ala Lys Ala
900	905	910
Leu Ala Pro Tyr Ile Glu Gly	Ser Leu Asp Ile Pro Val	Val Lys Ser
915	920	925
Glu Pro Pro Ser Ser Pro Lys	Ser Cys Asp Ile Leu Ile	Lys Asp Ala
930	935	940
Tyr Gln Asn Asn Leu Lys His	Ile Asp Leu Ala Leu Pro	Arg Asn Ser
945	950	955
Leu Ile Ala Ile Ala Gly Pro	Gly Ala Ser Gly Lys His	Ser Leu Val
965	970	975
Phe Asp Ile Leu Tyr Ala Ser	Gly Asn Ile Ala Tyr Ala	Glu Leu Phe
980	985	990
Pro Pro Tyr Ile Arg Gln Gly	Leu Leu Lys Glu Thr Pro	Leu Pro Ser
995	1000	1005
Val Gly Glu Val Lys Gly Leu	Ser Pro Val Ile Ser Val	Arg Lys Cys
1010	1015	1020
Ser Ser Ser Asn Arg Ser Tyr	His Thr Ile Ala Ser Ala	Leu Gly Leu
1025	1030	1035
Ser Asn Gly Leu Glu Lys Leu	Phe Ala Ile Leu Gly Glu	Pro Phe Ser
1045	1050	1055
Pro Leu Thr Glu Glu Lys Leu	Ser Lys Thr Thr Pro Gln	Thr Ile Ile
1060	1065	1070
Asp Ser Leu Leu Lys Ser Tyr	Lys Asp Asp Tyr Val Thr	Ile Thr Ser
1075	1080	1085
Pro Ile Pro Leu Gly Ser Asp	Leu Glu Ile Phe Leu Gln	Glu Lys Gln

1090 1095 1100
 Lys Glu Gly Phe Ile Lys Leu Tyr Ser Glu Gly Asn Leu Tyr Asp Leu
 1105 1110 1115 1120
 Asp Glu Arg Leu Pro Leu Asn Leu Ile Glu Pro Ala Ile Val Ile Gln
 1125 1130 1135
 His Thr Lys Val Ser Pro Lys Asn Ser Ser Ser Leu Leu Ser Ala Ile
 1140 1145 1150
 Ser Val Ala Phe Ser Leu Ser Ser Glu Ile Trp Ile Tyr Ile Ser Gln
 1155 1160 1165
 Lys Lys Gln Arg Lys Leu Ser Tyr Ser Leu Gly Trp Lys Asp Lys Lys
 1170 1175 1180
 Gly Arg Leu Tyr Pro Glu Ile Thr His Gln Leu Leu Xaa Ser Asp His
 1185 1190 1195 1200
 Pro Glu Gly Arg Cys Leu Thr Cys Gly Gly Arg Gly Glu Ile Leu Lys
 1205 1210 1215
 Ile Ser Leu Glu Glu His Lys Glu Lys Ile Ala His Tyr Thr Pro Leu
 1220 1225 1230
 Glu Phe Phe Ser Leu Phe Phe Pro Lys Ser Tyr Met Lys Pro Val Gln
 1235 1240 1245
 Lys Leu Leu Lys Asp Glu Asn Ala Ser Gln Pro Leu Lys Leu Leu Thr
 1250 1255 1260
 Thr Lys Glu Phe Leu Asn Phe Cys Arg Gly Ser Ser Glu Phe Pro Gly
 1265 1270 1275 1280
 Met Asn Ala Leu Leu Met Glu Gln Leu Asp Thr Glu Ser Asp Ser Pro
 1285 1290 1295
 Leu Ile Lys Pro Leu Leu Ala Leu Thr Ser Cys Pro Ala Cys Lys Gly
 1300 1305 1310
 Ser Gly Leu Asn Asp Tyr Ala Asn Tyr Val Arg Ile Asn Asn Thr Ser
 1315 1320 1325
 Leu Leu Asp Ile Tyr Gln Glu Asp Ala Thr Phe Leu Glu Ser Phe Leu
 1330 1335 1340
 Asn Thr Ile Gly Thr Asp Asp Thr Arg Ser Ile Ile Gln Asp Leu Met
 1345 1350 1355 1360
 Asn Arg Leu Thr Phe Ile Ser Lys Val Gly Leu Ser Tyr Ile Thr Leu
 1365 1370 1375
 Gly Gln Arg Gln Asp Thr Leu Ser Asp Gly Glu Asn Tyr Arg Leu His
 1380 1385 1390
 Leu Ala Lys Lys Ile Ser Ile Asn Leu Thr Asn Ile Val Tyr Leu Phe
 1395 1400 1405
 Glu Glu Pro Leu Ser Gly Leu His Pro Gln Asp Leu Pro Thr Ile Val
 1410 1415 1420
 Gln Leu Leu Lys Glu Leu Val Ala Asn Asn Asn Thr Val Ile Ala Thr
 1425 1430 1435 1440
 Asp Arg Ser Cys Ser Leu Ile Pro His Ala Asp His Ala Ile Phe Leu
 1445 1450 1455
 Gly Pro Gly Ser Gly Pro Gln Gly Gly Phe Leu Met Asp Ser Asp Thr
 1460 1465 1470
 Glu Val Cys Pro Ser Val Asp Leu His Ala Asn Val Pro Gln Thr Glu
 1475 1480 1485
 Val Cys Pro Lys Ala Pro Leu Ser Ile Ser Lys Ala Asn His Thr Arg
 1490 1495 1500
 Gly Ser Asp Arg Thr Leu Lys Val Asn Leu Ser Ile His His Ile Gln
 1505 1510 1515 1520
 Asn Leu Lys Val Ser Ala Pro Leu His Ala Leu Val Ala Ile Gly Gly
 1525 1530 1535
 Val Ser Gly Ser Gly Lys Thr Ser Leu Leu Glu Gly Phe Lys Lys
 1540 1545 1550
 Gln Ala Glu Leu Leu Ile Ala Lys Gly Thr Thr Thr Phe Ser Asp Leu
 1555 1560 1565
 Val Val Ile Asp Ser His Pro Ile Ala Ser Ser Gln Arg Ser Asp Ile
 1570 1575 1580
 Ser Thr Tyr Phe Asp Ile Ala Pro Ser Leu Arg Ala Phe Tyr Ala Ser
 1585 1590 1595 1600
 Leu Thr Gln Ala Lys Ala Leu Asn Ile Ser Ser Thr Met Phe Ser Thr

1605 1610 1615
 Asn Thr Lys Gln Gly Gln Cys Ser Asp Cys Gln Gly Leu Gly Tyr Gln
 1620 1625 1630
 Trp Ile Asp Arg Ala Phe Tyr Ala Leu Glu Lys Arg Pro Cys Pro Thr
 1635 1640 1645
 Cys Ser Gly Phe Arg Ile Gln Pro Leu Ala Gln Glu Val Leu Tyr Glu
 1650 1655 1660
 Gly Lys His Phe Gly Glu Leu Leu His Thr Pro Ile Glu Thr Val Ala
 1665 1670 1675 1680
 Leu Arg Phe Pro Phe Ile Lys Lys Ile Gln Lys Pro Leu Lys Ala Leu
 1685 1690 1695
 Leu Asp Ile Gly Leu Gly Tyr Leu Pro Ile Gly Gln Lys Leu Ser Ser
 1700 1705 1710
 Leu Ser Val Ser Glu Lys Thr Ala Leu Lys Thr Ala Tyr Phe Leu Tyr
 1715 1720 1725
 Gln Thr Pro Glu Thr Pro Thr Leu Phe Leu Ile Asp Glu Leu Phe Ser
 1730 1735 1740
 Ser Leu Asp Pro Ile Lys Lys Gln His Leu Pro Glu Lys Leu Arg Ser
 1745 1750 1755 1760
 Leu Ile Asn Ser Gly His Ser Val Ile Tyr Ile Asp His Asp Val Lys
 1765 1770 1775
 Leu Leu Lys Ser Ala Asp Tyr Leu Ile Glu Ile Gly Pro Gly Ser Gly
 1780 1785 1790
 Lys Gln Gly Gly Lys Leu Leu Phe Ser Gly Ser Pro Lys Asp Ile Tyr
 1795 1800 1805
 Ala Ser Lys Asp Ser Leu Leu Lys Lys Tyr Ile Cys Asn Glu Glu Leu
 1810 1815 1820
 Asp Ser
 1825

<210>114

<211>486

<212>PRT

<213>Chlamydia pneumoniae

<400>114

Asp Ser Met Ile Thr Arg Thr Lys Ile Ile Cys Thr Ile Gly Pro Ala
 1 5 10 15
 Thr Asn Ser Pro Glu Met Leu Ala Lys Leu Leu Asp Ala Gly Met Asn
 20 25 30
 Val Ala Arg Leu Asn Phe Ser His Gly Ser His Glu Thr His Gly Gln
 35 40 45
 Ala Ile Gly Phe Leu Lys Glu Leu Arg Glu Gln Lys Arg Val Pro Leu
 50 55 60
 Ala Ile Met Leu Asp Thr Lys Gly Pro Glu Ile Arg Leu Gly Asn Ile
 65 70 75 80
 Pro Gln Pro Ile Ser Val Ser Gln Gly Gln Lys Leu Arg Leu Val Ser
 85 90 95
 Ser Asp Ile Asp Gly Ser Ala Glu Gly Gly Val Ser Leu Tyr Pro Lys
 100 105 110
 Gly Ile Phe Pro Phe Val Pro Glu Gly Ala Asp Val Leu Ile Asp Asp
 115 120 125
 Gly Tyr Ile His Ala Val Val Val Ser Ser Glu Ala Asp Ser Leu Glu
 130 135 140
 Leu Glu Phe Met Asn Ser Gly Leu Leu Lys Ser His Lys Ser Leu Ser
 145 150 155 160
 Ile Arg Gly Val Asp Val Ala Leu Pro Phe Met Thr Glu Lys Asp Ile
 165 170 175
 Ala Asp Leu Lys Phe Gly Val Glu Gln Asn Met Asp Val Val Ala Ala
 180 185 190
 Ser Phe Val Arg Tyr Gly Glu Asp Ile Glu Thr Met Arg Lys Cys Leu
 195 200 205
 Ala Asp Leu Gly Asn Pro Lys Met Pro Ile Ile Ala Lys Ile Glu Asn
 210 215 220
 Arg Leu Gly Val Glu Asn Phe Ser Lys Ile Ala Lys Leu Ala Asp Gly
 225 230 235 240

Ile Met Ile Ala Arg Gly Asp Leu Gly Ile Glu Leu Ser Val Val Glu
 245 250 255
 Val Pro Asn Leu Gln Lys Met Met Ala Lys Val Ser Arg Glu Thr Gly
 260 265 270
 His Phe Cys Val Thr Ala Thr Gln Met Leu Glu Ser Met Ile Arg Asn
 275 280 285
 Val Leu Pro Thr Arg Ala Glu Val Ser Asp Ile Ala Asn Ala Ile Tyr
 290 295 300
 Asp Gly Ser Ser Ala Val Met Leu Ser Gly Glu Thr Ala Ser Gly Ala
 305 310 315 320
 His Pro Val Ala Ala Val Lys Ile Met Arg Ser Val Ile Leu Glu Thr
 325 330 335
 Glu Lys Asn Leu Ser His Asp Ser Phe Leu Lys Leu Asp Glu Ser Asn
 340 345 350
 Ser Ala Leu Gln Val Ser Pro Tyr Leu Ser Ala Ile Gly Leu Ala Gly
 355 360 365
 Ile Gln Ile Ala Glu Arg Ala Asp Ala Lys Ala Leu Ile Val Tyr Thr
 370 375 380
 Glu Ser Gly Ser Ser Pro Met Phe Leu Ser Lys Tyr Arg Pro Lys Phe
 385 390 395 400
 Pro Ile Ile Ala Val Thr Pro Ser Thr Ser Val Tyr Tyr Arg Leu Ala
 405 410 415
 Leu Glu Trp Gly Val Tyr Pro Met Leu Thr Gln Glu Ser Asp Arg Ala
 420 425 430
 Val Trp Arg His Gln Ala Cys Ile Tyr Gly Ile Glu Gln Gly Ile Leu
 435 440 445
 Ser Asn Tyr Asp Arg Ile Leu Val Leu Ser Arg Gly Ala Cys Met Glu
 450 455 460
 Glu Thr Asn Asn Leu Thr Leu Thr Ile Val Asn Asp Ile Leu Thr Gly
 465 470 475 480
 Ser Glu Phe Pro Glu Thr
 485

<210>115

<211>463

<212>PRT

<213>Chlamydia pneumoniae

<400>115

Leu Val Gly Lys Lys Phe His Gln Ile Lys Arg Thr Ile Leu Glu Ala
 1 5 10 15
 Pro Leu Tyr Tyr Leu Val Ser Gly Ile Ile Ala Leu Cys Arg His Thr
 20 25 30
 Pro Arg Ser Phe Leu Thr Gly Leu Gly Lys Gly Phe Gly Phe Leu Ala
 35 40 45
 Phe Tyr Ile Ile Ser Asp Tyr Arg Lys Thr Ala Leu Thr Asn Leu Ala
 50 55 60
 Leu Ala Phe Pro Glu Lys Thr Phe Asp Glu Arg Tyr Lys Ile Ala Arg
 65 70 75 80
 Gln Ser Leu Gln His Leu Ile Ile Thr Leu Leu Glu Leu Leu Ala Ile
 85 90 95
 Glu Gln Leu Val Gly Asn Ile Asp Lys Leu Ile Thr Ile Val Thr Ser
 100 105 110
 Ser Arg Asn Pro Lys Gly Phe Ser Ser Glu Glu Val Ile Ser Asn Glu
 115 120 125
 Asp Leu Glu Glu Thr Phe Lys Asn Leu Gln Glu Lys Gln Gly Leu Ile
 130 135 140
 Leu Phe Cys Gly His Gln Ala Asn Trp Glu Leu Pro Phe Leu Tyr Ile
 145 150 155 160
 Thr Lys Asn Tyr Pro Gly Ile Ala Phe Ala Lys Ala Ile Lys Asn Gln
 165 170 175
 Arg Leu Ser Lys Lys Ile Phe Ala Leu Arg Glu Val Phe Lys Gly Lys
 180 185 190
 Ile Val Pro Pro Lys Asn Gly Ile Gln Gln Gly Ile Glu Ala Leu Asn
 195 200 205
 Gln Gly Lys Leu Val Gly Ile Val Gly Asp Gln Ala Leu Leu Met Ser

210	215	220
Ser Tyr Thr Tyr Pro Leu Phe Gly Ser Pro Ala Phe Thr Thr Thr Ser		
225	230	235
Pro Ala Leu Leu Ala Tyr Lys Thr Gly Phe Pro Val Ile Ala Val Asn		
245	250	255
Val Ser Arg Gln Ala Lys Gly Phe Glu Val Ile Pro Ser Ala Lys Leu		
260	265	270
Tyr Ala Asn Lys Ser Leu Pro Met Lys Glu Ser Val Ala Ile Leu Met		
275	280	285
Asp Gln Met Met Gly Phe Leu Glu Lys Gly Ile Ala Ser Gln Pro Glu		
290	295	300
Gln Trp Met Trp Ile His Lys Arg Trp Lys Arg Lys Ile Ser Asn Val		
305	310	315
Ile Lys Lys Lys Tyr Arg Tyr Ser His Ile Leu Val Phe Val Asp Gln		
325	330	335
Val Ser Ser His Phe Ser Phe Leu Lys Ala Leu Ala Glu Cys Phe Ser		
340	345	350
Gly Thr Thr Leu His Leu Thr Leu Gly Asn Ala Asp His Leu Glu Glu		
355	360	365
Leu Gln Glu Gln Phe Pro Glu Tyr Ser Leu Ile Gln Leu Arg Asn Asp		
370	375	380
Gln Asp Ile Leu Ala Leu Pro Asn Cys Tyr Pro Ala Ile Phe Asp Leu		
385	390	395
Thr Asn Asn Leu Gln His Leu Tyr Lys His Phe Arg Lys Thr Gly Ser		
405	410	415
Cys Ala Val Tyr Ser Lys Arg Phe Leu Glu Lys Ser Leu Asp His Pro		
420	425	430
Gln Ala Pro Leu Lys Asn Ser Leu Arg Ile Phe Tyr Ser Lys Asn Leu		
435	440	445
Lys Asp Lys Glu Arg Lys Asn Phe Lys Val Lys Ser Lys Gly Pro		
450	455	460

<210>116

<211>114

<212>PRT

<213>Chlamydia pneumoniae

<400>116

Ile Ile Leu Leu Cys Phe Leu Leu Ser Gln Asp Phe Ser Phe Cys Ser		
1	5	10
Glu Asp Ala Pro Glu Arg Asn Met Leu Asn Ser Ile Val Thr Lys Arg		
20	25	30
Thr Arg Thr Ala Ala Thr Leu Leu Ile Pro Lys Val Ile Pro Glu Ala		
35	40	45
Pro Ser Thr Pro Val Gln Ile Lys Met Ile Ser Ile Lys Glu Thr Ile		
50	55	60
Ala Val Arg Ala Lys Ser Pro Ala Asp Thr Val Ala Thr Phe Ala Leu		
65	70	75
Asp Ser Glu Leu Ser Glu Gln Gln Gln Thr Val Leu Ile Ala Ala Ser		
85	90	95
Lys Pro Trp Pro Lys Gln Ser Ile Lys His Ile Lys Phe Pro Leu Thr		
100	105	110
Lys Phe		

<210>117

<211>104

<212>PRT

<213>Chlamydia pneumoniae

<400>117

Asn Leu Val Arg Gly Asn Phe Met Cys Leu Ile Asp Cys Leu Gly Gln		
1	5	10
Gly Phe Glu Ala Ala Ile Asn Thr Val Cys Cys Cys Ser Asp Ser Ser		
20	25	30
Glu Ser Lys Ala Asn Val Ala Thr Val Ser Ala Gly Leu Leu Ala Leu		
35	40	45
Thr Ala Ile Val Ser Phe Ile Leu Ile Ile Leu Ile Cys Thr Gly Val		

50 55 60
 Leu Gly Ala Ser Gly Met Thr Phe Gly Met Ser Asn Val Ala Ala Val
 65 70 75 80
 Leu Val Leu Leu Val Thr Ile Leu Leu Ser Met Phe Leu Ser Gly Ala
 85 90 95
 Ser Ser Leu Gln Asn Glu Lys Ser
 100
 <210>118
 <211>434
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>118
 Arg Thr Gln Lys Lys Thr Phe Ile Leu Leu Asp Leu Glu Thr Met Ile
 1 5 10 15
 Lys Phe Leu Ser Gln Leu Phe Ile Arg His Trp Pro Arg Lys Val Val
 20 25 30
 Ser Leu Gly Phe Ala Ile Ile Ile Trp Ile Leu Val Gly Gln Ser Val
 35 40 45
 Thr Ile Thr Arg Thr Leu Thr Asn Val Pro Val Arg Ile Val Asp Leu
 50 55 60
 His Pro Asp Gln Thr Val Leu Gly Leu Gln Lys Ser Gly Phe Leu Asn
 65 70 75 80
 Lys Lys Val Ser Leu Thr Ile Thr Gly Asn Lys Asn Thr Val Gln Asp
 85 90 95
 Leu Arg Pro Ser Asn Leu Glu Val Val Ile Ser Ala Ala Asn His Thr
 100 105 110
 Glu Ser Trp Ile Ala Thr Ile Asp Lys His Asn Leu Val Ser Val Asp
 115 120 125
 His Glu Ile Asn Ile Arg Lys Asp Ile His Ser Val Asp Ala Asn Asp
 130 135 140
 Ile Phe Val Arg Leu Thr Gln Tyr Val Thr Glu Asp Ile Leu Leu Thr
 145 150 155 160
 Ile Thr Lys Pro Ile Gly Ser Pro Pro Lys Gly Tyr Glu Tyr Leu Asp
 165 170 175
 Val Trp Pro Lys Tyr Leu Asn Gln Lys Val Ser Gly Pro Lys Glu Tyr
 180 185 190
 Ile Asn Ala Leu Lys Glu Gln Gly Leu Glu Leu Thr Phe Asn Leu Asn
 195 200 205
 Lys Ile Ser Phe Glu Glu Leu Glu Arg Asn Arg Ile Ala Gln Gly Ser
 210 215 220
 His Asp Glu Ile Ile Phe Pro Ile Pro Lys Glu Trp Lys Lys Ile Leu
 225 230 235 240
 Ile Pro Phe Glu Asn Thr Phe Met Asp Leu Asn Asp Pro Gln Ala Asp
 245 250 255
 Phe Leu Arg Leu Leu Phe Leu Lys Arg Glu Cys Ile Pro Leu Asn Leu
 260 265 270
 Asn Leu Pro Val Phe Leu Phe Phe Pro Val Thr Phe Ile Gln Thr Met
 275 280 285
 Asn Pro Leu Glu Tyr Ser Leu Asp Pro Val Pro Pro Ile Ile Leu Asn
 290 295 300
 His Gly Ile His Gln Ile Asn Ile Pro Leu Tyr Val Lys Asp Val Ser
 305 310 315 320
 Arg Gln Phe Leu Asp Val Val Lys Asn Asn Met Val Leu Thr Ile Val
 325 330 335
 Met Pro Ser Pro Gln Asp Pro Ser Ser Ile Asn Trp Ala Ile Glu Phe
 340 345 350
 Leu Asp Glu Lys Thr Leu Glu Asn Thr Phe Leu Gln Thr Ile Ile Ala
 355 360 365
 Gln Glu His Gly Ile Leu His Asp Ile Ala Leu Ile Asp Glu Ala Gly
 370 375 380
 Ile Arg His Arg Phe Arg Glu Tyr Leu Arg Lys Leu Ala Leu Phe Thr
 385 390 395 400
 Ala Asp Gly Glu Pro Leu Asn Leu Ile Ala Glu Ile Lys Asn Asn Lys
 405 410 415

Val Val Ile Gln Thr Lys Thr Lys Glu Thr Thr Lys Leu Tyr Lys Lys
 420 425 430
 Glu Trp

<210>119

<211>279

<212>PRT

<213>Chlamydia pneumoniae

<400>119

Leu Cys Asn Phe Ser Gln Tyr Thr Thr Gln Gly Pro Ser Lys Thr Met
 1 5 10 15
 Pro Phe Asp Ile Thr Tyr Tyr Thr Thr Pro Leu Leu Glu Ile Ile Leu
 20 25 30
 Ile Trp Val Met Leu Asn Tyr Leu Leu Lys Phe Phe Trp Gly Thr Arg
 35 40 45
 Ala Met Asp Val Val Phe Gly Leu Leu Ala Phe Leu Phe Leu Phe Val
 50 55 60
 Leu Ala Asp Lys Leu His Leu Pro Ile Ile Arg Arg Leu Met Leu His
 65 70 75 80
 Val Val Asn Ile Ala Ala Ile Val Val Phe Ile Ile Phe Gln Pro Glu
 85 90 95
 Ile Arg Leu Ala Leu Ser Arg Ile Arg Phe His Gly Lys Lys Phe Phe
 100 105 110
 Ile Asp Thr Gln Glu Gln Phe Val Glu Gln Leu Ala Ala Ser Ile Tyr
 115 120 125
 Gln Leu Ser Glu Arg Gln Ile Gly Ala Leu Val Val Leu Glu Asn Lys
 130 135 140
 Asp Ser Phe Asp Glu Tyr Leu Ser Phe Ser Ser Val Lys Ile Asn Ala
 145 150 155 160
 Thr Phe Ser Glu Glu Leu Leu Glu Thr Ile Phe Glu Pro Ser Ser Pro
 165 170 175
 Leu His Asp Gly Ala Val Ile Leu Arg Gly Asp Ile Leu Ala Tyr Ala
 180 185 190
 Arg Val Val Leu Pro Leu Ala His Asp Thr Thr Gln Leu Ser Arg Ser
 195 200 205
 Met Gly Thr Arg His Arg Ala Ala Leu Gly Ala Ser Gln Arg Ser Asp
 210 215 220
 Ala Leu Ile Ile Thr Val Ser Glu Glu Asn Gly Ser Val Ser Leu Ser
 225 230 235 240
 Arg Asp Gly Leu Leu Thr Arg Gly Val Lys Ile Asp Arg Phe Lys Ala
 245 250 255
 Val Leu Arg Ser Ile Leu Ser Pro Lys Glu His Lys Arg Lys Pro Leu
 260 265 270
 Phe Ser Trp Ile Trp Lys Arg
 275

<210>120

<211>448

<212>PRT

<213>Chlamydia pneumoniae

<400>120

Met Asp Ala Leu Ile Leu Ser Arg Ile Gln Phe Gly Leu Phe Ile Thr
 1 5 10 15
 Phe His Tyr Leu Phe Val Pro Leu Ser Met Gly Leu Ser Met Met Leu
 20 25 30
 Val Ile Met Glu Gly Leu Tyr Leu Val Thr Lys Lys Gln Ile Tyr Lys
 35 40 45
 Gln Met Thr Trp Phe Trp Val Gly Ile Phe Ala Leu Thr Phe Val Leu
 50 55 60
 Gly Val Val Thr Gly Ile Met Gln Ile Phe Ser Phe Gly Ser Asn Trp
 65 70 75 80
 Ala Asn Phe Ser Glu Tyr Thr Gly Asn Ile Phe Gly Thr Leu Leu Gly
 85 90 95
 Ser Glu Gly Val Phe Ala Phe Phe Leu Glu Ser Gly Phe Leu Gly Ile
 100 105 110

Leu Leu Phe Gly Arg His Lys Val Ser Lys Lys Met His Phe Phe Ser
 115 120 125
 Thr Cys Met Val Ala Leu Gly Ala His Met Ser Ala Phe Trp Ile Ile
 130 135 140
 Cys Ala Asn Ser Trp Met Gln Thr Pro Ser Gly Tyr Glu Met Val Met
 145 150 155 160
 His Lys Gly Lys Leu Ile Pro Ala Leu Thr Ser Phe Trp Gly Val Val
 165 170 175
 Phe Ser Pro Thr Thr Ile Asp Arg Phe Ile His Ala Val Leu Gly Thr
 180 185 190
 Trp Leu Ser Gly Val Phe Leu Val Ile Ser Val Ser Ala Tyr Tyr Leu
 195 200 205
 Trp Lys Lys Arg His His Glu Phe Ala Lys Gln Gly Met Lys Ile Gly
 210 215 220
 Thr Ile Cys Ala Val Ile Val Leu Val Leu Gln Leu Trp Ser Ala Asp
 225 230 235 240
 Val Thr Ala Arg Gly Val Ala Lys Asn Gln Pro Ala Lys Leu Ala Ala
 245 250 255
 Phe Glu Gly Ile Phe Lys Thr Glu Glu Tyr Thr Pro Ile Trp Ala Phe
 260 265 270
 Gly Tyr Val Asp Met Glu Lys Glu Arg Val Ile Gly Leu Pro Ile Pro
 275 280 285
 Gly Ala Leu Ser Phe Leu Val His Arg Asn Ile Lys Thr Pro Val Thr
 290 295 300
 Gly Leu Asp Gln Ile Pro Arg Asp Glu Trp Pro Asn Val Gln Ala Val
 305 310 315 320
 Phe Gln Leu Tyr His Leu Met Ile Met Leu Trp Gly Val Met Val Ala
 325 330 335
 Leu Thr Leu Ile Ser Trp Ser Ala Tyr Lys Gly Trp Arg Trp Ala Leu
 340 345 350
 Lys Pro Phe Phe Leu Val Ile Leu Thr Phe Ser Val Leu Leu Pro Glu
 355 360 365
 Ile Cys Asn Glu Cys Gly Trp Cys Ala Ala Glu Met Gly Arg Gln Pro
 370 375 380
 Trp Val Val Gln Gly Leu Leu Lys Thr Lys Asp Ala Val Ser Pro Ile
 385 390 395 400
 Val Gln Ala Asn Lys Ile Val Gln Ser Leu Val Ile Phe Ser Leu Val
 405 410 415
 Phe Ile Ala Leu Leu Thr Leu Phe Ile Thr Val Leu Cys Lys Lys Ile
 420 425 430
 Lys His Gly Pro Glu Glu Glu Asn Asp Leu Thr Glu Phe Glu Val Lys
 435 440 445

<210>121

<211>268

<212>PRT

<213>Chlamydia pneumoniae

<400>121

Met Glu Leu Ser Leu Thr Ser Leu Leu Pro Leu Ala Trp Tyr Val Ile
 1 5 10 15
 Leu Gly Val Ala Val Phe Ala Tyr Ser Phe Gly Asp Gly Phe Asp Leu
 20 25 30
 Gly Leu Gly Ala Val Tyr Leu Lys Ala Lys Glu Asp Lys Glu Arg Arg
 35 40 45
 Ile Leu Leu Asn Ser Ile Gly Pro Val Trp Asp Gly Asn Glu Val Trp
 50 55 60
 Leu Val Ile Ile Val Gly Gly Leu Phe Ala Gly Phe Pro Ala Cys Tyr
 65 70 75 80
 Ala Thr Leu Leu Ser Ile Phe Tyr Met Pro Ile Trp Thr Leu Val Leu
 85 90 95
 Leu Tyr Ile Phe Arg Gly Cys Ser Leu Glu Phe Arg Ser Lys Ser Glu
 100 105 110
 Ser Val Ser Trp Lys Ile Phe Trp Asp Ile Ile Phe Ile Cys Ser Gly
 115 120 125
 Thr Ala Ile Ser Phe Phe Leu Gly Thr Ile Val Gly Asn Leu Ile Leu

130	135	140
Gly Leu Pro Leu Ser	Pro Asp Thr Ser Tyr	Ala Ser Leu Ser Trp Ile
145	150	155
Leu Phe Phe Arg Pro Tyr	Ala Ala Leu Cys Gly	Ala Val Val Ala Ser
165	170	175
Ala Phe Ala Thr His Gly	Ser Phe Phe Ala Leu	Met Lys Thr Ser Asp
180	185	190
Ser Leu Asn Ala Arg Ile	Ala Gln Gln Phe Pro	Tyr Ile Leu Ser Ser
195	200	205
Phe Leu Val Phe Tyr Val	Leu Phe Leu Gly Ala	Ser Leu Ile Ser Ile
210	215	220
Pro Lys Arg Phe Asp Ala	Phe Pro Thr Tyr Pro	Leu Leu Ile Leu Leu
225	230	235
Ile Ala Leu Thr Ser Cys	Cys Cys Val Ala Ala	Lys Thr Ser Val Ser
245	250	255
Lys Lys His Tyr Gly Thr	His Leu Phe Ile Leu	His
260	265	

<210>122

<211>403

<212>PRT

<213>Chlamydia pneumoniae

<400>122

Glu Lys Ser Met Arg Met	Leu Gln Ile Ser Met	Leu Leu Leu Ala Leu
1	5	10
Gly Thr Ala Ile Asn Ser	Pro Ala Ile Tyr Ala	Ala Asp Ser Gln Ser
20	25	30
Val Ser Phe Pro Glu Gln	Leu Pro Ser Ser Phe	Thr Gly Glu Ile Lys
35	40	45
Gly Asn His Val Arg Met	Arg Leu Ala Pro His	Thr Asp Gly Thr Ile
50	55	60
Ile Arg Glu Phe Ser Lys	Gly Asp Leu Val Ala	Val Ile Gly Glu Ser
65	70	75
Lys Asp Tyr Tyr Val Ile	Ser Ala Pro Pro Gly	Ile Thr Gly Tyr Val
85	90	95
Phe Arg Ser Phe Val Leu	Asp Asn Val Val Glu	Gly Glu Gln Val Asn
100	105	110
Val Arg Leu Glu Pro Ser	Thr Ser Ala Pro Val	Leu Val Arg Leu Ser
115	120	125
Arg Gly Thr Gln Ile Gln	Pro Ala Ser Gln Glu	Pro His Gly Lys Trp
130	135	140
Leu Glu Val Val Leu Pro	Ser Gln Cys Val Phe	Tyr Val Ala Lys Asn
145	150	155
Phe Val Ala Asn Lys Gly	Pro Ile Glu Leu Tyr	Thr Gln Arg Glu Gly
165	170	175
Gln Lys Lys Ile Ala Met	Asp Leu Ile Asn Ser	Ala Leu Asn Phe Ala
180	185	190
His Ile Glu Leu Glu Lys	Ser Leu Asn Glu Ile	Asp Leu Glu Ala Ile
195	200	205
Tyr Lys Lys Ile Asn Leu	Val Gln Ser Glu Glu	Phe Lys Asp Val Pro
210	215	220
Gly Ile Gln Gly Leu Ile	Gln Lys Ala Leu Glu	Glu Ile Gln Asp Ala
225	230	235
Tyr Leu Ser Lys Ser Leu	Glu Ser Gln Asn Thr	Ser Ile Ala Ser Ser
245	250	255
Gln Cys Ser Thr Pro Lys	Val Ser Ser Ser Glu	Val Thr Thr Ser Leu
260	265	270
Leu Ser Arg His Ile Arg	Lys Gln Thr Ala Leu	Lys Thr Ala Pro Leu
275	280	285
Thr Gln Gly Arg Glu Asn	Leu Glu Tyr Ser Leu	Phe Arg Ile Trp Ala
290	295	300
Ser Met Gln Gln Gly Asn	Asp His Ser Glu Ala	Leu Thr Gln Glu Ala
305	310	315
Phe Tyr Arg Ala Glu Gln	Lys Lys Lys Gln	Val Leu Ala Gly Val Leu
325	330	335

Glu Val Tyr Pro His Val Val Lys Asn Asn Pro Gly Asp Tyr Leu Leu
 340 345 350
 Lys Ala Gln Glu Asn Thr Ile Ala Phe Leu Tyr Gly Thr Ser Ile Asn
 355 360 365
 Leu Glu Gln Trp Leu Gly Lys Arg Val Thr Val Glu Cys Leu Pro Arg
 370 375 380
 Pro Asn Asn His Phe Ala Phe Pro Ala Tyr Tyr Val Val Gly Ile Lys
 385 390 395 400
 Glu Ala Ser

<210>123

<211>255

<212>PRT

<213>Chlamydia pneumoniae

<400>123

Tyr Val Pro Phe Arg Lys Phe Ser Asn Gln Asn Pro Met Leu Leu Ile
 1 5 10 15
 Tyr Cys Lys Lys Lys Glu Ile His Leu Gln Trp Pro Gln Thr Ala Lys
 20 25 30
 Ile Arg Phe Thr Pro Lys Ile Ala Met Lys Val Lys Ile Asn Asp Gln
 35 40 45
 Leu Ile Cys Ile Pro Pro Phe Ile Ser Ala Arg Trp Ser Gln Ile Ala
 50 55 60
 Phe Ile Glu Ser Gln Glu Gly Glu Asn Lys Asp Gln Gly Thr Leu Arg
 65 70 75 80
 Leu His Leu Ile Asp Gly Lys Ile Ile Ser Ile Pro Asn Leu Asp Gln
 85 90 95
 Ser Ile Ile Asp Ile Ala Phe Gln Glu His Leu Leu Tyr Leu Glu Thr
 100 105 110
 Ser Gln Ser Gly Lys Glu Asp Ser Arg Asp Asp Asp Lys Leu Gly Val
 115 120 125
 Gly Val Leu Met Asn Val Leu Gln Gln Ile Thr Lys Gly Asn Asp Ile
 130 135 140
 Gln Val Leu Pro Lys Asn Leu Ile Ser Pro Leu Phe Ser Gly Thr Asn
 145 150 155 160
 Pro Ile Glu Ala Ile Leu Gln His Thr Pro Glu His Lys Asp His Pro
 165 170 175
 Asp Ala Pro Thr Asp Val Leu Glu Lys Met Ala Asp Val Ile Arg Val
 180 185 190
 Leu Ser Gly Asn Asn Ala Thr Leu Leu Pro Arg Pro Glu Pro His Cys
 195 200 205
 Asn Cys Met His Cys Gln Ile Gly Arg Val Met Asn Glu Glu Asp Thr
 210 215 220
 Leu Ala Val Ser Asp Lys Asp Leu Thr Phe Arg Thr Trp Asp Ile Met
 225 230 235 240
 Gln Ser Gly Asp Lys Val Val Tyr Cys Asn Glu Ser Leu Lys Ser
 245 250 255

<210>124

<211>432

<212>PRT

<213>Chlamydia pneumoniae

<400>124

Val Arg Thr Gln Met Lys Lys Thr Met Val Ile Asp Thr Ser Val Phe
 1 5 10 15
 Ile Tyr Asp Pro Glu Ala Leu Phe Ser Phe Glu Asn Thr Arg Ile Ile
 20 25 30
 Ile Pro Phe Pro Val Ile Glu Glu Leu Glu Ala Phe Gly Lys Phe Arg
 35 40 45
 Asp Glu Ser Ala Lys Asn Ala Ser Arg Ala Leu Ser Asn Ile Arg Leu
 50 55 60
 Leu Leu Glu Asn Ala Lys Thr Lys Val Thr Asp Gly Val Leu Leu Pro
 65 70 75 80
 Ser Gly Ser Glu Leu Arg Ile Glu Val Ala Pro Leu Ser Asn Asp Asp
 85 90 95

Arg Arg Gly Lys Leu Leu Thr Leu Glu Leu Leu Lys Ile Ala Lys
 100 105 110
 Arg Glu Pro Met Val Phe Val Thr Lys Ser Leu Gly Arg Arg Val Arg
 115 120 125
 Ala Glu Ala Leu Gln Ile Glu Ser Arg Asp Tyr Glu Ser Lys Arg Phe
 130 135 140
 Ser Phe Arg Ser Leu Tyr Arg Gly Phe Arg Glu Leu Gln Val Ser Gln
 145 150 155 160
 Glu Asp Ile Glu Asn Phe Tyr Lys Asn Gly Tyr Leu Asp Leu Pro Leu
 165 170 175
 Asp Val Val Ser Ser Pro Asn Glu Tyr Phe Phe Met Ser Ala Gly Glu
 180 185 190
 Asn His Phe Ala Leu Gly Arg Tyr Tyr Val Ser Glu Gly Lys Ile Ile
 195 200 205
 Ala Leu Lys Ala Met Asp Lys Ser Val Trp Gly Ile Lys Pro Leu Asn
 210 215 220
 Thr Glu Gln Arg Cys Ala Leu Asp Leu Leu Leu Arg Asp Asp Val Lys
 225 230 235 240
 Leu Val Thr Leu Ile Gly Gln Ala Gly Ser Gly Lys Thr Ile Leu Ala
 245 250 255
 Leu Ala Ala Ala Met His Lys Val Phe Asp Lys Glu Thr Tyr Asn Lys
 260 265 270
 Val Leu Val Ser Arg Pro Ile Val Pro Met Gly Arg Asp Ile Gly Phe
 275 280 285
 Leu Pro Gly Leu Lys Glu Asp Lys Leu Met His Trp Met Gln Pro Ile
 290 295 300
 Tyr Asp Asn Met Glu Val Leu Phe Ser Ile Asn Gln Met Gly Asn Ser
 305 310 315 320
 Ser Glu Ala Leu Gln Ala Leu Met Asp Ala Lys Lys Leu Glu Met Glu
 325 330 335
 Ala Leu Thr Tyr Ile Arg Gly Arg Ser Leu Pro Lys Ala Phe Ile Ile
 340 345 350
 Ile Asp Glu Ala Gln Asn Leu Thr Pro His Glu Ile Lys Thr Ile Ile
 355 360 365
 Ser Arg Ala Gly Lys Gly Thr Lys Ile Val Leu Thr Gly Asp Pro Thr
 370 375 380
 Gln Ile Asp Ser Leu Tyr Phe Asp Glu Asn Ser Asn Gly Leu Thr Tyr
 385 390 395 400
 Leu Val Gly Lys Phe His His Leu Ala Leu Tyr Gly His Met Phe Met
 405 410 415
 Thr Arg Thr Glu Arg Ser Glu Leu Ala Ala Ala Ala Thr Ile Leu
 420 425 430

<210>125

<211>184

<212>PRT

<213>Chlamydia pneumoniae

<400>125

Asn Asn Glu Ser Arg Trp Gly Gly Tyr Lys Ser Ser Ser Ile Gly Ser
 1 5 10 15
 Ser Gln Cys Arg Phe Leu Gly Leu Ser Gln Arg Pro Leu Asn Pro Glu
 20 25 30
 Arg Gln Gly Thr Pro Leu Asn Glu Gly Glu Cys Arg Ala Gly Met Trp
 35 40 45
 Arg Asn Ala Asp Gly Ser Asn His Thr Gly Lys Gln Gly Lys Pro His
 50 55 60
 Tyr Leu Ala Gln Leu Leu Gly Pro Lys Ala Val Asp His His Asn Lys
 65 70 75 80
 Ser Gln Ala Ala Phe Asp Arg Cys Lys Asn Ala Tyr Leu Asn Cys Phe
 85 90 95
 Ser Leu Ala Gln Thr Leu Gly Val Thr Phe Leu Gln Ile Pro Leu Ile
 100 105 110
 Ser Ser Gly Ile Tyr Ala Pro Pro Glu Asn Arg Lys Lys Pro Asn Ser
 115 120 125
 Glu Glu Asn Lys Val Arg Met Arg Trp Ile His Ala Val Lys Cys Ala

130 135 140
 Leu Val Ala Ala Met Gln Glu Phe Gly Asn Glu Pro Gly Asn Thr Asp
 145 150 155 160
 Arg Arg Met Leu Ile Val Leu Thr Asp Leu Lys Thr Pro Ala Ile Thr
 165 170 175
 Asp Pro Lys Lys Lys Ser His Leu
 180

<210>126

<211>195

<212>PRT

<213>Chlamydia pneumoniae

<400>126

Lys Asn Leu Phe His Tyr Lys Ala Ile Leu Met Ser Ile Phe Asn Glu
 1 5 10 15
 Glu Val Phe Ile Ile Ser His Arg His Thr Pro Leu Gly Gln Thr Ser
 20 25 30
 Thr Ala Leu Arg Asn Thr Pro Leu Val Asn Pro Leu His Arg Thr Asn
 35 40 45
 Leu Gln Arg Ile Ala Ser Tyr Ile Pro Ile Phe Ser Thr Phe Ile Gly
 50 55 60
 Ile Lys Thr Leu Lys Gly Ile Ser Ser Leu Gln Tyr Ser Met Val Leu
 65 70 75 80
 Met Thr Gly Asn Phe Ser Ser Val Cys Lys Thr Leu Pro Cys Pro Glu
 85 90 95
 Ile Tyr Glu Glu Leu Pro Lys Val Arg Lys Glu Ala Trp Leu Glu Ile
 100 105 110
 Phe Gly Ile Lys Ala Leu Tyr Tyr Leu Val Leu Gly Val Ile Lys Ile
 115 120 125
 Ile Lys Leu Ile Val Arg Tyr Leu Cys Pro Cys Cys Arg Pro Pro Glu
 130 135 140
 Pro Arg Glu Pro Gln Asn Pro Leu Thr Pro Thr Pro Leu Asp Met Gly
 145 150 155 160
 Gln Gln Ile Asp Ala Ile Phe Ser Thr Pro Thr Ser Pro Thr Gly Phe
 165 170 175
 Lys Asp Pro Phe Leu Asp Asp Leu Leu Gln Glu Asp Lys Lys Lys Ala
 180 185 190
 Pro His Leu
 195

<210>127

<211>1043

<212>PRT

<213>Chlamydia pneumoniae

<400>127

Met Thr Ala Asp Glu Val Gly Lys Asn Ser Phe Ala Lys Lys Glu Glu
 1 5 10 15
 Gln Val Leu Lys Phe Trp Lys Asp Asn Gln Ile Phe Glu Lys Ser Leu
 20 25 30
 Gln Asn Arg Gln Gly Lys Thr Leu Tyr Ser Phe Tyr Asp Gly Pro Pro
 35 40 45
 Phe Ala Thr Gly Leu Pro His Tyr Gly His Leu Leu Ala Ser Thr Ile
 50 55 60
 Lys Asp Val Val Gly Arg Tyr Ala Thr Met Asp Gly Tyr Tyr Val Pro
 65 70 75 80
 Arg Arg Phe Gly Trp Asp Cys His Gly Val Pro Val Glu Tyr Glu Val
 85 90 95
 Glu Lys Ser Leu Ser Leu Thr Ala Pro Gly Pro Ile Glu Asp Phe Gly
 100 105 110
 Ile Ala Ser Phe Asn Glu Glu Cys Arg Lys Ile Val Phe Arg Tyr Val
 115 120 125
 His Glu Trp Glu Tyr Tyr Ile Asn Arg Ile Gly Arg Trp Val Asp Phe
 130 135 140
 Ser Ser Thr Trp Lys Thr Met Asp Ala Ser Phe Met Glu Ser Val Trp
 145 150 155 160
 Trp Val Phe Gln Ser Leu Tyr Asn Gln Gly Leu Val Tyr Glu Gly Thr

418

675 680 685
 Val Gly Lys Val Arg Glu Ser Met Ser Gln Tyr His Leu Asn Phe Ala
 690 695 700
 Val Glu Pro Phe Val Thr Phe Ile Asp Asp Leu Thr Asn Trp Tyr Ile
 705 710 715 720
 Arg Arg Cys Arg Arg Arg Phe Trp Glu Ala Glu Asp Thr Pro Asp Arg
 725 730 735
 Arg Ala Ala Phe Ser Thr Leu Tyr Glu Val Leu Thr Val Phe Cys Lys
 740 745 750
 Val Ile Ala Pro Phe Val Pro Phe Leu Ala Glu Asp Ile Tyr Gln Lys
 755 760 765
 Leu Lys Leu Glu Lys Glu Pro Glu Ser Val His Leu Cys Asp Phe Pro
 770 775 780
 Gln Val Glu Met Asp Lys Ile Leu Pro Asp Leu Glu Lys Arg Met His
 785 790 795 800
 Asp Ile Arg Glu Ile Val Gly Leu Gly His Ser Leu Arg Lys Glu His
 805 810 815
 Lys Leu Lys Val Arg Gln Pro Leu Ala Asn Phe Tyr Val Val Gly Ser
 820 825 830
 Lys Asp Arg Leu Ser Leu Leu Lys Thr Phe Glu Gly Leu Ile Ala Glu
 835 840 845
 Glu Leu Asn Val Lys Asn Val Ile Phe Tyr Glu Glu Ala Pro Ser Phe
 850 855 860
 Ile Tyr Thr Thr Val Lys Pro Asn Phe Arg Met Leu Gly Lys Lys Val
 865 870 875 880
 Gly Ser Lys Met Lys Glu Val Gln Lys Ala Leu Ser Glu Leu Pro Asn
 885 890 895
 Asn Ala Ile Asp Lys Leu Ile Gln Glu Thr Trp Val Leu Thr Ile
 900 905 910
 Asp Asp Arg Glu Ile Ala Leu Asp Gly Asp Asp Val Val Ile Cys Arg
 915 920 925
 His Thr Asp Pro Gly Tyr Ile Ala Arg Ser Ser Ala Leu Phe Ser Val
 930 935 940
 Ile Leu Asp Cys Gln Leu Arg Glu Pro Leu Ile Val Glu Gly Ile Ala
 945 950 955 960
 Arg Glu Leu Val Asn Lys Ile Asn Thr Met Arg Arg Asn Gln Gln Leu
 965 970 975
 His Val Ser Asp Arg Ile Ala Leu Arg Ile Lys Thr Thr Glu Ala Val
 980 985 990
 His Arg Ala Phe Leu Asp Tyr Glu Asn Tyr Ile Cys Glu Glu Thr Leu
 995 1000 1005
 Ile Ile Ala Tyr Asp Phe Thr Gln Asp Ser Asp Phe Gln Gly Glu Asn
 1010 1015 1020
 Trp Asp Ile Asn Gly His Ala Thr Gln Ile Glu Ile Thr Val Ser Ser
 1025 1030 1035 1040
 Ile Asp Ser

<210>128

<211>636

<212>PRT

<213>Chlamydia pneumoniae

<400>128

Met Lys Gln His Tyr Ser Leu Asn Lys Ser Arg His Ile Leu Arg Ser
 1 5 10 15
 Thr Tyr Lys Leu Leu Lys Ser Lys Lys Leu Ala His Ser Pro Ala Asp
 20 25 30
 Lys Lys Gln Leu Gln Glu Leu Leu Glu Gln Leu Glu Glu Ala Ile Phe
 35 40 45
 Glu His Asp Gln Glu Thr Ala Ser Asp Leu Ala Gln Gln Ala Leu Ala
 50 55 60
 Phe Ser Asn Arg Tyr Pro Asn Ser Phe Gly Arg Lys Thr Tyr Glu Leu
 65 70 75 80
 Ile Lys Ala Leu Leu Phe Ala Gly Val Val Ala Phe Leu Val Arg Gln
 85 90 95

Phe Trp Phe Glu Leu Tyr Glu Val Pro Thr Gly Ser Met Arg Pro Thr
 100 105 110
 Ile Leu Glu Gln Asp Arg Ile Leu Val Ser Lys Thr Thr Phe Gly Leu
 115 120 125
 His Cys Pro Phe Ala Lys Lys Pro Leu Ala Phe Asn Pro Glu Ser Val
 130 135 140
 Thr Arg Gly Gly Leu Val Val Phe Thr Val Gly Asp Leu Pro Ile Pro
 145 150 155 160
 Asp Ala Asp Thr Lys Tyr Phe Gly Leu Ile Pro Gly Lys Lys Arg Tyr
 165 170 175
 Ile Lys Arg Cys Met Gly Arg Pro Gly Asp Phe Leu Tyr Phe Tyr Gly
 180 185 190
 Gly Lys Ile Tyr Gly Leu Asp Asp Ala Gly Lys Arg Ile Glu Phe Pro
 195 200 205
 Ser Val His Gly Leu Glu Asn Leu Tyr His Val Pro Tyr Ile Ser Phe
 210 215 220
 Asp Gly Thr Thr Ser Ser His Thr Glu Gly Gln Lys Thr Ile Ile Asp
 225 230 235 240
 Phe Lys Gln Phe Asn Gln Ser Tyr Gly Arg Leu Ile Phe Pro Gln Thr
 245 250 255
 Ser Met Tyr Gly Gln Phe Phe Asp His Lys Glu Trp His Gln Asp Glu
 260 265 270
 Pro Asn Lys Leu Lys Asp Pro His Leu Ser Pro Val Ser Tyr Ala Asp
 275 280 285
 Leu Phe Gly Met Gly Asn Tyr Ala Met Val Arg Ile Leu Thr Glu His
 290 295 300
 Gln Ala Arg Thr Ser His Leu Leu Pro Asn Pro Gly Ser Pro Thr Lys
 305 310 315 320
 Val Tyr Leu Glu Ile Cys His Thr Ala Asn Leu Ser Tyr Pro Lys Pro
 325 330 335
 Leu Leu Arg His Tyr Glu His Gln Leu Ser Pro Ala Ile Gln Pro Met
 340 345 350
 Lys Thr Leu Leu Pro Leu Arg Lys Glu His Leu His Leu Ile Arg Asn
 355 360 365
 Asn Leu Thr Thr Ser Arg Phe Ile Val Ala Gln Gly Cys Ala Tyr Lys
 370 375 380
 Tyr His Gln Phe Lys Ile Asn Thr Ser Gly Ile Ala Lys Ala Tyr Ala
 385 390 395 400
 Ile Leu Leu Pro Lys Val Pro Asp Gly Cys Tyr Glu Tyr Ser Lys Gly
 405 410 415
 Glu Ala Tyr Gln Ile Gly Phe Gly Glu Ile Arg Tyr Lys Leu Lys Ser
 420 425 430
 Ser His Pro Leu Thr Gln Leu Asn Asp Lys Gln Val Ile Glu Leu Phe
 435 440 445
 Asn Cys Gly Ile Asn Phe Ser Ser Ile Tyr Asn Pro Val Asn Pro Leu
 450 455 460
 Gln Ala Pro Leu Pro Asn Arg Tyr Ala Phe Phe Asn Gln Gly Asn Leu
 465 470 475 480
 Tyr Ile Met Asp Ser Pro Val Phe Ile Lys Asn Asp Pro Thr Leu Gln
 485 490 495
 Lys Phe Val Thr Ser Glu Thr Glu Lys Gln Glu Gly Ser Ser Glu Thr
 500 505 510
 Gln Pro Tyr Ile Ala Phe Val Asp Lys Gly Leu Pro Pro Glu Asp Phe
 515 520 525
 Lys Glu Phe Val Glu Phe Ile His Asn Phe Gly Ile Gln Val Pro Lys
 530 535 540
 Gly His Val Leu Val Leu Gly Asp Asn Tyr Pro Met Ser Ala Asp Ser
 545 550 555 560
 Arg Glu Phe Gly Phe Val Pro Met Glu Asn Leu Leu Gly Ser Pro Leu
 565 570 575
 Cys Thr Phe Trp Pro Ile Gly Arg Met Gly Arg Leu Thr Gly Val Ser
 580 585 590
 Ala Pro Thr Thr Leu Ser Gly Tyr Leu Val Ser Gly Ile Ala Leu Ala
 595 600 605

Thr Gly Leu Ser Leu Ile Gly Tyr Val Tyr Tyr Gln Lys Arg Arg Arg
 610 615 620
 Leu Phe Pro Lys Lys Glu Lys Asn His Lys Lys
 625 630 635

<210>129

<211>276

<212>PRT

<213>Chlamydia pneumoniae

<400>129

Gln Leu Gln Asn Arg Tyr Pro Ile Met Pro Asn Asp Ser Ser Thr Tyr
 1 5 10 15
 Phe Glu Arg Ile Leu Gln Lys Tyr Leu Met Lys Lys Gln Gly Lys Thr
 20 25 30
 Leu Phe Leu Phe Leu Phe Leu Ser Phe Leu Phe Ser Thr Ala Phe Ser
 35 40 45
 Gly Leu Phe Ala Ser Gln Thr Ser Ser Leu Arg Thr Ile Gln Glu Asn
 50 55 60
 Ile Phe Leu Ala Lys Thr Gly Asp Tyr Thr Val Leu Ser Arg Gly Ser
 65 70 75 80
 Gln Arg Thr Phe Val Leu Val Lys Ser Thr Thr Pro Lys Thr Val Trp
 85 90 95
 Ile Glu Ile Ile His Phe Pro Cys Ile Ala His Lys Glu Arg Pro Ser
 100 105 110
 Leu Glu Gln Ala Ser Trp Lys Thr Val Ile His Gln Leu Glu Ser Pro
 115 120 125
 Ser Gln Val Phe Val Val Ser Leu Ser Ser Glu Gly Ser Gln Phe Phe
 130 135 140
 Ser Leu Asn Thr Arg Thr Lys Ser Leu Glu Pro Val Gly Lys Ser Thr
 145 150 155 160
 Thr Val Pro Ala Phe Leu Gln Ile Phe Asp Leu Pro Leu Ser Pro Ala
 165 170 175
 Pro Ala Asn Val Ile Lys Thr Lys Gly Lys Glu Asn Lys Pro Trp Ser
 180 185 190
 Pro Lys Val Ser Phe Glu Gly Ala Pro Leu Thr Ser Ile Ser Val Asn
 195 200 205
 Ala Trp Gln Gly Leu Trp Pro Lys Asp Arg Gly Pro Leu Ser Glu Thr
 210 215 220
 Gly Ile Leu Met Tyr Phe Thr Gln Pro Asp Ile Ser Val Phe Pro Leu
 225 230 235 240
 Trp Val Ser Ile Glu Thr Pro Lys Gly Thr Ser Ile Val Arg Ala Val
 245 250 255
 Asp Ile Gly His Gly Ala Thr Ser Pro Tyr Val Tyr Ser Leu Pro Asp
 260 265 270
 Ser Lys Thr Gln
 275

<210>130

<211>109

<212>PRT

<213>Chlamydia pneumoniae

<400>130

Met Lys Lys Asn Thr His Pro Glu Tyr Arg Gln Val Leu Phe Val Asp
 1 5 10 15
 Xaa Ser Thr Gly Tyr Lys Phe Val Cys Gly Xaa Thr Tyr Gln Ser Glu
 20 25 30
 Lys Thr Glu Val Phe Glu Gly Lys Glu Tyr Pro Val Cys Tyr Val Ser
 35 40 45
 Val Ser Ser Ser Ser His Pro Phe Phe Thr Gly Ser Lys Lys Phe Val
 50 55 60
 Asp Ala Glu Gly Arg Val Asp Lys Phe Leu Lys Arg Tyr Ser Asn Val
 65 70 75 80
 Arg Gln Pro Ala Gln Gln Pro Gln Pro Glu Glu Asp Ala Leu Pro Ala
 85 90 95
 Ala Lys Gly Lys Lys Lys Val Val Thr Lys Lys Lys Lys
 100 105

<210>131

<211>359

<212>PRT

<213>Chlamydia pneumoniae

<400>131

Gly Phe Met Lys Lys Lys Val Ala Glu Tyr Leu Asn Arg Leu Ala Glu
 1 5 10 15
 Val Glu Ile Lys Ile Ser Asn Pro Glu Ile Phe Ser Asn Ser Lys Glu
 20 25 30
 Tyr Ser Ala Leu Ser Lys Glu His Ser Tyr Leu Leu Glu Leu Lys Asn
 35 40 45
 Ala Tyr Asp Lys Ile Leu Asn Leu Glu Lys Val Leu Ala Asp Asp Lys
 50 55 60
 Gln Ala Leu Ala Ile Glu Lys Asp Pro Glu Met Val Val Met Leu Glu
 65 70 75 80
 Glu Gly Ile Asn Glu Asn Lys Val Glu Leu Glu Lys Leu Asn Lys Ile
 85 90 95
 Leu Glu Ser Leu Leu Val Pro Pro Asp Pro Asp Asp Asp Leu Asn Val
 100 105 110
 Ile Met Glu Leu Arg Ala Gly Thr Gly Gly Glu Glu Ala Ala Leu Phe
 115 120 125
 Val Gly Asp Cys Val Arg Met Tyr His Leu Tyr Ala Ser Ser Lys Gly
 130 135 140
 Trp Lys Tyr Glu Val Leu Ser Ala Ser Glu Ser Asp Leu Lys Gly Tyr
 145 150 155 160
 Lys Glu Tyr Val Met Gly Ile Ser Gly Thr Gly Val Lys Arg Leu Leu
 165 170 175
 Gln Tyr Glu Ala Gly Thr His Arg Val Gln Arg Val Pro Glu Thr Glu
 180 185 190
 Thr Gln Gly Arg Val His Thr Ser Ala Ile Thr Ile Ala Val Leu Pro
 195 200 205
 Glu Pro Ser Glu Glu Asp Thr Glu Leu Leu Ile Asn Glu Lys Asp Leu
 210 215 220
 Lys Ile Asp Thr Phe Arg Ala Ser Gly Ala Gly Gly Gln His Val Asn
 225 230 235 240
 Val Thr Asp Ser Ala Val Arg Ile Thr His Leu Pro Thr Gly Val Val
 245 250 255
 Val Thr Cys Gln Asp Glu Arg Ser Gln His Lys Asn Lys Asp Lys Ala
 260 265 270
 Met Arg Ile Leu Lys Ala Arg Ile Arg Asp Ala Glu Met Gln Lys Arg
 275 280 285
 His Asn Glu Ala Ser Ala Met Arg Ser Ala Gln Val Gly Ser Gly Asp
 290 295 300
 Arg Ser Glu Arg Ile Arg Thr Tyr Asn Phe Ser Gln Asn Arg Val Thr
 305 310 315 320
 Asp His Arg Ile Gly Leu Thr Leu Tyr Asn Leu Asp Lys Val Met Glu
 325 330 335
 Gly Asp Leu Asp Pro Ile Thr Thr Ala Met Val Ser His Ala Tyr His
 340 345 350
 Gln Leu Leu Glu His Gly Asn
 355

<210>132

<211>296

<212>PRT

<213>Chlamydia pneumoniae

<400>132

Met Pro Thr Thr Ser Tyr Ser Asn Met Glu Ile Lys Lys Ala Ile Gln
 1 5 10 15
 Glu Gly Thr Ala Tyr Leu Asp Tyr Tyr Gly Val Pro Leu Ser Asp Cys
 20 25 30
 Glu Ala Leu Tyr Ile Leu Met Asp Leu Leu Glu Val Ser Ser Arg Ala
 35 40 45
 Lys Leu Phe Asp Leu Val Gly Ile Ser Glu Thr Met Leu Met Glu Tyr
 50 55 60

Arg Lys Arg Leu Ala Leu Arg Gly Gln Arg Cys Pro Thr Ala Tyr Leu
 65 70 75 80
 Asn Gly Ala Val Ser Phe Leu Gly Leu Arg Leu Arg Val Asp Ser Arg
 85 90 95
 Val Leu Ile Pro Arg Thr Glu Thr Glu Leu Leu Ala Glu Tyr Ile Ile
 100 105 110
 Asn Tyr Leu Leu Ser His Ser Glu Ile Gln Thr Phe Tyr Asp Ile Cys
 115 120 125
 Cys Gly Ser Gly Cys Leu Gly Leu Ala Ile Lys Lys Ser Cys Pro His
 130 135 140
 Val Glu Val Val Leu Ser Asp Val Cys Pro Gln Ala Val Ala Val Ala
 145 150 155 160
 Asn Glu Asn Ala Lys Ser Asn Gly Leu Asp Val Lys Ile Leu Leu Gly
 165 170 175
 Asp Leu Ser Ala Pro Tyr Thr Arg Pro Ala Asp Ala Phe Val Cys Asn
 180 185 190
 Pro Pro Tyr Leu Ser Phe Asn Glu Ile Ile His Ile Asp Pro Glu Val
 195 200 205
 Arg Cys Tyr Glu Pro Trp Lys Ala Leu Val Gly Gly Ser Thr Gly Leu
 210 215 220
 Glu Phe Tyr Gln Arg Ile Ala Gln Glu Leu Pro Lys Ile Val Thr Ser
 225 230 235 240
 Thr Gly Val Gly Trp Leu Glu Ile Gly Ser Ser Gln Gly Glu Ser Ile
 245 250 255
 Lys Asn Ile Phe Ser Lys His Gly Ile Tyr Gly Arg Leu His Gln Asp
 260 265 270
 Leu Ser Gly Arg Asp Arg Ile Phe Phe Leu Glu Met Asp Gly Arg Asp
 275 280 285
 Pro Val Ser Ser Gly Ala Tyr Ser
 290 295

<210>133

<211>448

<212>PRT

<213>Chlamydia pneumoniae

<400>133

Met Ile Asn Ser Leu Ser Gln Lys Leu Ser Ser Ile Phe Ser Phe Leu
 1 5 10 15
 Val Ser Ser Arg Arg Ile Asn Glu Glu Asn Ile Ser Glu Ser Ile Arg
 20 25 30
 Glu Val Arg Leu Ala Leu Leu Asp Ala Asp Val Asn Tyr His Val Val
 35 40 45
 Lys Asp Phe Ile Ser Lys Val Lys Xaa Lys Ile Leu Gly Glu Glu Ile
 50 55 60
 Trp Lys His Val Ser Pro Gly Lys Gln Phe Ile Arg Cys Leu His Glu
 65 70 75 80
 Glu Leu Val Ala Phe Leu Ser Asp Gly Arg Glu Glu Phe Thr Ile Gln
 85 90 95
 Lys Thr Pro Ser Ile Ile Leu Leu Cys Gly Leu Gln Gly Ala Gly Lys
 100 105 110
 Thr Thr Thr Ala Ala Lys Leu Ala Asp Tyr Val Ile Lys Asn Lys Lys
 115 120 125
 Ala Lys Lys Val Leu Val Val Pro Cys Asp Leu Lys Arg Phe Ala Ala
 130 135 140
 Val Asp Gln Leu Lys Ile Leu Val Ala Gln Thr Lys Ala Glu Phe Tyr
 145 150 155 160
 Gln Ser Gln Glu Asn Lys Pro Ile Asp Val Val Val Lys Ala Leu Ala
 165 170 175
 Tyr Ala Lys Glu Asn Gly His Asp Phe Val Ile Leu Asp Thr Ala Gly
 180 185 190
 Arg Leu Asn Ile Asp Asn Glu Leu Met Glu Glu Leu Thr Ala Ile Gln
 195 200 205
 Lys Val Ser Gln Ala Asn Glu Arg Leu Phe Val Met Asn Val Ala Met
 210 215 220
 Gly Gln Asp Val Leu Ala Thr Val Gln Ala Phe Asp Gln Ser Leu Asp

225	230	235	240
Leu Thr Gly Val	Ile Leu Ser Met Thr	Asp Gly Asp Ala Arg	Ala Gly
	245	250	255
Ala Val Phe Ser	Ile Lys His Val	Leu Gly Lys Pro	Ile Lys Phe Glu
	260	265	270
Gly Cys Gly Glu Arg	Ile Gln Asp	Leu Arg Ser Phe	Asp Pro Gln Ser
	275	280	285
Met Ala Glu Arg	Ile Leu Gly Met	Gly Asp Thr	Ile Asn Phe Val Lys
	290	295	300
Glu Met Arg Glu Tyr	Ile Ser Glu Glu	Glu Asp Ala Glu	Leu Gly Lys
305	310	315	320
Lys Leu Val Thr	Ala Ala Phe Thr	Tyr Glu Asp Tyr	Tyr Lys Gln Met
	325	330	335
Lys Ala Phe Arg	Arg Met Gly Pro	Leu Arg Lys	Leu Leu Gly Met Met
	340	345	350
Pro Gly Phe Asn	Asn Ala Lys Pro	Ser Gln Lys	Glu Ile Glu Asp Ser
	355	360	365
Glu Gln Gln Met	Lys Arg Thr	Glu Ala Ile Ile	Leu Ser Met Thr Pro
	370	375	380
Glu Glu Arg Lys	Glu Leu Val Glu	Leu Asp Met Ser	Arg Met Lys Arg
385	390	395	400
Ile Ala Ser Gly	Cys Gly Leu Thr	Leu Gly Asp Val	Asn Gln Phe Arg
	405	410	415
Lys Gln Met Ser	Gln Ser Lys Lys	Phe Phe Lys Gly	Met Ser Lys Gly
	420	425	430
Lys Met Glu Gln	Val Arg Lys Lys	Met Ser Gly Gly	Asn Gln Trp Arg
	435	440	445

<210>134

<211>208

<212>PRT

<213>Chlamydia pneumoniae

<400>134

Met Lys Ile Asp	Ile Leu Ser Leu	Ser Pro Gly Tyr	Phe Asp Gly Pro
1	5	10	15
Leu Gln Thr Ser	Ile Leu Gly Arg	Ala Ile Lys Gln	Arg Leu Leu Asp
	20	25	30
Val Gln Leu Thr	Asn Leu Arg Asp	Phe Gly Leu Gly	Lys Trp Lys Gln
	35	40	45
Val Asp Asp Thr	Pro Phe Ser Gly	Gly Gly Met Leu	Leu Met Ala Glu
	50	55	60
Pro Val Thr Ser	Ala Ile Arg Ser	Val Arg Lys Glu	Asn Ser Lys Val
65	70	75	80
Ile Tyr Leu Ser	Pro Gln Gly Ala	Leu Leu Thr Ala	Glu Lys Ser Arg
	85	90	95
Glu Leu Ala Ala	Ala Ser His Leu	Ile Leu Leu Cys	Gly His Tyr Glu
	100	105	110
Gly Ile Asp Glu	Arg Ala Ile Glu	Ser Glu Val Asp	Glu Glu Ile Ser
	115	120	125
Ile Gly Asp Tyr	Val Leu Thr Asn	Gly Gly Ile Ala	Ala Leu Val Leu
	130	135	140
Ile Asp Ala Val	Ser Arg Phe Ile	Pro Gly Val Leu	Gly Asn Gln Glu
145	150	155	160
Ser Ala Glu Arg	Asp Ser Leu Glu	Asn Gly Leu Leu	Glu Gly Pro Gln
	165	170	175
Tyr Thr Arg Pro	Arg Glu Phe Glu	Gly Lys Glu Val	Pro Glu Val Leu
	180	185	190
Leu Gln Gly Asp	His Lys Ala Ile	Ser Ser Val Glu	Ile Gly Ala Lys
	195	200	205

<210>135

<211>189

<212>PRT

<213>Chlamydia pneumoniae

<400>135

Lys Asp Leu Ser Ile His Ala Leu Glu Ser Leu Lys Gly Lys Lys Phe

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      1           5           10           15
Gln Lys Tyr Cys Lys Gly Ile Thr Lys Pro Phe His Gln Trp Arg
      20           25           30
Leu Glu Gln Ser Glu Arg Arg Thr Tyr Glu Arg Arg Pro Asp Leu Tyr
      35           40           45
Leu Asn Tyr Leu Tyr Lys Arg Ser Ile Asp His Lys Phe Asp Glu Glu
      50           55           60
Thr Thr Thr Asn Arg Asp His Phe Lys Cys Asp Lys Ile Ser Val Val
      65           70           75           80
Leu Glu Val Asn Lys Leu Lys Arg Ala Lys Asn Phe Tyr Cys Lys Val
      85           90           95
Phe Gly Leu Asp Ala Met Ser Cys Glu Asn Lys Phe Cys Leu Pro His
      100          105          110
Glu Gly Lys Thr Ile Phe Trp Leu Arg Glu Val Gln Ala Glu Lys Lys
      115          120          125
Asn Ile Val Thr Leu Ser Leu Ser Leu Asp Cys Ala Cys Glu Glu Asp
      130          135          140
Phe Cys Tyr Leu Leu Arg Arg Trp Glu Leu Phe Gly Gly Lys Leu Leu
      145          150          155          160
Glu Lys Gln Ala Asp Glu His Ala Val Trp Ala Leu Ala Gln Asp Leu
      165          170          175
Asp Gly His Ala Trp Ile Phe Ser Trp His Arg Met Lys
      180          185

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<210>136

<211>121

<212>PRT

<213>Chlamydia pneumoniae

<400>136

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Met Val Asn Leu Leu Lys Glu Leu Glu Gln Glu Gln Cys Arg Asn Asp
      1           5           10           15
Leu Pro Glu Phe His Val Gly Asp Thr Ile Arg Leu Ala Thr Lys Ile
      20           25           30
Ser Glu Gly Gly Lys Glu Arg Val Gln Val Phe Gln Gly Thr Val Met
      35           40           45
Ala Arg Arg Gly Gly Gly Ser Gly Glu Thr Val Ser Leu His Arg Val
      50           55           60
Ala Tyr Gly Glu Gly Met Glu Lys Ser Phe Leu Leu Asn Ser Pro Arg
      65           70           75           80
Ile Val Ser Ile Glu Ile Val Lys Arg Gly Lys Val Ala Arg Ala Arg
      85           90           95
Leu Tyr Tyr Leu Arg Gly Lys Thr Gly Lys Ala Ala Lys Val Lys Glu
      100          105          110
Phe Val Gly Pro Arg Ser Ser Lys Lys
      115          120

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<210>137

<211>214

<212>PRT

<213>Chlamydia pneumoniae

<400>137

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Met Asn Thr Ser Ile Ser Glu Ile Gln Arg Phe Leu Ser Met Ile Ala
      1           5           10           15
Phe Glu Lys Glu Leu Val Ser Glu Asp Phe Ser Val Val Ala Gly Ile
      20           25           30
Asp Glu Ala Gly Arg Gly Pro Leu Ala Gly Pro Val Val Ala Ser Ala
      35           40           45
Cys Ile Leu Pro Lys Gly Lys Val Phe Pro Gly Val Asn Asp Ser Lys
      50           55           60
Lys Leu Ser Pro Lys Gln Arg Ala Gln Val Arg Asp Ala Leu Met Gln
      65           70           75           80
Asp Pro Glu Val Cys Phe Gly Ile Gly Val Ile Ser Val Glu Arg Ile
      85           90           95
Asp Gln Val Asn Ile Leu Glu Ala Thr Lys Glu Ala Met Leu Gln Ala
      100          105          110
Ile Ser Ser Leu Pro Ile Ser Pro Asp Ile Leu Leu Val Asp Gly Leu

```

115 120 125
 Tyr Leu Pro His Asp Ile Pro Cys Lys Lys Ile Ile Gln Gly Asp Ala
 130 135 140
 Lys Ser Ala Ser Ile Ala Ala Ser Ile Leu Ala Lys Glu His Arg
 145 150 155 160
 Asp Asp Leu Met Leu Gln Leu His Arg Leu Tyr Pro Glu Tyr Gly Phe
 165 170 175
 Asp Arg His Lys Gly Tyr Gly Thr Ser Leu His Val Glu Ala Ile Arg
 180 185 190
 Arg Tyr Gly Pro Ser Pro Cys His Arg Lys Ser Phe Ser Pro Ile Lys
 195 200 205
 Gln Met Cys Ala Ile Val
 210
 <210>138
 <211>209
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>138
 Val Cys Tyr Cys Met Asn Lys Ile Leu Val Asp Ser Pro Phe Ser Pro
 1 5 10 15
 Asp His Gln Lys Cys Cys Pro Lys Leu Phe Thr Ile Ser Ala Pro Ala
 20 25 30
 Gly Val Gly Lys Thr Thr Leu Val Arg Met Leu Glu Gln Glu Phe Ser
 35 40 45
 Ser Ala Phe Ala Glu Thr Ile Ser Val Thr Thr Arg Lys Pro Arg Glu
 50 55 60
 Gly Glu Val Pro Gly Lys Asp Tyr His Phe Val Ser His Glu Glu Phe
 65 70 75 80
 Gln Arg Leu Leu Asp Arg Gln Ala Leu Leu Glu Trp Val Phe Leu Phe
 85 90 95
 Gly Glu Cys Tyr Gly Thr Ser Met Leu Glu Ile Glu Arg Ile Trp Ser
 100 105 110
 Leu Gly Lys His Ala Val Ala Val Ile Asp Ile Gln Gly Ala Leu Phe
 115 120 125
 Ile Arg Ser Arg Met Pro Ser Val Ser Ile Phe Ile Ala Pro Pro Ser
 130 135 140
 Gln Glu Glu Leu Glu Arg Arg Leu Ala Ser Arg Gly Ser Glu Glu Gly
 145 150 155 160
 Ser Gln Arg Lys Glu Arg Leu Glu His Ser Leu Ile Glu Leu Ala Ala
 165 170 175
 Ala Asn Gln Phe Asp Tyr Val Ile Ile Asn Asp Asp Leu Asn Gln Ala
 180 185 190
 Tyr Arg Val Leu Lys Ser Ile Phe Ile Ala Glu Glu His Arg Asn Ile
 195 200 205
 Leu

<210>139

<211>100

<212>PRT

<213>Chlamydia pneumoniae

<400>139

Glu His Ile Met Ile Lys Lys Asp Arg Phe Thr Asn Glu Lys Leu Asn
 1 5 10 15
 Lys Leu Phe Asp Ser Pro Phe Ser Leu Val Asn Tyr Ala Ile Lys Gln
 20 25 30
 Ala Lys Ile Lys Ile Ala Lys Gly Asp Val Arg Ser Ser Asn Val Ala
 35 40 45
 Ile Glu Thr Leu Val Leu Leu Asp Arg Glu Gly Ile Gln Pro Glu Phe
 50 55 60
 Thr Glu Glu Ile Val Val Thr Ala Ser Pro Thr Val Glu Arg Lys Arg
 65 70 75 80
 Ser Glu His Thr Asn Ser Arg Lys Lys Asp Pro Ser Ala Tyr Thr Trp
 85 90 95
 Ser Asp Val Lys

100

<210>140

<211>554

<212>PRT

<213>Chlamydia pneumoniae

<400>140

Cys	Lys	Val	Met	Pro	Gln	Lys	Val	Leu	Ile	Thr	Ser	Ala	Leu	Pro	Tyr
1				5				10						15	
Ala	Asn	Gly	Pro	Leu	His	Phe	Gly	His	Ile	Ala	Gly	Val	Tyr	Leu	Pro
			20					25					30		
Ala	Asp	Val	Tyr	Ala	Arg	Phe	Arg	Arg	Leu	Leu	Gly	Asp	Asp	Val	Leu
		35					40					45			
Tyr	Ile	Cys	Gly	Ser	Asp	Glu	Phe	Gly	Ile	Ala	Ile	Thr	Leu	Asn	Ala
	50					55					60				
Asp	Arg	Glu	Gly	Leu	Gly	Tyr	Gln	Glu	Tyr	Val	Asp	Met	Tyr	His	Lys
	65				70				75					80	
Leu	His	Lys	Asp	Thr	Phe	Glu	Lys	Leu	Gly	Phe	Ala	Leu	Asp	Phe	Phe
				85				90						95	
Ser	Arg	Thr	Thr	Asn	Pro	Phe	His	Ala	Glu	Leu	Val	Gln	Asp	Phe	Tyr
			100					105					110		
Ser	Gln	Leu	Lys	Ala	Ser	Gly	Leu	Ile	Glu	Asn	Arg	Ile	Ser	Glu	Gln
	115						120					125			
Leu	Tyr	Ser	Glu	Gln	Glu	Gln	Arg	Phe	Leu	Ala	Asp	Arg	Tyr	Val	Glu
	130					135					140				
Gly	Thr	Cys	Pro	Arg	Cys	Gly	Phe	Asp	His	Ala	Arg	Gly	Asp	Glu	Cys
	145				150					155				160	
Gln	Ser	Cys	Gly	Ala	Asp	Tyr	Glu	Ala	Ile	Asp	Leu	Ile	Asp	Pro	Lys
				165				170						175	
Ser	Lys	Ile	Ser	Gly	Val	Glu	Leu	Val	Lys	Lys	Glu	Thr	Glu	His	Ser
			180					185					190		
Tyr	Phe	Leu	Leu	Asp	Arg	Met	Lys	Asp	Ala	Leu	Leu	Ser	Phe	Ile	Gln
		195					200					205			
Gly	Cys	Tyr	Leu	Pro	Asp	His	Val	Arg	Lys	Phe	Val	Val	Asp	Tyr	Ile
	210					215					220				
Glu	His	Val	Arg	Ser	Arg	Ala	Ile	Thr	Arg	Asp	Leu	Ser	Trp	Gly	Ile
	225				230					235				240	
Pro	Val	Pro	Asp	Phe	Pro	Gly	Lys	Val	Phe	Tyr	Val	Trp	Phe	Asp	Ala
				245					250					255	
Pro	Ile	Gly	Tyr	Ile	Ser	Gly	Thr	Met	Glu	Trp	Ala	Ala	Ser	Gln	Gly
			260					265					270		
Asn	Pro	Asp	Glu	Trp	Lys	Arg	Phe	Trp	Leu	Glu	Asp	Gly	Val	Glu	Tyr
		275					280					285			
Val	Gln	Phe	Ile	Gly	Lys	Asp	Asn	Leu	Pro	Phe	His	Ser	Val	Val	Phe
	290					295					300				
Pro	Ala	Met	Glu	Leu	Gly	Gln	Lys	Leu	Asp	Tyr	Lys	Lys	Val	Asp	Ala
	305				310					315				320	
Leu	Val	Val	Ser	Glu	Phe	Tyr	Leu	Leu	Glu	Gly	Arg	Gln	Phe	Ser	Lys
				325				330					335		
Ser	Glu	Gly	Asn	Tyr	Val	Asp	Met	Asp	Lys	Phe	Leu	Ser	Ser	Tyr	Ser
			340					345					350		
Leu	Asp	Lys	Leu	Arg	Tyr	Val	Leu	Ala	Ala	Thr	Ala	Pro	Glu	Thr	Ser
		355					360					365			
Asp	Ser	Glu	Phe	Thr	Phe	Leu	Asp	Phe	Lys	Thr	Arg	Cys	Asn	Ser	Glu
	370					375					380				
Leu	Val	Gly	Lys	Phe	Gly	Asn	Phe	Ile	Asn	Arg	Val	Leu	Ala	Phe	Ala
	385				390					395				400	
Glu	Lys	Asn	His	Tyr	Asp	Lys	Leu	Ser	Tyr	His	Ser	Val	Val	Leu	Glu
				405					410					415	
Asp	Ser	Asp	Arg	Ala	Phe	Leu	Glu	Glu	Val	Arg	Gln	Leu	Val	Arg	Asp
			420					425					430		
Ala	Glu	Lys	Cys	Tyr	Arg	Glu	Tyr	Ser	Leu	Arg	Lys	Ala	Thr	Ser	Val
		435					440					445			
Ile	Met	Ser	Leu	Ala	Ala	Leu	Gly	Asn	Val	Tyr	Phe	Asn	Gln	Gln	Ala
	450					455						460			

Pro Trp Lys Leu Leu Lys Glu Gly Thr Arg Glu Arg Val Glu Ala Ile
 465 470 475 480
 Leu Phe Cys Ala Cys Tyr Cys Gln Lys Leu Leu Ala Leu Ile Ser Tyr
 485 490 495
 Pro Ile Ile Pro Glu Ser Ala Val Ala Ile Trp Glu Met Ile Ser Pro
 500 505 510
 Lys Ser Leu Glu Asn Cys Asn Leu Asp Thr Met Tyr Ala Arg Asp Leu
 515 520 525
 Trp Lys Glu Glu Ile Leu Asp Val Ile Asn Glu Glu Phe His Leu Lys
 530 535 540
 Ser Pro Arg Leu Leu Phe Thr Thr Val Glu
 545 550
 <210>141
 <211>408
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>141
 Ser Gln Ala His Phe Ile Phe Phe Glu Glu Asn Pro Phe Tyr Arg Arg
 1 5 10 15
 Arg Lys Ser Asn Cys Leu Gly Arg Gly Lys Leu Ser Ile Asp Leu Ala
 20 25 30
 Glu Gln Gln Arg Glu Ala Ile Lys Ala Cys Phe Ser Glu Lys Leu Leu
 35 40 45
 Ile Ile Thr Gly Gly Pro Gly Thr Gly Lys Ser Thr Ile Thr Gln Ala
 50 55 60
 Ile Leu Lys Ile Phe Glu Gln Val Thr His Lys Ile Ile Leu Ala Ala
 65 70 75 80
 Pro Thr Gly Lys Ala Ala Lys Arg Met Thr Glu Ile Thr Gln Lys His
 85 90 95
 Ser Val Thr Ile His Ala Leu Leu Gln Tyr Asp Phe Lys Thr Lys Ser
 100 105 110
 Phe Arg Lys Asn His Asp Asn Pro Ile Asp Cys Asp Leu Ile Ile Val
 115 120 125
 Asp Glu Ser Gly Met Met Asp Thr His Leu Leu His His Phe Leu Lys
 130 135 140
 Ala Leu Pro Asp Tyr Thr Thr Leu Val Phe Ile Gly Asp Ile His Gln
 145 150 155 160
 Leu Pro Ser Val Gly Pro Gly Asn Ile Leu Lys Asp Leu Ile Thr Ser
 165 170 175
 Asn Lys Met Thr Val Ile Arg Leu Asn Lys Ile Phe Arg Gln Val His
 180 185 190
 Asp Ser Gly Ile Val Thr Asn Ala His Arg Val Asn Glu Gly Glu Leu
 195 200 205
 Pro Ile Leu Tyr Ser Glu Thr Gly Arg Arg Asp Phe Leu Phe Phe Gln
 210 215 220
 Lys Asp Asp Gln Glu Glu Ala Leu Asn His Ile Ile His Leu Val Thr
 225 230 235 240
 Lys Phe Val Pro Gln Lys Tyr His Ile Tyr Pro Gln Asp Ile Gln Val
 245 250 255
 Leu Ala Pro Met Lys Lys Gly Thr Leu Gly Ile Tyr Asn Leu Asn Lys
 260 265 270
 Ala Leu Lys His Ala Leu Asn Pro Lys Lys Ala Asn Leu His Gly Arg
 275 280 285
 Phe Gln Ser Tyr Ala Val Gly Asp Lys Val Met Gln Ile Arg Asn Asn
 290 295 300
 Tyr Asn Lys Glu Val Phe Asn Gly Asp Ile Gly Tyr Val Ser Thr Ile
 305 310 315 320
 Asn Phe Glu Asp Lys Ala Val Val Val Arg Met Glu Gly Lys His Val
 325 330 335
 Gly Tyr Ser Phe Ser Glu Leu Asp Asp Leu Val Leu Ala Tyr Ala Thr
 340 345 350
 Ser Val His Lys Tyr Gln Gly Ser Glu Ser Pro Cys Ile Ile Ile Pro
 355 360 365
 Ile His Thr Ser His Phe Met Met Leu Tyr Arg Asn Leu Leu Tyr Thr

370 375 380
 Ala Ile Thr Arg Gly Lys Lys Leu Val Ile Leu Val Gly Thr Lys Lys
 385 390 395 400
 Ala Ile Cys Tyr Cys Asn Lys Lys
 405

<210>142

<211>313

<212>PRT

<213>Chlamydia pneumoniae

<400>142

Asn Ser Met Glu Lys Ile Cys Gly Tyr Leu Glu Gln Ile Leu Val Glu
 1 5 10 15
 Asn Lys Asp Ser Gly Asp Ile Thr Ala Tyr Ile Lys Ile Pro Asn Lys
 20 25 30
 Thr Thr Pro Ile Leu Ile Lys Gly Lys Leu Pro Gln Pro Leu Glu Leu
 35 40 45
 Gly Ser Pro Ile Gln Ile Tyr Gly Val Trp Ser His Ser Pro Ser Asn
 50 55 60
 Thr Lys Tyr Phe Gln Ile His Ser Tyr Asp Ser Pro Leu Leu Tyr Glu
 65 70 75 80
 Tyr Arg Gly Val Phe His Tyr Leu Thr Ser Lys Leu Ile Lys Gly Ile
 85 90 95
 Gly Pro Lys Ile Ala Glu Lys Ile Ile Glu Lys Phe Gln Glu Lys Thr
 100 105 110
 Cys Tyr Val Leu Asp Ile Thr Pro Glu Arg Leu Ser Glu Val Ser Gly
 115 120 125
 Ile Ser Glu Thr Arg Cys Val Ser Ile Cys Lys Gln Leu Cys Glu Gln
 130 135 140
 Lys Met Leu Arg Lys Thr Leu Leu Phe Leu Gln Glu Tyr Asn Ile Pro
 145 150 155 160
 Ile His Tyr Gly Val Arg Ile Phe Lys Lys Tyr Gln Glu Lys Ser Ile
 165 170 175
 Glu Lys Ile Cys Glu Asp Pro Phe Leu Ala Arg Glu Met Glu Gly
 180 185 190
 Ile Gly Phe Lys Thr Ala Asp Phe Ile Ala Met Lys Leu Gly Val Pro
 195 200 205
 Arg Asn Ser Glu Ser Arg Leu Cys Ala Gly Ile Gln His Ser Leu Glu
 210 215 220
 Glu Leu Gln Glu Glu Gly His Thr Cys Tyr Pro Ile Glu Leu Leu Ile
 225 230 235 240
 Asp Val Val Ala Lys Leu Leu Asn Gln Asp Val Phe Asp Thr Pro Ile
 245 250 255
 Thr Leu Glu Glu Ile Asp Thr Gln Ile Leu Asn Met Gln Lys Arg Asn
 260 265 270
 Phe Tyr Ile Phe Lys Thr Phe Leu Gly His Ser Met Ser Gly His Val
 275 280 285
 Ile Ser Ile Ser Gln Arg Lys Leu Leu Phe Leu Ile Ser Ser Ala Phe
 290 295 300
 Tyr Phe Leu Arg Gly Glu Ser Val Leu
 305 310

<210>143

<211>498

<212>PRT

<213>Chlamydia pneumoniae

<400>143

Ile Arg Ser Lys Gln Arg Thr Val Ala Ile Thr Leu Leu Val Leu Gly
 1 5 10 15
 Ile Leu Leu Ile Ala Ser Gly Ile Ile Phe Leu Ala Val Ala Ile Pro
 20 25 30
 Gly Leu Ser Ser Ala Val Ala Leu Gly Leu Gly Cys Gly Met Thr Ala
 35 40 45
 Leu Gly Thr Val Leu Leu Ile Thr Gly Leu Val Leu Ile Arg Ser
 50 55 60
 Glu Lys Leu Ala Leu Glu Gln Val Glu Ile Lys Gln Ala Arg Thr Arg

65 Val Asn Asn Glu Leu Asp Gln Leu Ser Gln Tyr Val Phe Tyr Thr Glu
 70 85 90 95
 Asn Val Leu Asp Asn Leu Lys Arg Trp Ser Tyr Arg Asp Leu Gly Phe
 100 105 110
 Val Arg Gln Ala Gln Glu Glu Val Thr Asn Leu Glu Gln Asp Ile Glu
 115 120 125
 Glu Ile Phe Leu Thr Leu Arg Asp Ile Arg Asn Ala Leu Asp Asn Glu
 130 135 140
 Glu Phe Phe Met Thr His Ala Lys Gln Cys Leu Ala Gln Val Gly Glu
 145 150 155 160
 Ser Leu Phe Gln Asp Ala Ser Ile Asp Glu Phe Ile Asn Leu Ala His
 165 170 175
 Leu Ser Glu Ile Arg Gln His Leu Asp Ile Asn Asp Pro Arg Trp Ser
 180 185 190
 Met Ile Thr Lys Lys Val Lys Gly Thr Val Val Arg Phe Ile Tyr Val
 195 200 205
 Ser Thr Met Tyr Lys Gln Ile Lys Ser Asn Phe Glu Lys Ser Asp Phe
 210 215 220
 Gly Gln Leu Arg Lys Met Leu Leu Asn Asn Tyr Lys Thr Ile Glu Glu
 225 230 235 240
 Val Leu Tyr Gln Ser Phe Gln Arg Gly Tyr Asn Arg Ala Ala Leu Leu
 245 250 255
 Ser Glu Lys Thr Arg Ile Ile His Thr Ser Ser Leu Leu His Trp Glu
 260 265 270
 Lys Asp Glu Asp Lys His Leu Asn Ile Lys Asn Glu Cys Ala Ser Arg
 275 280 285
 Leu Glu Asn Phe Lys Lys Phe Arg Thr Leu Phe Leu Gly Leu Ser Glu
 290 295 300
 Glu Asp Val Ile Asp Phe Thr Gly Ala Ser Gly Trp Asp Cys Ser Lys
 305 310 315 320
 Leu Pro Arg Lys Glu Val Pro Leu Asp Gly Gly Lys Lys Lys Leu Arg
 325 330 335
 Phe Lys Arg Thr Phe Ala Asp Glu Gln Val Gly Asp Trp Asp Arg Thr
 340 345 350
 Thr Ser Leu Glu His Met Thr Pro Gln Glu Glu Asp Pro Leu Asp Arg
 355 360 365
 Leu Met Asp Gln Val Glu Gln Glu Ala Thr Ser Val Leu Lys Asp Gln
 370 375 380
 Asp Arg Tyr Trp Lys Glu Ile Glu Thr Ser Glu Ala Lys Phe Arg Ser
 385 390 395 400
 Leu Pro Arg Glu Asp Asp Phe Glu Lys Gln Ser Gln Ile Asp Ser Tyr
 405 410 415
 Ile Arg Asp Leu Asp Asp His Leu Ser Val Trp Ala Asn Gln Leu Ser
 420 425 430
 Ala Ala Glu Asp Ala Leu Ile Glu Val Thr Asp Val Gln Glu His Gly
 435 440 445
 Asn Arg Glu Met Leu Lys Asn Ile Gln Gln Gly Leu Glu Leu Ile Glu
 450 455 460
 Asp Ala Val Lys Ala Thr Leu Pro Arg Val Asp Phe Ile Gln Glu Leu
 465 470 475 480
 Leu Glu Lys Glu Glu Leu Pro Leu Val Ala Ala Arg Met Ser Leu Glu
 485 490 495
 Asn Ser

<210>144

<211>538

<212>PRT

<213>Chlamydia pneumoniae

<400>144

Pro Phe Phe Ser Lys Pro Pro Glu Glu Ile Ser Gln Leu Glu Ser Tyr
 1 5 10 15

Ile Arg Ser Ala Ala Asn Asp Leu Asn Thr Ile Lys Thr Trp Pro His
 20 25 30

Lys Asp Gln Arg Leu Val Glu Thr Val Ser Arg Lys Leu Glu Arg Leu
 35 40 45
 Ala Ala Ala Gln Asn Tyr Met Ile Ser Glu Leu Cys Glu Ile Ser Glu
 50 55 60
 Ile Leu Glu Glu Glu Glu His His Leu Ile Leu Ala Gln Glu Ser Leu
 65 70 75 80
 Glu Trp Ile Gly Lys Ser Leu Phe Ser Thr Phe Leu Asp Met Glu Ser
 85 90 95
 Phe Leu Asn Leu Ser His Leu Ser Glu Val Arg Pro Tyr Leu Ala Val
 100 105 110
 Asn Asp Pro Arg Leu Leu Glu Ile Thr Glu Glu Ser Trp Glu Val Val
 115 120 125
 Ser His Phe Ile Asn Val Thr Ser Ala Phe Lys Lys Ala Gln Ile Leu
 130 135 140
 Phe Lys Asn Asn Glu His Ser Arg Met Lys Lys Lys Leu Glu Ser Val
 145 150 155 160
 Gln Glu Leu Leu Glu Thr Phe Ile Tyr Lys Ser Leu Lys Arg Ser Tyr
 165 170 175
 Arg Glu Leu Gly Cys Leu Ser Glu Lys Met Arg Ile Ile His Asp Asn
 180 185 190
 Pro Leu Phe Pro Trp Val Gln Asp Gln Gln Lys Tyr Ala His Ala Lys
 195 200 205
 Asn Glu Phe Gly Glu Ile Ala Arg Cys Leu Glu Glu Phe Glu Lys Thr
 210 215 220
 Phe Phe Trp Leu Asp Glu Glu Cys Ala Ile Ser Tyr Met Asp Cys Trp
 225 230 235 240
 Asp Phe Leu Asn Glu Ser Ile Gln Asn Lys Lys Ser Arg Val Asp Arg
 245 250 255
 Asp Tyr Ile Ser Thr Lys Lys Ile Ala Leu Lys Asp Arg Ala Arg Thr
 260 265 270
 Tyr Ala Lys Val Leu Leu Glu Glu Asn Pro Thr Thr Glu Gly Lys Ile
 275 280 285
 Asp Leu Gln Asp Ala Gln Arg Ala Phe Glu Arg Gln Ser Gln Glu Phe
 290 295 300
 Tyr Thr Leu Glu His Thr Glu Thr Lys Val Arg Leu Glu Ala Leu Gln
 305 310 315 320
 Gln Cys Phe Ser Asp Leu Arg Glu Ala Thr Asn Val Arg Gln Val Arg
 325 330 335
 Phe Thr Asn Ser Glu Asn Ala Asn Asp Leu Lys Glu Ser Phe Glu Lys
 340 345 350
 Ile Asp Lys Glu Arg Val Arg Tyr Gln Lys Glu Gln Arg Leu Tyr Trp
 355 360 365
 Glu Thr Ile Asp Arg Asn Glu Gln Glu Leu Arg Glu Glu Ile Gly Glu
 370 375 380
 Ser Leu Arg Leu Gln Asn Arg Arg Lys Gly Tyr Arg Ala Gly Tyr Asp
 385 390 395 400
 Ala Gly Arg Leu Lys Gly Leu Leu Arg Gln Trp Lys Lys Asn Leu Arg
 405 410 415
 Asp Val Glu Ala His Leu Glu Asp Ala Thr Met Asp Phe Glu His Glu
 420 425 430
 Val Ser Lys Ser Glu Leu Cys Ser Val Arg Ala Arg Leu Glu Val Leu
 435 440 445
 Glu Glu Glu Leu Met Asp Met Ser Pro Lys Val Ala Asp Ile Glu Glu
 450 455 460
 Leu Leu Ser Tyr Glu Glu Arg Cys Ile Leu Pro Ile Arg Glu Asn Leu
 465 470 475 480
 Glu Arg Ala Tyr Leu Gln Tyr Asn Lys Cys Ser Glu Ile Leu Ser Lys
 485 490 495
 Ala Lys Phe Leu Leu Ser Gly Arg Arg Ala Ile Ala Ser Phe Gly Ser
 500 505 510
 Glu Ser Lys Arg Gly Gly Cys Pro Val Lys Thr Ser Thr Gly Lys Met
 515 520 525
 Ser Arg Glu Gly Pro Lys Val Arg Asn Ile
 530 535

<210>145

<211>201

<212>PRT

<213>Chlamydia pneumoniae

<400>145

Lys Gly His Thr Ser Asn Ile Ile Ser Val Leu Lys Phe Tyr Pro Arg
1 5 10 15
Gln Ser Phe Phe Phe Pro Glu Asp Glu Gln Leu Leu Val Ser Glu Ala
20 25 30
Asn Leu Arg Glu Val Gly Ala Gln Leu Lys Gln Val Gln Gly Lys Cys
35 40 45
Gln Glu Arg Ala Gln Lys Phe Ala Ile Phe Glu Lys His Ile Gln Glu
50 55 60
Gln Lys Ser Leu Ile Lys Glu Gln Val Arg Ser Phe Asp Leu Ala Gly
65 70 75 80
Val Gly Phe Leu Lys Ser Glu Leu Leu Ser Ile Ala Cys Asn Leu Tyr
85 90 95
Ile Lys Ala Val Val Lys Glu Ser Ile Pro Val Asp Val Pro Cys Met
100 105 110
Gln Leu Tyr Tyr Ser Tyr Tyr Glu Asp Asn Glu Ala Val Val Arg Asn
115 120 125
Arg Leu Leu Asn Met Thr Glu Arg Tyr Gln Asn Phe Lys Arg Ser Leu
130 135 140
Asn Ser Ile Gln Phe Asn Gly Asp Val Leu Leu Arg Asp Pro Val Tyr
145 150 155 160
Gln Pro Glu Gly His Glu Thr Arg Leu Lys Glu Arg Glu Leu Gln Glu
165 170 175
Thr Thr Leu Ser Cys Lys Lys Leu Lys Val Ala Gln Asp Arg Leu Ser
180 185 190
Glu Leu Glu Ser Arg Leu Ser Arg Arg
195 200

<210>146

<211>259

<212>PRT

<213>Chlamydia pneumoniae

<400>146

Met Leu Arg Asn Gln Val Leu Val Tyr Cys Ser Glu Gly Val Ser Pro
1 5 10 15
Tyr Tyr Leu Arg His Thr Ile Arg Phe Leu Lys Tyr Tyr Ser Thr Gln
20 25 30
Glu Gly Ala Phe Asp Ile Leu Arg Val Xaa Gly Asn Phe Leu Ile Lys
35 40 45
Asn Pro Phe Trp Glu Glu Thr Thr Arg Leu Leu Val Phe Pro Gly Gly
50 55 60
Ala Asp Arg Pro Tyr His Arg Val Leu His Gly Leu Gly Thr Ala Arg
65 70 75 80
Ile Phe Gln Tyr Val Ser Glu Gly Gly Asn Phe Leu Gly Ile Cys Ala
85 90 95
Gly Ala Tyr Phe Gly Ser Lys Met Ile Tyr Phe Tyr Glu Pro Glu Gly
100 105 110
Ala Pro Leu Gln Gly Ala Arg Asp Leu Gly Phe Phe Pro Gly Thr Ala
115 120 125
Lys Gly Pro Ala Tyr Arg Gly Asn Phe Ser Tyr Val Ser Pro Ser Gly
130 135 140
Val Arg Val Ser Pro Gln Leu Phe Ser Asp Phe Gly Leu Gly Tyr Ala
145 150 155 160
Met Phe Asn Gly Gly Cys Phe Phe Glu Gly Ser Glu Gly Tyr Pro Gly
165 170 175
Val Asn Ile Glu Ser Arg Tyr Asp Asp Leu Pro Gly Lys Pro Ala Ser
180 185 190
Ile Val Ser Arg Ile Val Ser Lys Gly Leu Ala Val Leu Ser Gly Pro
195 200 205
His Ile Glu Tyr Leu Pro His Tyr Cys Arg Met Val Lys Glu Asn Val
210 215 220

Gln Lys Thr Arg Glu Phe Leu Gln Arg Glu Arg Thr Thr Leu Asp Arg
 225 230 235 240
 Tyr Cys Gln Asn Leu Val Gln Arg Leu Arg Gln Pro Ala Phe Ser Lys
 245 250 255
 Ala Asp Cys

<210>147

<211>396

<212>PRT

<213>Chlamydia pneumoniae

<400>147

Ser Ser Met Val Lys Cys Ser Ser Ile Ile His Glu Asn Lys Lys Pro
 1 5 10 15
 Ala Gln Leu Leu Pro Glu Ser Lys Phe Ala Ala Ile Thr Lys Leu Ser
 20 25 30
 Leu Ala Ile Leu Ser Leu Phe Leu Gly Ile Ala Ala Cys Ile Leu Ile
 35 40 45
 Ala Leu Ser Gly Leu Leu Pro Asn Thr Leu Leu Ile Ile Ala Leu Ser
 50 55 60
 Leu Ile Ser Ile Ile Val Leu Ser Thr Gly Ile Ser Leu Leu Ile Gly
 65 70 75 80
 Thr Gln Cys Ser Lys Ser Val Gln Lys Asp Glu Gln Lys Pro Lys Ser
 85 90 95
 Ile Phe Pro Lys Glu Thr Pro Ser Leu Asp Pro Trp Leu Leu Asn Pro
 100 105 110
 Leu Lys Asn Lys Ile Gln Ser Ser Glu Thr Leu Leu Leu Asp Pro Thr
 115 120 125
 Ser Ile Asn Leu Lys Asn Glu Leu Phe Phe Pro Ser Phe Glu Glu Trp
 130 135 140
 Lys Lys Ile Phe Leu Lys Asp Pro Asp Phe Leu Ile Lys Ser Ala Leu
 145 150 155 160
 Ala Asn Trp Lys Ile Leu Glu Gln Asp Glu Gln Tyr Ile Leu Ser His
 165 170 175
 Ile His Met Asp Pro Arg Ile Phe Val Thr Ser Glu Pro Leu Gln Lys
 180 185 190
 Thr Tyr Gln Lys Leu Gln Glu Lys His Val Asn Asn Leu Gly Ile Ala
 195 200 205
 Ser Gln Val Ser Leu Thr Asp Leu Gln Asn Lys Thr Gln Tyr Glu Asn
 210 215 220
 Asn Leu Ile Glu Thr Thr Thr Asn Glu Ile Thr Tyr Tyr Phe Pro Val
 225 230 235 240
 Val His Asn Pro Asp Ile Leu Arg Ser Glu Trp Asp Pro Ile Ser Asn
 245 250 255
 Gln Leu Tyr Leu Ile Phe Lys Lys Phe Phe Ile His Tyr His Asn Leu
 260 265 270
 Phe Ser Thr Ala Leu Glu Arg Asn Gln Ile Leu Leu Ile Asp Ser Leu
 275 280 285
 Asn Thr Gly Ser Ser Asn Pro Ile Ala Arg Gln Met Glu Leu Leu Ala
 290 295 300
 Phe Leu Cys Val Phe Glu Gln Leu Asp Tyr Asn Glu Asp Glu Tyr Thr
 305 310 315 320
 Ile Glu Pro Arg Asp Tyr Phe Asn Arg Phe Val Tyr Xaa Xaa Ser Xaa
 325 330 335
 Thr Ala Pro Gln Ile Gln Ser Phe Gly Leu Leu His Gly Tyr Glu Glu
 340 345 350
 Met Ser Tyr Ala Ser Asn Asn Ile Arg Asn Val Leu Thr His Ser Ile
 355 360 365
 Val Leu Cys Ser Pro Ile Leu Tyr Gln Leu Ile Thr Glu Phe Asp Thr
 370 375 380
 Thr Lys Ile His Ala Asp Asp Phe Asp Cys Leu Ile
 385 390 395

<210>148

<211>266

<212>PRT

<213>Chlamydia pneumoniae

<400>148

Phe Ser Ser Leu Lys Lys Glu Arg Phe Ser Leu Ser Leu Ala Ile Phe
1 5 10 15
Leu Ile Phe Phe Phe Thr Ser Ala Tyr Val Phe Pro Ser Ile Cys Phe
20 25 30
Leu Glu Leu Phe Met Glu Asn Ala Met Ser Ser Ser Phe Val Tyr Asn
35 40 45
Gly Pro Ser Trp Ile Leu Lys Thr Ser Val Ala Gln Glu Val Phe Lys
50 55 60
Lys His Gly Lys Gly Ile Gln Val Leu Leu Ser Thr Ser Val Met Leu
65 70 75 80
Phe Ile Gly Leu Gly Val Cys Ala Phe Ile Xaa Pro Gln Xaa Leu Ile
85 90 95
Val Phe Val Leu Thr Ile Asp Leu Leu Met Leu Ala Ile Ser Leu Val
100 105 110
Leu Phe Leu Leu Lys Val Leu Tyr Ala Pro Ser Met Val Asp Arg Leu
115 120 125
Trp Cys Ser Glu Lys Gly Tyr Ala Leu His Gln His Glu Asn Gly Pro
130 135 140
Phe Leu Asp Val Lys Arg Val Gln Gln Ile Leu Leu Arg Ser Pro Tyr
145 150 155 160
Ile Lys Val Arg Ala Leu Trp Pro Ser Gly Asp Ile Pro Glu Asp Pro
165 170 175
Ser Gln Ala Ala Val Leu Leu Leu Ser Pro Trp Thr Phe Phe Ser Ser
180 185 190
Val Asp Val Glu Ala Leu Leu Pro Ser Pro Gln Glu Lys Glu Gly Lys
195 200 205
Tyr Ile Asp Pro Val Leu Pro Lys Leu Ser Arg Ile Glu Arg Val Ser
210 215 220
Leu Leu Val Phe Leu Ser Ala Phe Thr Leu Asp Asp Leu Asn Glu Gln
225 230 235 240
Gly Val Asn Pro Leu Met Asn Asn Glu Glu Phe Leu Phe Phe Ile Asn
245 250 255
Lys Lys Ala Arg Asp Met Gly Phe Arg Ile
260 265

<210>149

<211>119

<212>PRT

<213>Chlamydia pneumoniae

<400>149

His Gly Ile Gln Asp Leu Lys His Glu Ile Met Ser Ser Leu Glu Lys
1 5 10 15
Thr Gly Val Pro Leu Asp Pro Ser Met Ser Phe Gln Val Ser Gln Ala
20 25 30
Met Phe Ser Val Tyr Arg Tyr Leu Arg Gln Arg Asp Leu Thr Thr Ser
35 40 45
Glu Leu Arg Cys Phe His Leu Leu Ser Cys Phe Lys Gly Asp Val Val
50 55 60
His Cys Leu Ala Ser Phe Glu Asn Pro Lys Asp Leu Ala Asp Ser Asp
65 70 75 80
Phe Leu Glu Ala Cys Lys Asn Val Glu Trp Gly Glu Phe Ile Ser Ala
85 90 95
Cys Glu Lys Ala Leu Leu Lys Asn Pro Gln Gly Ile Ser Ile Lys Asp
100 105 110
Leu Lys Gln Phe Leu Val Arg
115

<210>150

<211>326

<212>PRT

<213>Chlamydia pneumoniae

<400>150

Ser Met Ile Glu Phe Ala Phe Val Pro His Thr Ser Val Thr Ala Asp
1 5 10 15

Arg Ile Glu Asp Arg Met Ala Cys Arg Met Asn Lys Leu Ser Thr Leu
 20 25 30
 Ala Ile Thr Ser Leu Cys Val Leu Ile Ser Ser Val Cys Ile Met Ile
 35 40 45
 Gly Ile Leu Cys Ile Ser Gly Thr Val Gly Thr Tyr Ala Phe Val Val
 50 55 60
 Gly Ile Ile Phe Ser Val Leu Ala Leu Val Ala Cys Val Phe Phe Leu
 65 70 75 80
 Tyr Phe Phe Tyr Phe Ser Ser Glu Glu Phe Lys Cys Ala Ser Ser Gln
 85 90 95
 Glu Phe Arg Phe Leu Pro Ile Pro Ala Val Val Ser Ala Leu Arg Ser
 100 105 110
 Tyr Glu Tyr Ile Ser Gln Asp Ala Ile Asn Asp Val Ile Lys Asp Thr
 115 120 125
 Met Gln Leu Ser Thr Leu Ser Ser Leu Leu Asp Pro Glu Ala Phe Phe
 130 135 140
 Leu Glu Phe Pro Tyr Phe Asn Ser Leu Ile Val Asn His Ser Met Lys
 145 150 155 160
 Glu Ala Asp Arg Leu Ser Arg Glu Ala Phe Leu Ile Leu Leu Gly Glu
 165 170 175
 Ile Thr Trp Lys Asp Cys Glu Thr Lys Ile Leu Pro Trp Leu Lys Asp
 180 185 190
 Pro Asn Ile Thr Pro Asp Asp Phe Trp Lys Leu Leu Lys Asp His Phe
 195 200 205
 Asp Leu Lys Asp Phe Lys Lys Arg Ile Ala Thr Trp Ile Arg Lys Ala
 210 215 220
 Tyr Pro Glu Ile Arg Leu Pro Lys Lys His Cys Leu Asp Lys Ser Ile
 225 230 235 240
 Tyr Lys Gly Cys Cys Lys Phe Leu Leu Leu Ala Glu Asn Asp Val Gln
 245 250 255
 Tyr Gln Arg Leu Leu His Lys Val Cys Tyr Phe Ser Gly Glu Phe Pro
 260 265 270
 Ala Met Val Leu Gly Leu Gly Ser Glu Val Pro Met Val Leu Gly Leu
 275 280 285
 Pro Lys Val Pro Lys Asp Leu Thr Trp Glu Met Phe Met Glu Asn Met
 290 295 300
 Pro Val Leu Leu Gln Ser Lys Arg Glu Gly His Trp Lys Ile Ser Leu
 305 310 315 320
 Glu Asp Val Ala Ser Leu
 325

<210>151

<211>257

<212>PRT

<213>Chlamydia pneumoniae

<400>151

Met Phe Lys Leu Leu Lys Asn Leu Phe Leu Ile Gly Cys Cys Ile Val
 1 5 10 15
 Gly Tyr Phe Trp Met Arg Lys Glu Ser Ile Val Glu Gln Trp Leu Ser
 20 25 30
 Asn Arg Leu His Thr Gln Val Thr Val Gly Arg Val Ser Ile Arg Thr
 35 40 45
 Ser Gly Ile Lys Ile Arg His Ile Cys Ile His Asn Pro Leu Ala Ser
 50 55 60
 Glu Arg Phe Pro Tyr Ala Ala Glu Ile Glu Tyr Ala Asp Val Arg Phe
 65 70 75 80
 Ser Ser Ile Ser Met Leu Leu Thr Lys Gln Leu Glu Ile Ser Glu Leu
 85 90 95
 Ile Ile His Gly Ala Asn Phe Thr Ile Phe Pro Tyr Asp Ser His Gly
 100 105 110
 Thr Lys Thr Asn Trp Ser Leu Val Trp Lys Asn Phe His Pro Gln Lys
 115 120 125
 Glu Thr Pro Ser Asn Leu Trp Ile Asp Arg Ala Pro Val Leu Ile Arg
 130 135 140
 Arg Cys Leu Phe Leu Asn Thr Arg Leu Tyr Gly Leu Arg Ala Asn His

145 150 155 160
 Lys Asp Ile Pro His Leu Ser Val Pro Ser Leu Glu Phe His Ser His
 165 170 175
 Thr Ser Ser Ala Lys Glu Leu Pro Lys Leu Ser Glu Ala Leu Pro Ser
 180 185 190
 Leu Leu Tyr Leu Ala Leu Glu Glu Ser Leu Tyr His Leu Asn Leu Pro
 195 200 205
 Gly Asp Ile Ile Lys Pro Leu Ser Gln Gln Ala His Lys His Phe Tyr
 210 215 220
 Ser Ser Tyr Pro Gln Phe Gln Asp Arg Leu Asn Asp Ile Asn Thr Pro
 225 230 235 240
 Gly Thr Pro Thr Glu Glu Ile Ile Gly Phe Ile Arg Gly Leu Phe Phe
 245 250 255
 His

<210>152

<211>83

<212>PRT

<213>Chlamydia pneumoniae

<400>152

Ser Lys Glu Gly Arg Ala Ser Glu Ser Phe Gly Asn Ser Leu Ala Glu
 1 5 10 15
 Leu Val Trp Leu Trp Asn Ser Lys Asp Gly Thr Glu Arg Trp Gly Met
 20 25 30
 Ser Leu Trp Leu Ala Leu Ser Pro Tyr Asn Arg Val Phe Arg Asn Arg
 35 40 45
 His Leu Arg Met Ser Thr Gly Ala Arg Ser Ile His Lys Phe Glu Gly
 50 55 60
 Val Ser Phe Cys Gly Trp Lys Phe Phe His Thr Lys Asp Gln Phe Val
 65 70 75 80
 Phe Val Pro

<210>153

<211>544

<212>PRT

<213>Chlamydia pneumoniae

<400>153

Met Ala Ala Lys Asn Ile Lys Tyr Asn Glu Glu Ala Arg Xaa Lys Ile
 1 5 10 15
 His Lys Gly Val Lys Thr Leu Ala Glu Ala Val Lys Val Thr Leu Gly
 20 25 30
 Pro Lys Gly Arg His Val Val Ile Asp Lys Ser Phe Gly Ser Pro Gln
 35 40 45
 Val Thr Lys Asp Gly Val Thr Val Ala Lys Glu Ile Glu Leu Glu Asp
 50 55 60
 Lys His Glu Asn Met Gly Ala Gln Met Val Lys Glu Val Ala Ser Lys
 65 70 75 80
 Thr Ala Asp Lys Ala Gly Asp Gly Thr Thr Thr Ala Thr Val Leu Ala
 85 90 95
 Glu Ala Ile Tyr Ser Glu Gly Leu Arg Asn Val Thr Ala Gly Ala Asn
 100 105 110
 Pro Met Asp Leu Lys Arg Gly Ile Asp Lys Ala Val Lys Val Val Val
 115 120 125
 Asp Glu Leu Lys Lys Ile Ser Lys Pro Val Gln His His Lys Glu Ile
 130 135 140
 Ala Gln Val Ala Thr Ile Ser Ala Asn Asn Asp Ser Glu Ile Gly Asn
 145 150 155 160
 Leu Ile Ala Glu Ala Met Glu Lys Val Gly Lys Asn Gly Ser Ile Thr
 165 170 175
 Val Glu Glu Ala Lys Gly Phe Glu Thr Val Leu Asp Val Val Glu Gly
 180 185 190
 Met Asn Phe Asn Arg Gly Tyr Leu Ser Ser Tyr Phe Ser Thr Asn Pro
 195 200 205
 Glu Thr Gln Glu Cys Val Leu Glu Asp Ala Leu Ile Leu Ile Tyr Asp

210 215 220
 Lys Lys Ile Ser Gly Ile Lys Asp Phe Leu Pro Val Leu Gln Gln Val
 225 230 235 240
 Ala Glu Ser Gly Arg Pro Leu Leu Ile Ile Ala Glu Glu Ile Glu Gly
 245 250 255
 Glu Ala Leu Ala Thr Leu Val Val Asn Arg Leu Arg Ala Gly Phe Arg
 260 265 270
 Val Cys Ala Val Lys Ala Pro Gly Phe Gly Asp Arg Arg Lys Ala Met
 275 280 285
 Leu Glu Asp Ile Ala Ile Leu Thr Gly Gly Gln Leu Val Ser Glu Glu
 290 295 300
 Leu Gly Met Lys Leu Glu Asn Thr Thr Leu Ala Met Leu Gly Lys Ala
 305 310 315 320
 Lys Lys Val Ile Val Thr Lys Glu Asp Thr Thr Ile Val Glu Gly Leu
 325 330 335
 Gly Asn Lys Pro Asp Ile Gln Ala Arg Cys Asp Asn Ile Lys Lys Gln
 340 345 350
 Ile Glu Asp Ser Thr Ser Asp Tyr Asp Lys Glu Lys Leu Gln Glu Arg
 355 360 365
 Leu Ala Lys Leu Ser Gly Gly Val Ala Val Ile Arg Val Gly Ala Ala
 370 375 380
 Thr Glu Ile Glu Met Lys Glu Lys Lys Asp Arg Val Asp Asp Ala Gln
 385 390 395 400
 His Ala Thr Ile Ala Ala Val Glu Glu Gly Ile Leu Pro Gly Gly Gly
 405 410 415
 Thr Ala Leu Val Arg Cys Ile Pro Thr Leu Glu Ala Phe Leu Pro Met
 420 425 430
 Leu Ala Asn Glu Asp Glu Ala Ile Gly Thr Arg Ile Ile Leu Lys Ala
 435 440 445
 Leu Thr Ala Pro Leu Lys Gln Ile Ala Ser Asn Ala Gly Lys Glu Gly
 450 455 460
 Ala Ile Ile Cys Gln Gln Val Leu Ala Arg Ser Ala Asn Glu Gly Tyr
 465 470 475 480
 Asp Ala Leu Arg Asp Ala Tyr Thr Asp Met Ile Asp Ala Gly Ile Leu
 485 490 495
 Asp Pro Thr Lys Val Thr Arg Ser Ala Leu Glu Ser Ala Ala Ser Ile
 500 505 510
 Ala Gly Leu Leu Leu Thr Thr Glu Ala Leu Ile Ala Asp Ile Pro Glu
 515 520 525
 Glu Lys Ser Ser Ser Ala Pro Ala Met Pro Ser Ala Gly Met Asp Tyr
 530 535 540

<210>154

<211>102

<212>PRT

<213>Chlamydia pneumoniae

<400>154

Met Ser Asp Gln Ala Thr Thr Leu Arg Ile Lys Pro Leu Gly Asp Arg
 1 5 10 15
 Ile Leu Val Lys Arg Glu Glu Glu Glu Ala Thr Ala Arg Gly Gly Ile
 20 25 30
 Ile Leu Pro Asp Thr Ala Lys Arg Lys Gln Asp Arg Ala Glu Val Leu
 35 40 45
 Val Leu Gly Thr Gly Lys Arg Thr Asp Asp Gly Thr Leu Leu Pro Phe
 50 55 60
 Glu Val Gln Val Gly Asp Ile Ile Leu Met Asp Lys Tyr Ala Gly Gln
 65 70 75 80
 Glu Ile Thr Ile Asp Asp Glu Glu Tyr Val Ile Leu Gln Ser Ser Glu
 85 90 95
 Ile Met Ala Val Leu Lys
 100

<210>155

<211>617

<212>PRT

<213>Chlamydia pneumoniae

Lys Gly Val Pro Ser Leu Met Thr Thr Glu Leu Lys Thr Glu Ala Leu
 1 5 10 15
 Pro Thr Arg Thr Gln Val Asp Pro Lys His Cys Trp Asp Thr Thr Leu
 20 25 30
 Met Tyr Ala Asn Arg Glu Glu Trp Lys Lys Asp Phe Asp Leu Cys Ser
 35 40 45
 Ser Gly Lys Asp Arg Ser Pro Ile Trp Pro Glu Phe Ser Pro Ser His
 50 55 60
 Tyr Gln Ile Asp Asn Pro Glu Ser Leu Leu Glu Leu Ser Lys Lys
 65 70 75 80
 Phe Ser Val Glu Arg Lys Leu Asp Gln Leu Tyr Ile Tyr Ala His Leu
 85 90 95
 Ile His Asp Gln Asp Ile Thr Asn Pro Glu Gly Glu Ser Asp Tyr Gln
 100 105 110
 Ser Ile Val Tyr Leu Tyr Thr Leu Phe Ser Gln Glu Ile Ser Trp Ile
 115 120 125
 Gln Pro Ala Xaa Ile Ala Leu Ser Glu Glu Lys Val Ala Ala Leu Leu
 130 135 140
 Ser Ser Ser Val Leu Ala Pro Tyr Arg Phe Tyr Leu Glu Lys Ile Phe
 145 150 155 160
 Arg Leu Ser Pro His Thr Gly Thr Ala Asn Glu Glu Lys Ile Leu Ala
 165 170 175
 Ser Ser Phe Ala Ala Leu Asn Val Ser Asn Lys Ala Phe Ser Ser Leu
 180 185 190
 Ser Asp Ala Glu Ile Pro Phe Gly Ile Ala Lys Asp Ser Asn Gly Glu
 195 200 205
 Glu His Pro Leu Ser His Ala Leu Ala Ser Leu Tyr Met Gln Ser Pro
 210 215 220
 Asp Gln Glu Leu Arg Arg Thr Ala Tyr Leu Ala Gln Phe Gln Arg Tyr
 225 230 235 240
 Tyr Asp Tyr Arg Asn Thr Phe Ala Asn Leu Leu Asn Gly Lys Val Gln
 245 250 255
 Ala His Leu Phe Glu Ala Lys Ala Arg Asn Tyr Pro Ser Cys Leu Glu
 260 265 270
 Ala Ser Leu Phe Gln His Asn Ile Pro Thr Thr Val Tyr Ile Asn Leu
 275 280 285
 Ile Asn Glu Thr Lys Lys His Thr Ser Leu Ile Asn Arg Tyr Phe Asn
 290 295 300
 Leu Lys Lys Glu Ala Leu Asn Leu Lys Glu Phe His Phe Tyr Asp Val
 305 310 315 320
 Tyr Ala Pro Ile Ser Gln Thr Thr Ser Lys Asn Tyr Ser Tyr Glu Glu
 325 330 335
 Gly Val Asp Leu Val Cys Lys Ser Leu Leu Pro Leu Gly Thr His Tyr
 340 345 350
 Val Glu Ile Leu Arg Asn Gly Leu Leu Ser Asn Arg Trp Val Asp Arg
 355 360 365
 Tyr Glu Asn Lys His Lys Arg Ser Gly Ala Tyr Ser Ser Gly Cys Tyr
 370 375 380
 Asp Ser Ala Pro Tyr Ile Leu Leu Asn Tyr Thr Asn Thr Leu Tyr Asp
 385 390 395 400
 Val Ser Val Ile Ala His Glu Ala Gly His Ser Met His Ser Tyr Phe
 405 410 415
 Ser Arg Glu Ala Gln Pro Tyr His Asp Ala Gln Tyr Pro Leu Phe Leu
 420 425 430
 Ala Glu Ile Ala Ser Thr Phe Asn Glu Met Leu Leu Met Glu Ala Leu
 435 440 445
 Ser Lys Ser Asp Gln Ser Lys Glu Asp Lys Ile Val Ile Ile Thr Lys
 450 455 460
 Thr Leu Asp Thr Ile Phe Ala Thr Leu Phe Arg Gln Thr Phe Phe Ala
 465 470 475 480
 Ala Phe Glu Tyr Glu Ile His Ser Ala Ala Glu Gln Gly Thr Pro Leu
 485 490 495
 Thr Glu Glu Phe Leu Ser Ala Thr Tyr Gly Asn Leu Gln Lys Glu Phe

500 505 510
 Tyr Gly Gly Val Val Thr Ser Asp Ser Leu Ser Ala Leu Glu Trp Ala
 515 520 525
 Arg Ile Pro His Phe Tyr Tyr Asn Phe Tyr Val Tyr Gln Tyr Ala Thr
 530 535 540
 Gly Ile Ile Ala Ala Leu Ser Phe Ala Glu Lys Xaa Leu Thr Gln Glu
 545 550 555 560
 Pro Gly Ala Leu Glu Leu Tyr Leu Lys Phe Leu Lys Ser Gly Arg Ser
 565 570 575
 Asp Phe Pro Leu Asn Ile Leu Lys Lys Ser Gly Leu Asp Met Thr Thr
 580 585 590
 Ser Ala Pro Leu Asp Lys Ala Phe Ala Phe Ile Thr Lys Lys Ile Asp
 595 600 605
 Leu Leu Ser Ser Leu Leu Ser Glu Asp
 610 615
 <210>156
 <211>251
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>156
 Met Asn Val Ala Asp Leu Leu Ser His Leu Glu Thr Leu Leu Ser Ser
 1 5 10 15
 Lys Ile Phe Gln Asp Tyr Gly Pro Asn Gly Leu Gln Val Gly Asp Pro
 20 25 30
 Gln Thr Pro Val Lys Lys Ile Ala Val Ala Val Thr Ala Asp Leu Glu
 35 40 45
 Thr Ile Lys Gln Ala Val Ala Ala Glu Ala Asn Val Leu Ile Val His
 50 55 60
 His Gly Ile Phe Trp Lys Gly Met Pro Tyr Pro Ile Thr Gly Met Ile
 65 70 75 80
 His Lys Arg Ile Gln Leu Leu Ile Glu His Asn Ile Gln Leu Ile Ala
 85 90 95
 Tyr His Leu Pro Leu Asp Ala His Pro Thr Leu Gly Asn Asn Trp Arg
 100 105 110
 Val Ala Leu Asp Leu Asn Trp His Asp Leu Lys Pro Phe Gly Ser Ser
 115 120 125
 Leu Pro Tyr Leu Gly Val Gln Gly Ser Phe Ser Pro Ile Asp Ile Asp
 130 135 140
 Ser Phe Ile Asp Leu Leu Ser Arg Tyr Tyr Gln Ala Pro Leu Lys Gly
 145 150 155 160
 Ser Ala Leu Gly Gly Pro Ser Arg Val Ser Ser Ala Ala Leu Ile Ser
 165 170 175
 Gly Gly Ala Tyr Arg Glu Leu Ser Ser Ala Ala Thr Ser Gln Val Asp
 180 185 190
 Cys Phe Ile Thr Gly Asn Phe Asp Glu Pro Ala Trp Ser Thr Ala Leu
 195 200 205
 Glu Ser Asn Ile Asn Phe Leu Ala Phe Gly His Thr Ala Thr Glu Lys
 210 215 220
 Val Gly Pro Lys Ser Leu Ala Glu His Leu Lys Ser Glu Phe Pro Ile
 225 230 235 240
 Ser Thr Thr Phe Ile Asp Ala Ala Asn Pro Phe
 245 250

<210>157

<211>449

<212>PRT

<213>Chlamydia pneumoniae

<400>157

Met Trp Lys Leu Thr Lys Arg Asn Ser Met Leu Asn Cys Ser Asn Gln
 1 5 10 15
 Lys His Thr Val Thr Phe Glu Glu Ala Cys Gln Val Phe Pro Gly Gly
 20 25 30
 Val Asn Ser Pro Val Arg Ala Cys Arg Ser Val Gly Val Thr Pro Pro
 35 40 45
 Ile Val Ser Ser Ala Gln Gly Asp Ile Phe Leu Asp Thr His Gly Arg

Xaa

Val Ser Asn His Asn Ile Arg Phe Cys Xaa Gly Gly Pro Leu Gln Ala
50 55 60

Asn Gln Met Met Leu Leu His Ser Cys Ser Glu Ile Pro Glu Gln Thr
 65 70 75 80
 Leu Glu Ile Cys Pro Ser Val Tyr Leu Gly Gly Asp Leu Pro Phe Leu
 85 90 95
 Gln Glu Ile Ala Ser Ser Glu Ser Gly Pro Glu Ile Asn Leu Cys Phe
 100 105 110
 Gly Tyr Ser Gly Trp Gln Ala Gly Gln Leu Glu Lys Glu Phe Leu Ser
 115 120 125
 Asn Asp Trp Phe Leu Ala Pro Gly Asn Lys Asp Tyr Val Phe Tyr Ser
 130 135 140
 Glu Pro Glu Asp Leu Trp Ala Leu Val Leu Lys Asp Leu Gly Gly Lys
 145 150 155 160
 Tyr Ala Ser Leu Ser Thr Val Pro Asp Asn Leu Leu Leu Asn
 165 170

<210>159

<211>124

<212>PRT

<213>Chlamydia pneumoniae

<400>159

Met Ser Leu Glu Lys Glu Leu Leu Glu Glu Thr Pro Leu Val Leu Leu
 1 5 10 15
 Asn Phe Tyr Lys Leu Val Ser Phe Cys Asn Tyr Ala Gly Met Ile Leu
 20 25 30
 Gly Thr Glu Glu Lys Lys Phe Ala Ile Tyr Gly His Val Ser Met Gly
 35 40 45
 Gln Ala Phe Gln Gly Ala Asp Thr Glu Gly His Ser Pro Gln Arg Pro
 50 55 60
 Phe Ala His Asp Leu Leu Asn Phe Val Phe Ser Gly Phe Asp Ile Gln
 65 70 75 80
 Val Leu Arg Val Val Ile Asn Asp Tyr Lys Asp Asn Val Phe Tyr Thr
 85 90 95
 Arg Leu Phe Leu Glu Gln Lys Asp Arg Glu Phe Leu Tyr Val Val Asp
 100 105 110
 Val Asp Ala Arg Pro Ser Asp Arg Ser Leu Ser Pro
 115 120

<210>160

<211>140

<212>PRT

<213>Chlamydia pneumoniae

<400>160

Ser Arg Pro Ser Ile Ala Asp Asp Gln Arg Trp Trp Arg Thr Phe Phe
 1 5 10 15
 Arg Glu Lys Ile Leu Leu Arg Ala Ala Lys Arg Ser Ile Ile Leu Val
 20 25 30
 Asp Glu Ser Lys Leu Val Pro Val Leu Gly Lys Phe Arg Val Pro Leu
 35 40 45
 Glu Ile Ser Arg Phe Gly Arg Ser Ala Ile Ile Glu Glu Ile Arg His
 50 55 60
 Leu Gly Tyr Glu Gly Glu Trp Arg Leu Gln Asp Thr Gly Asp Leu Phe
 65 70 75 80
 Ile Thr Asp Ser Ser Asn Tyr Ile Tyr Asp Ile Phe Ser Pro Asn Ser
 85 90 95
 Tyr Pro Asn Pro Glu Lys Asp Leu Leu Lys Leu Ile Gln Ile His Gly
 100 105 110
 Val Ile Glu Val Gly Phe Val Ile Glu Lys Val Glu Val Trp Ser Ser
 115 120 125
 Asn Ser Gln Gly Leu Ile Ser Lys Lys Tyr Ser Val
 130 135 140

<210>161

<211>112

<212>PRT

<213>Chlamydia pneumoniae

<400>161

Val Glu Lys Asp Leu His Leu His Glu Lys Lys Cys Leu Ala His Glu

1 5 10 15
 Ala Ala Thr Gln Val Thr Ser Gly Met Ile Leu Gly Leu Gly Ser Gly
 20 25 30
 Ser Thr Ala Lys Glu Phe Ile Phe Ala Leu Ala His Arg Ile Gln Thr
 35 40 45
 Glu Ser Leu Ala Val His Ala Ile Ala Ser Ser Gln Asn Ser Tyr Ala
 50 55 60
 Leu Ala Lys Gln Leu Ala Ile Pro Leu Leu Asn Pro Glu Lys Phe Ser
 65 70 75 80
 Ser Leu Asp Leu Thr Val Asp Gly Ala Asp Glu Val Asp Pro Gln Leu
 85 90 95
 Arg Met Ile Lys Gly Gly Gly Gly Pro Phe Ser Glu Lys Arg Phe Phe
 100 105 110
 <210>162
 <211>378
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>162
 Arg Arg Thr Ile Met Asn Thr Ser Leu Lys Arg Pro Leu Lys Ser His
 1 5 10 15
 Phe Asp Val Val Gly Ser Phe Leu Arg Pro Glu His Leu Lys Lys Thr
 20 25 30
 Arg Glu Ser Leu Lys Glu Gly Ser Ile Ser Leu Asp Gln Leu Met Gln
 35 40 45
 Ile Glu Asp Ile Ala Ile Gln Asp Leu Ile Lys Lys Gln Lys Ala Ala
 50 55 60
 Gly Leu Ser Phe Ile Thr Asp Gly Glu Phe Arg Arg Ala Thr Trp His
 65 70 75 80
 Tyr Asp Phe Met Trp Gly Phe His Gly Val Gly His His Arg Ala Thr
 85 90 95
 Glu Gly Val Phe Phe Asp Gly Glu Arg Ala Met Ile Asp Asp Thr Tyr
 100 105 110
 Leu Thr Asp Lys Ile Ser Val Ser His His Pro Phe Val Asp His Phe
 115 120 125
 Lys Phe Val Lys Ala Leu Glu Asp Glu Phe Thr Thr Ala Lys Gln Thr
 130 135 140
 Leu Pro Ala Pro Ala Gln Phe Leu Lys Gln Met Ile Phe Pro Asn Asn
 145 150 155 160
 Ile Glu Val Thr Arg Lys Phe Tyr Pro Thr Asn Gln Glu Leu Ile Glu
 165 170 175
 Asp Ile Val Ala Gly Tyr Arg Lys Val Ile Arg Asp Leu Tyr Asp Ala
 180 185 190
 Gly Cys Arg Tyr Leu Gln Leu Asp Asp Cys Thr Arg Gly Gly Leu Val
 195 200 205
 Asp Pro Arg Val Cys Ser Trp Tyr Gly Ile Asp Glu Lys Gly Leu Gln
 210 215 220
 Asp Leu Ile Gln Gln Tyr Leu Leu Ile Asn Asn Leu Val Ile Ala Asp
 225 230 235 240
 Arg Pro Asp Asp Leu Val Val Asn Leu His Val Cys Arg Gly Asn Tyr
 245 250 255
 His Ser Lys Phe Phe Ala Ser Gly Ser Tyr Asp Phe Ile Ala Lys Pro
 260 265 270
 Leu Phe Glu Gln Thr Asn Val Asp Gly Tyr Tyr Leu Glu Phe Asp His
 275 280 285
 Glu Arg Ser Gly Asp Phe Ser Pro Leu Thr Phe Ile Ser Gly Glu Lys
 290 295 300
 Thr Val Cys Leu Gly Leu Val Thr Ser Lys Thr Pro Thr Leu Glu Asn
 305 310 315 320
 Lys Asp Glu Val Ile Ala Arg Ile His Gln Ala Ala Asp Tyr Leu Pro
 325 330 335
 Leu Glu Arg Leu Ser Leu Ser Pro Gln Cys Gly Phe Ala Ser Cys Glu
 340 345 350
 Ile Gly Asn Lys Leu Thr Glu Glu Glu Gln Trp Ala Lys Val Ala Leu
 355 360 365

Val Lys Glu Ile Ser Glu Glu Val Trp Lys
 370 375

<210>163

<211>872

<212>PRT

<213>Chlamydia pneumoniae

<400>163

Val Leu Gly Val Asn Phe Met Glu Lys Phe Ser Asp Ala Val Ser Glu
 1 5 10 15
 Ala Leu Glu Lys Ala Phe Glu Leu Ala Lys Ser Ser Lys His Thr Tyr
 20 25 30
 Val Thr Glu Asn His Leu Leu Leu Ala Leu Leu Glu Asn Thr Glu Ser
 35 40 45
 Leu Phe Tyr Leu Val Ile Lys Asp Ile His Gly Asn Pro Gly Leu Leu
 50 55 60
 Asn Thr Ala Val Lys Asp Ala Leu Ser Arg Glu Pro Thr Val Val Glu
 65 70 75 80
 Gly Glu Val Asp Pro Lys Pro Ser Pro Gly Leu Gln Thr Leu Leu Arg
 85 90 95
 Asp Ala Lys Gln Glu Ala Lys Thr Leu Gly Asp Glu Tyr Ile Ser Gly
 100 105 110
 Asp His Leu Leu Leu Ala Phe Trp Ser Ser Asn Lys Glu Pro Phe Asn
 115 120 125
 Ser Trp Lys Gln Thr Thr Lys Val Ser Phe Lys Asp Leu Lys Asn Leu
 130 135 140
 Ile Thr Lys Ile Arg Arg Gly Asn Arg Met Asp Ser Pro Ser Ala Glu
 145 150 155 160
 Ser Asn Phe Gln Gly Leu Glu Lys Tyr Cys Lys Asn Leu Thr Ala Leu
 165 170 175
 Ala Arg Glu Gly Lys Leu Asp Pro Val Ile Gly Arg Asp Glu Glu Ile
 180 185 190
 Arg Arg Thr Ile Gln Val Leu Ser Arg Arg Thr Lys Asn Asn Pro Met
 195 200 205
 Leu Ile Gly Glu Pro Gly Val Gly Lys Thr Ala Ile Ala Glu Gly Leu
 210 215 220
 Ala Leu Arg Leu Ile Gln Gly Asp Val Pro Glu Ser Leu Lys Gly Lys
 225 230 235 240
 Gln Leu Tyr Val Leu Asp Met Gly Ala Leu Ile Ala Gly Ala Lys Tyr
 245 250 255
 Arg Gly Glu Phe Glu Glu Arg Leu Lys Ser Val Leu Lys Asp Val Glu
 260 265 270
 Ser Gly Asp Gly Glu His Ile Ile Phe Ile Asp Glu Val His Thr Leu
 275 280 285
 Val Gly Ala Gly Ala Thr Asp Gly Ala Met Asp Ala Ala Asn Leu Leu
 290 295 300
 Lys Pro Ala Leu Ala Arg Gly Thr Leu His Cys Ile Gly Ala Thr Thr
 305 310 315 320
 Leu Asn Glu Tyr Gln Lys Tyr Ile Glu Lys Asp Ala Ala Leu Glu Arg
 325 330 335
 Arg Phe Gln Pro Ile Phe Val Thr Glu Pro Ser Leu Glu Asp Ala Val
 340 345 350
 Phe Ile Leu Arg Gly Leu Arg Glu Lys Tyr Glu Ile Phe His Gly Val
 355 360 365
 Arg Ile Thr Glu Gly Ala Leu Asn Ala Ala Val Leu Leu Ser Tyr Arg
 370 375 380
 Tyr Ile Pro Asp Arg Phe Leu Pro Asp Lys Ala Ile Asp Leu Ile Asp
 385 390 395 400
 Glu Ala Ala Ser Leu Ile Arg Met Gln Ile Gly Ser Leu Pro Leu Pro
 405 410 415
 Ile Asp Glu Lys Glu Arg Glu Leu Ala Ala Leu Ile Val Lys Gln Glu
 420 425 430
 Ala Ile Lys Arg Glu Gln Ser Pro Ser Tyr Gln Glu Glu Ala Asp Ala
 435 440 445
 Met Gln Lys Ser Ile Asp Ala Leu Arg Glu Glu Leu Ala Ser Leu Arg

450 455 460
 Leu Gly Trp Asp Glu Glu Lys Lys Leu Ile Ser Gly Leu Lys Glu Lys
 465 470 475 480
 Lys Asn Ser Leu Glu Ser Met Lys Phe Ser Glu Glu Glu Ala Glu Arg
 485 490 495
 Val Ala Asp Tyr Asn Arg Val Ala Glu Leu Arg Tyr Ser Leu Ile Pro
 500 505 510
 Gln Leu Glu Glu Glu Ile Lys Gln Asp Glu Ala Ser Leu Asn Gln Arg
 515 520 525
 Asp Asn Arg Leu Leu Gln Glu Glu Val Asp Glu Arg Leu Ile Ala Gln
 530 535 540
 Val Val Ala Asn Trp Thr Gly Ile Pro Val Gln Lys Met Leu Glu Gly
 545 550 555 560
 Glu Ala Glu Lys Leu Leu Ile Leu Glu Glu Ser Leu Glu Glu Arg Val
 565 570 575
 Val Gly Gln Pro Phe Ala Val Ser Ala Val Ser Asp Ser Ile Arg Ala
 580 585 590
 Ala Arg Val Gly Leu Asn Asp Pro Gln Arg Pro Leu Gly Val Phe Leu
 595 600 605
 Phe Leu Gly Pro Thr Gly Val Gly Lys Thr Glu Leu Ala Lys Ala Leu
 610 615 620
 Ala Asp Leu Leu Phe Asn Lys Glu Glu Ala Met Val Arg Phe Asp Met
 625 630 635 640
 Ser Glu Tyr Met Glu Lys His Ser Ile Ser Lys Leu Ile Gly Ser Ser
 645 650 655
 Pro Gly Tyr Val Gly Tyr Glu Glu Gly Gly Ser Leu Ser Glu Ala Leu
 660 665 670
 Arg Arg Arg Pro Tyr Ser Val Val Leu Phe Asp Glu Ile Glu Lys Ala
 675 680 685
 Asp Lys Glu Val Leu Asn Ile Leu Leu Gln Val Phe Asp Asp Gly Ile
 690 695 700
 Leu Thr Asp Gly Lys Lys Arg Lys Val Asn Cys Lys Asn Ala Leu Phe
 705 710 715 720
 Ile Met Thr Ser Asn Ile Gly Ser Pro Glu Leu Ala Asp Tyr Cys Ser
 725 730 735
 Lys Lys Gly Ser Glu Leu Thr Lys Glu Ala Ile Leu Ser Val Val Ser
 740 745 750
 Pro Val Leu Lys Arg Tyr Leu Ser Pro Glu Phe Met Asn Arg Ile Asp
 755 760 765
 Glu Ile Leu Pro Phe Val Pro Leu Thr Lys Glu Asp Ile Val Lys Ile
 770 775 780
 Val Gly Ile Gln Met Arg Arg Ile Ala Gln Arg Leu Lys Ala Arg Arg
 785 790 795 800
 Ile Asn Leu Ser Trp Asp Asp Ser Val Ile Leu Phe Leu Ser Glu Gln
 805 810 815
 Gly Tyr Asp Ser Ala Phe Gly Ala Arg Pro Leu Lys Arg Leu Ile Gln
 820 825 830
 Gln Lys Val Val Ile Leu Leu Ser Lys Ala Leu Leu Lys Gly Asp Ile
 835 840 845
 Lys Pro Asp Thr Ser Ile Glu Leu Thr Met Ala Lys Glu Val Leu Val
 850 855 860
 Phe Lys Lys Val Glu Thr Pro Ser
 865 870
 <210>164
 <211>182
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>164
 Asn Cys Ala Ala Ser Phe Ile Trp Leu Asn Lys Ser Ser His Arg Asn
 1 5 10 15
 Leu Arg Ser Pro Met Phe Lys Ser Phe Ile Val Arg Tyr Met Phe Val
 20 25 30
 Gly Gly Leu Val Ser Phe Leu Leu Pro Ile Pro Asp Leu Glu Cys Ala
 35 40 45

Asn Asn Val Thr Lys Thr Tyr Asp Lys Lys Ala Ser Val Ile Ser Arg
 50 55 60
 Asp Leu Lys Leu Gln Glu Asp Cys Gln Lys Phe Trp Asn Leu Asp Pro
 65 70 75 80
 Tyr Lys Leu Glu Ser Leu Cys Ala Tyr Gln Val Leu Tyr His Asp Asp
 85 90 95
 Tyr Ser Ser Lys Arg Ile Arg Glu Leu Phe Pro Gln Ile Gln Lys Asp
 100 105 110
 Glu Val Pro Ile Phe Ala Thr Met Ile Leu Thr Leu Gly Lys Val Asp
 115 120 125
 Arg Gly Phe Ser Pro Glu Glu Ile Ser Leu Ile Gln Lys Leu Ser Tyr
 130 135 140
 Pro Gly Leu Ser Leu Ala Ser Leu Arg Gly Ser Thr Glu Ile Arg Pro
 145 150 155 160
 Glu Tyr Arg Phe Gly Ser Cys Phe Ser Ser Val Gly Val Phe Trp Arg
 165 170 175
 Phe Arg Glu Glu Pro Ser
 180

<210>165

<211>399

<212>PRT

<213>Chlamydia pneumoniae

<400>165

Glu Gly Leu Gln Lys Leu Asp Pro Asn Thr Asp Leu Ala Arg Ala Leu
 1 5 10 15
 Val Val Ser Glu Phe Ser Gly Asp Leu Gly Lys Asn Arg Ala Asp Tyr
 20 25 30
 Tyr Ser Asn Cys Leu Asp Ile Leu Ala Leu Arg Ile His Ala Glu Arg
 35 40 45
 Gln Arg Tyr Leu Asp Gln Ser Pro Cys Val Pro Gly Thr Ser Glu Phe
 50 55 60
 His Lys Ala Thr Ile Glu Ala Ile Asn Thr Ile Leu Phe Tyr Glu Glu
 65 70 75 80
 Ala Val Arg Tyr Pro Ser Lys Lys Glu Met Phe Ser Asp Glu Phe Ser
 85 90 95
 Phe Leu Ser Ser Val Thr Asp Arg Lys Phe Gly Val Cys Leu Gly Val
 100 105 110
 Ser Ser Leu Tyr Phe Ser Leu Ser Gln Arg Leu Asp Leu Pro Leu Glu
 115 120 125
 Ala Val Thr Pro Pro Gly His Ile Tyr Leu Arg Tyr Gln Gly Gly Glu
 130 135 140
 Val Asn Ile Glu Thr Thr Ala Gly Gly Arg His Leu Pro Thr Ala Ser
 145 150 155 160
 Tyr Cys Asp Cys Leu Asp Leu Glu Asp Leu Gln Val Arg Thr Pro Glu
 165 170 175
 Glu Met Ile Gly Leu Thr Phe Met Asn Gln Gly Ser Phe Ala Leu Gln
 180 185 190
 Lys Lys Lys Tyr Lys Glu Ala Glu Glu Ala Tyr Lys Lys Ala Gln Glu
 195 200 205
 Tyr Leu Gly Asp Glu Glu Leu Gln Glu Leu Leu Gly Phe Val Gln Ile
 210 215 220
 Leu Gly Gly Lys Lys Lys Glu Gly Lys Ser Leu Ile Gly Lys Ser Pro
 225 230 235 240
 Arg Ala Ser Gln Lys Gly Ser Val Ala Tyr Asp Tyr Leu Lys Gly Arg
 245 250 255
 Ile Asn Ile Pro Thr Leu Ala Leu Leu Phe Ser Tyr Pro Gly Ser Asn
 260 265 270
 Tyr Glu Glu Ile Ala Ser Tyr Glu Glu Glu Leu Lys Lys Ala Met Lys
 275 280 285
 Ser Ser Met Pro Cys Cys Glu Gly Gln Arg Arg Leu Ala Ser Val Ala
 290 295 300
 Phe His Leu Gly Lys Thr Ala Glu Ala Val Ala Leu Leu Glu Lys Cys
 305 310 315 320
 Val Glu Asp Ile Pro Asn Asp Leu Ser Leu His Leu Arg Leu Cys Lys

325 330 335
 Ile Leu Cys Asp Arg His Glu Tyr Thr Lys Ala Leu Lys Tyr Phe Ile
 340 345 350
 Ile Ala Glu Arg Leu Met Glu Asp Gln Gly Phe Leu Lys Lys Asp Asn
 355 360 365
 Arg Ser Phe Ala Leu Phe Tyr Glu Val Lys Lys Ile Ile Ser Lys Val
 370 375 380
 Ala Pro Gln Lys Ala Asn Thr Leu Leu Leu Met Glu Ser Glu Arg
 385 390 395

<210>166

<211>167

<212>PRT

<213>Chlamydia pneumoniae

<400>166

Ile Ile Val Gly Ile Ser Met Ser Ser Ser Glu Val Val Phe Gln Thr
 1 5 10 15
 Val His Gly Leu Gly Phe Gly Gly Leu Ser Ser Lys Ser Val Val Pro
 20 25 30
 Phe Lys Lys Ser Leu Ser Asp Ala Pro Arg Val Val Cys Ser Ile Leu
 35 40 45
 Val Leu Thr Leu Gly Leu Gly Ala Leu Val Cys Gly Ile Ala Ile Thr
 50 55 60
 Cys Trp Cys Val Pro Gly Val Ile Leu Met Gly Gly Ile Cys Ala Ile
 65 70 75 80
 Val Leu Gly Ala Ile Ser Leu Ala Leu Ser Leu Phe Trp Leu Trp Gly
 85 90 95
 Leu Phe Ser Asn Cys Cys Gly Ser Lys Arg Val Leu Pro Gly Glu Gly
 100 105 110
 Leu Leu Arg Asp Lys Leu Leu Asp Gly Gly Phe Ser Arg Ala Ala Pro
 115 120 125
 Ser Gly Met Gly Leu Pro Gly Asp Gly Ser Pro Arg Ala Ser Thr Pro
 130 135 140
 Ser Cys Leu Glu Glu Leu Gln Ala Glu Ile Gln Ala Val Thr Gln Ala
 145 150 155 160
 Ile Asp Gln Met Ser Asp Asp
 165

<210>167

<211>145

<212>PRT

<213>Chlamydia pneumoniae

<400>167

Leu Pro Ala Pro Glu Leu Arg Ser Ser Trp Val Lys Gly Asp Pro Pro
 1 5 10 15
 Pro Arg Pro Ala Ser Pro Ala Thr Pro Pro Ser Arg Gly Gly Val Ala
 20 25 30
 Glu Phe Leu Ser Leu Gly Ser Pro Leu Phe Pro Gly Leu Gly Ile Ser
 35 40 45
 Ala Leu Gly Ile Leu Ser Ser Leu Lys Val Ile Ser Ile Ala Gln Ala
 50 55 60
 Asn Asn Ala Thr Pro Ser Ser Ile Val Ile Ala Pro Ala Ala Ile Pro
 65 70 75 80
 Lys Gly Gln Gln Pro Ala Arg Thr Thr Arg Pro Ser Pro Ser Lys Glu
 85 90 95
 Ile Ala Thr Thr Ala Met Ile Ala Ala Ile Thr Asp Leu Ala Ile Leu
 100 105 110
 Val Ala Leu Ser Ser Val Leu Asn Ala Gly Ile Ala Ser Leu Glu Gln
 115 120 125
 Phe Thr His Pro Thr Asp Val Ala Ala Asp Val Thr Ala Ser Phe Ile
 130 135 140

Asp

145

<210>168

<211>538

<212>PRT

<213>Chlamydia pneumoniae

<400>168

Gly Lys Trp Trp Arg Val Ser Ser Met Glu Ser Glu Lys Asp Ile Gly
 1 5 10 15
 Ala Lys Phe Leu Gly Asp Tyr Arg Ile Leu Tyr Arg Lys Gly Gln Ser
 20 25 30
 Leu Trp Ser Glu Asp Leu Leu Ala Glu His Arg Phe Ile Lys Lys Arg
 35 40 45
 Tyr Leu Ile Arg Leu Leu Leu Pro Asp Leu Gly Ser Ser Gln Pro Phe
 50 55 60
 Met Glu Ala Phe His Asp Val Val Val Lys Leu Ala Lys Leu Asn His
 65 70 75 80
 Pro Gly Ile Leu Ser Ile Glu Asn Val Ser Glu Ser Glu Gly Arg Cys
 85 90 95
 Phe Leu Val Thr Gln Glu Gln Asp Ile Pro Ile Leu Ser Leu Thr Gln
 100 105 110
 Tyr Leu Lys Ser Ile Pro Arg Lys Leu Thr Glu Leu Glu Ile Val Asp
 115 120 125
 Ile Val Ser Gln Leu Ala Ser Leu Leu Asp Tyr Val His Ser Glu Gly
 130 135 140
 Leu Ala Gln Glu Glu Trp Asn Leu Asp Ser Val Tyr Ile His Ile Leu
 145 150 155 160
 Asn Gly Val Pro Lys Val Ile Leu Pro Asp Leu Gly Phe Ala Ser Leu
 165 170 175
 Ile Lys Glu Arg Ile Leu Asp Gly Phe Ile Ser Asp Glu Glu Asn Arg
 180 185 190
 Glu Ser Lys Ile Lys Glu Arg Val Leu Leu His Thr Ser Glu Gly Lys
 195 200 205
 Gln Gly Arg Glu Asp Thr Tyr Ala Phe Gly Ala Ile Thr Tyr Tyr Leu
 210 215 220
 Leu Phe Gly Phe Leu Pro Gln Gly Ile Phe Pro Met Pro Ser Lys Val
 225 230 235 240
 Phe Ser Asp Phe Ile Tyr Asp Trp Asp Phe Leu Ile Ser Ser Cys Leu
 245 250 255
 Ser Cys Phe Met Glu Glu Arg Ala Lys Glu Leu Phe Pro Leu Ile Arg
 260 265 270
 Lys Lys Thr Leu Gly Glu Glu Leu Gln Asn Val Val Thr Asn Cys Ile
 275 280 285
 Glu Ser Ser Leu Arg Glu Val Pro Asp Pro Leu Glu Ser Ser Gln Asn
 290 295 300
 Leu Pro Gln Ala Val Leu Lys Val Gly Glu Thr Lys Val Ser His Gln
 305 310 315 320
 Gln Lys Glu Ser Ala Glu His Leu Glu Phe Val Leu Val Glu Ala Cys
 325 330 335
 Ser Ile Asp Glu Ala Met Asp Thr Ala Ile Glu Ser Glu Ser Ser Ser
 340 345 350
 Gly Val Glu Glu Glu Gly Tyr Ser Leu Ala Leu Gln Ser Leu Leu Val
 355 360 365
 Arg Glu Pro Val Val Ser Arg Tyr Val Glu Ala Glu Lys Glu Glu Pro
 370 375 380
 Lys Pro Gln Pro Ile Leu Thr Glu Met Val Leu Ile Glu Gly Gly Glu
 385 390 395 400
 Phe Ser Arg Gly Ser Val Glu Gly Gln Arg Asp Glu Leu Pro Val His
 405 410 415
 Lys Val Ile Leu His Ser Phe Phe Leu Asp Val His Pro Val Thr Asn
 420 425 430
 Glu Gln Phe Asn Arg Tyr Leu Glu Cys Cys Gly Ser Glu Gln Asp Lys
 435 440 445
 Tyr Tyr Asn Glu Leu Ile Arg Leu Arg Asp Ser Arg Ile Gln Arg Arg
 450 455 460
 Ser Gly Arg Leu Val Ile Glu Pro Gly Tyr Ala Lys His Pro Val Val
 465 470 475 480
 Gly Val Thr Trp Tyr Gly Ala Ser Gly Tyr Ala Glu Trp Ile Gly Lys
 485 490 495

Arg Leu Pro Thr Glu Ala Glu Trp Glu Ile Ala Ala Ser Gly Gly Val
 500 505 510
 Ala Cys Tyr Ala Ile Pro Val Gly Arg Lys Ser Lys Lys Ala Gly Gln
 515 520 525
 Ile Phe Ser Leu Arg Ile Arg Gln Gln Ser
 530 535
 <210>169
 <211>662
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>169
 Met Lys Glu Glu Asn Ser Gln Ala His Tyr Leu Ala Leu Cys Arg Glu
 1 5 10 15
 Leu Glu Asp His Asp Tyr Ser Tyr Tyr Val Leu His Arg Pro Arg Ile
 20 25 30
 Ser Asp Tyr Glu Tyr Asp Met Lys Leu Arg Lys Leu Leu Glu Ile Glu
 35 40 45
 Arg Ser His Pro Glu Trp Lys Val Leu Trp Ser Pro Ser Thr Arg Leu
 50 55 60
 Gly Asp Arg Pro Ser Gly Thr Phe Ser Val Val Ser His Lys Glu Pro
 65 70 75 80
 Met Leu Ser Ile Ala Asn Ser Tyr Ser Lys Glu Glu Leu Ser Glu Phe
 85 90 95
 Phe Ser Arg Val Glu Lys Ser Leu Gly Thr Ser Pro Arg Tyr Thr Val
 100 105 110
 Glu Leu Lys Ile Asp Gly Ile Ala Val Ala Ile Arg Tyr Glu Asp Arg
 115 120 125
 Val Leu Val Gln Ala Leu Ser Arg Gly Asn Gly Lys Gln Gly Glu Asp
 130 135 140
 Ile Thr Ser Asn Ile Arg Thr Ile Arg Ser Leu Pro Leu Arg Leu Pro
 145 150 155 160
 Glu Asp Ala Pro Glu Phe Ile Glu Val Arg Gly Glu Val Phe Phe Ser
 165 170 175
 Tyr Ser Thr Phe Gln Ile Ile Asn Glu Lys Gln Gln Gln Leu Glu Lys
 180 185 190
 Thr Ile Phe Ala Asn Pro Arg Asn Ala Ala Gly Gly Thr Leu Lys Leu
 195 200 205
 Leu Ser Pro Gln Glu Ser Arg Lys Arg Lys Leu Glu Ile Ser Ile Tyr
 210 215 220
 Asn Leu Ile Ala Pro Gly Asp Asn Asp Ser His Tyr Glu Asn Leu Gln
 225 230 235 240
 Arg Cys Leu Glu Trp Gly Phe Pro Val Ser Gly Lys Pro Arg Leu Cys
 245 250 255
 Ser Thr Pro Glu Glu Val Ile Ser Val Leu Lys Thr Ile Glu Thr Glu
 260 265 270
 Arg Ala Ser Leu Pro Met Glu Ile Asp Gly Ala Val Ile Lys Val Asp
 275 280 285
 Ser Leu Ala Ser Gln Arg Val Leu Gly Ala Thr Gly Lys His Tyr Arg
 290 295 300
 Trp Ala Leu Ala Tyr Lys Tyr Ala Pro Glu Glu Ala Glu Thr Leu Leu
 305 310 315 320
 Glu Asp Ile Leu Val Gln Val Gly Arg Thr Gly Val Leu Thr Pro Val
 325 330 335
 Ala Lys Leu Thr Pro Val Leu Leu Ser Gly Ser Leu Val Ser Arg Ala
 340 345 350
 Ser Leu Tyr Asn Glu Asp Glu Ile His Arg Lys Asp Ile Arg Ile Gly
 355 360 365
 Asp Thr Val Cys Val Ala Lys Gly Gly Glu Val Ile Pro Lys Val Val
 370 375 380
 Arg Val Cys Arg Glu Lys Arg Pro Glu Gly Ser Glu Val Trp Asn Met
 385 390 395 400
 Pro Glu Phe Cys Pro Val Cys His Ser His Val Val Arg Glu Glu Asp
 405 410 415
 Arg Val Ser Val Arg Cys Val Asn Pro Glu Cys Val Ala Gly Ala Ile

420 425 430
 Glu Lys Ile Arg Phe Phe Val Gly Arg Gly Ala Leu Asn Ile Asp His
 435 440 445
 Leu Gly Val Lys Val Ile Thr Lys Leu Phe Glu Leu Gly Leu Val His
 450 455 460
 Thr Cys Ala Asp Leu Phe Gln Leu Thr Thr Glu Asp Leu Met Gln Ile
 465 470 475 480
 Pro Gly Ile Arg Glu Arg Ser Ala Arg Asn Ile Leu Glu Ser Ile Glu
 485 490 495
 Gln Ala Lys His Val Asp Leu Asp Arg Phe Leu Val Ala Leu Gly Ile
 500 505 510
 Pro Leu Ile Gly Ile Gly Val Ala Thr Val Leu Ala Gly His Phe Glu
 515 520 525
 Thr Leu Asp Arg Val Ile Ser Ala Thr Phe Glu Glu Leu Ser Leu
 530 535 540
 Glu Gly Ile Gly Glu Lys Val Ala His Ala Ile Ala Glu Tyr Phe Ser
 545 550 555 560
 Asp Ser Thr His Leu Asn Glu Ile Lys Lys Met Gln Asp Leu Gly Val
 565 570 575
 Cys Ile Ser Pro Tyr His Lys Ser Gly Ser Thr Cys Phe Gly Lys Ala
 580 585 590
 Phe Val Ile Thr Gly Thr Leu Glu Gly Met Ser Arg Leu Asp Ala Glu
 595 600 605
 Thr Ala Ile Arg Asn Cys Gly Gly Lys Val Gly Ser Ser Val Ser Lys
 610 615 620
 Gln Thr Asp Tyr Val Val Met Gly Asn Asn Pro Gly Ser Lys Leu Glu
 625 630 635 640
 Lys Ala Arg Lys Leu Gly Val Ser Ile Leu Asp Gln Glu Ala Phe Thr
 645 650 655
 Asn Leu Ile His Leu Glu
 660

<210>170

<211>441

<212>PRT

<213>Chlamydia pneumoniae

<400>170

Ile Ile Tyr Tyr Lys Phe Phe Tyr Ser Tyr Asn Cys Pro Tyr Phe Ile
 1 5 10 15
 Ser Phe Phe Val Leu Leu Gly Val Asn Met Ala Ser Ser Ser Asn Asn
 20 25 30
 Ser Thr Lys Gln Asp Gly Ile Pro Ser Trp Val Asn Pro Asn Val Gln
 35 40 45
 Trp Asn Arg Ala Ser Gln Val Gly Asp Gln Glu Ala Asn Ser Leu Thr
 50 55 60
 Pro Glu Ala Gln Thr Ser Arg Ser Trp Phe Ser Asp Arg Lys His Phe
 65 70 75 80
 Leu Glu Val Leu Asp Val Ser Leu Glu Glu Met Glu Asn Asn Asp Leu
 85 90 95
 Lys Lys Tyr Ser Arg Tyr Lys Thr Ile Ile Leu Ile Ala Thr Leu Val
 100 105 110
 Thr Val Ala Ile Thr Cys Ile Val Pro Ile Ser Met Val Phe Gly Ile
 115 120 125
 Pro Met Trp Val Pro Cys Leu Ile Leu Phe Gly Ala Gly Leu Ser Ser
 130 135 140
 Ala Phe Leu Ser His Arg Leu Gln Ser Lys Cys Lys Glu Ile His Leu
 145 150 155 160
 Arg Tyr Arg Ala Tyr Gln Ile Tyr Arg Gln Gln Leu Leu Ser Gln Tyr
 165 170 175
 Pro Asp Leu Arg Lys Ser Thr Leu Tyr Lys Tyr Ser Ile Thr His Val
 180 185 190
 Lys Pro Lys Lys Gly Phe Val Gly Lys Leu Val Glu Asn Leu Arg Pro
 195 200 205
 Asp Leu His Lys Asn Lys Asp Asp Gly Gly Ala Ala Ala Asp Ser Arg
 210 215 220

Leu Asp Phe Ala Gly Tyr Gly Val Lys His Tyr Gln Thr Asp Ala Leu
 225 230 235 240
 Leu Gly Val Ser Gly Val Asn Ser Val Glu Trp Gln Arg Leu Ala Ser
 245 250 255
 Leu Ile Met Ser Val Lys Asn Asp Ile Leu Asn Asp Val Gly Ser Arg
 260 265 270
 Glu Pro Ile Asp Lys Ala Gln Arg Ser Ala Leu Val Val Ser Gly Lys
 275 280 285
 Asp Ile Gly Gly Glu Ile Gln Pro Gly Gly Ile Leu Asp Ile Ser Arg
 290 295 300
 Asp Ile Leu Ala Ile Cys Gly Tyr Gly Met Asn Val Gly Val Glu Ala
 305 310 315 320
 Lys Lys Ala Ile Asp Gln Tyr Lys Lys Trp Tyr Leu Asn Ser Ser Thr
 325 330 335
 Phe Ile Ala Trp Asn Pro Gln Leu Pro Ala Ile Ala Gln Ser Tyr Leu
 340 345 350
 Leu Glu Gln Gln Arg His Leu Asp Tyr Ala Ala Lys Ile Phe Gln Asp
 355 360 365
 Leu Ser Ala Leu Thr Thr Ala His Gly Thr Gly Gln Ala Leu Glu Asp
 370 375 380
 Leu Asp Ser Leu Leu Cys Tyr Tyr Asp Gln Leu Ile Glu Ser Lys Gly
 385 390 395 400
 Val Gly Glu Lys Ile Ile Ala Ser Ile His Gln Lys Ala Ser Arg Leu
 405 410 415
 Ser Asn Ala Arg Phe Leu Arg Ser Gly Thr Phe Lys Glu Met Val Glu
 420 425 430
 Ser Ile Pro Arg Val Phe Asn Tyr Tyr
 435 440

<210>171

<211>1156

<212>PRT

<213>Chlamydia pneumoniae

<400>171

His Arg Phe Thr Arg Lys His Leu Asp Leu Ala Met Gln Asp Ser Cys
 1 5 10 15
 Asp Gln Glu His Leu Lys Lys Trp Ser Asn Leu Tyr His Val Phe Ser
 20 25 30
 Ile Thr Ile Lys Glu Phe Thr Glu Gly Lys Leu Glu Gln Asn Glu Val
 35 40 45
 Val Ser Arg Ile Gln Arg Leu Arg Gly Lys Leu Glu Lys Ser Lys Cys
 50 55 60
 Ser Ile Leu Gly Asn Cys Arg Thr Asn Ala Glu Tyr Ala Thr Lys Ser
 65 70 75 80
 Glu Lys Lys Leu Ala Asp Tyr Leu Leu Gln Ile Gly Asp Arg Glu Pro
 85 90 95
 Phe Leu Thr Gly Met His Lys Ala Ile Ala Thr Gly Lys Ala Ile Gln
 100 105 110
 Gly Lys Val Glu Gly Val Ile Ser Gln His Pro Glu Lys Gln Ile Met
 115 120 125
 Met Leu Arg Cys Ser Ile Glu Arg Leu Glu Gly Met Leu Arg Arg Glu
 130 135 140
 Asp Trp Gly Ala Ile Leu Gln Lys Asn Glu Asp Glu Val Leu Ala Leu
 145 150 155 160
 Lys Ser Thr Met Glu Ala Gln Leu Gln Gly Phe Lys Asp Leu Val Gly
 165 170 175
 Thr Trp Glu Gly Lys Tyr Gln Glu Phe Lys Lys Asn Lys Leu Ser Lys
 180 185 190
 Val Leu Val Tyr Asp Phe Thr Lys Ser Tyr Ser Asn Leu Leu Asn Arg
 195 200 205
 Leu Glu Val Leu His Ala Glu Ser Ser Thr Asp Asp Leu Val Leu His
 210 215 220
 Val Asp Arg Met Ser Glu Asp Leu Lys Lys Thr Ile Glu Glu Ile Asp
 225 230 235 240
 Gly Asn Leu Phe Gln Val Thr Pro Glu Glu Leu Ser Leu Leu Ala Arg

245 250 255
 Glu Tyr Gln Gly Leu Met Asn Glu Leu Pro Leu Ile Val Gln Glu Gly
 260 265 270
 Asn Arg Leu Gln Glu Ala Ile Ser Ser Glu Gly Val Ser Gln Gly Leu
 275 280 285
 Met Leu Leu Asn Ser Leu Leu Asn Arg Asp Glu Lys Ile Asn Lys Asn
 290 295 300
 Ile Glu Ser Ser Arg Lys Asn Leu Val Ala Ile Ala Lys Gln Ala Arg
 305 310 315 320
 Ser Asp Ala Arg Asn Ile Asp Ser Gln Gly Leu Ala Pro Leu Ile Gln
 325 330 335
 Arg Asn Arg Ala Ser Leu Asp Asn Ile Leu Gln Asn Met Tyr Leu Phe
 340 345 350
 Asn Gly Ser Ile Arg Asn Ile His Ala Leu Asp Thr Glu Thr Leu Val
 355 360 365
 Ala Thr Ser Ser Asn Met Phe Ser Ala Met His Thr Phe Asp Trp Asn
 370 375 380
 Ile Tyr Thr Asn Leu Leu Asp Val Leu Glu Ile Gln Ser Lys Pro Ala
 385 390 395 400
 Pro Ala Pro Met Glu Asn Pro Asp Leu Pro Gly Ala Leu Pro Glu Glu
 405 410 415
 Val Gln Asp Ala Val Ala Glu Asp Val Ser Gly Thr His Arg Leu His
 420 425 430
 His Gln Val Leu Lys Arg Arg Cys Ala Asp Leu Lys Asn Met Ile Ser
 435 440 445
 Gln Leu Gln Lys Ser Ile Asn Lys Trp Gly Met Ala Lys Ala Ile Val
 450 455 460
 Leu Gly Ile Val Ala Val Leu Phe Cys Val Leu Ser Ala Ile Phe Ile
 465 470 475 480
 Gly Gln Asn Ile Leu Ser Leu Leu Ile Leu Ser Cys Val Gly Leu Leu
 485 490 495
 Leu Thr Gln Val Cys Pro Leu Ile Phe Asp Arg Ile Ser Lys Ser Lys
 500 505 510
 Glu Phe Glu Lys Gln Val Leu Glu Thr Ala Gln Ser Leu Ile Pro Ala
 515 520 525
 Thr Lys Ile Leu Pro Ser Glu Phe Asn Asn Lys Asp Leu Asn Arg Leu
 530 535 540
 Ala Lys Leu Gln Asp Asn Leu Asn Leu Glu Gly Phe Gly Pro Thr Trp
 545 550 555 560
 Ala Arg Asn Ile Val Ser Asp Leu Glu Gly Ile Pro Thr Lys Glu Lys
 565 570 575
 Ser Leu Lys Asp Leu Thr Lys Glu Phe Arg Lys Asp Ser Lys Asn Leu
 580 585 590
 Asn Lys Arg Ile Lys Arg Arg Phe Lys Glu Gly Leu Gly Gln Glu Ala
 595 600 605
 Pro Val Val Arg Pro Thr Ile Pro Gln Asp Ile Arg Gly Ala Glu Val
 610 615 620
 Phe Ala Glu Leu His Arg Glu Leu Glu His Leu Gln Lys Gln Lys Glu
 625 630 635 640
 Glu Ile Ser Ile Arg Gly Asp Ala Leu Val Gln Glu Arg Met Gly Leu
 645 650 655
 Cys Leu Glu Lys Ser Lys Tyr Asp Asn Glu Lys Ala His Ala Ala Ala
 660 665 670
 Met Thr Lys Lys Val Gly Lys Leu Gln Asn Ile Asp Arg Leu Gln Lys
 675 680 685
 Asn Asn Glu Thr Tyr Val Arg Ile Gln Asn Phe Phe Arg Thr Leu Ile
 690 695 700
 Gln Glu Lys Leu Gly Arg Asp Thr Val Gln Glu Ile Asp Val Val Lys
 705 710 715 720
 Glu Ala Lys Glu Leu His Glu Leu Ala Ala Ile Ile Tyr Gly Asn Thr
 725 730 735
 Ser Gly Lys Ser Gln Lys Gln Arg Ala Lys Lys Gln Phe Lys Glu Asn
 740 745 750
 Val Leu His Ile Ala Gly Lys Gly Gln Leu Glu Leu Leu Glu Ala Tyr

755 760 765
 Leu Asn Val Thr Ala Ser Gln Gly Leu Cys Arg His Gln Met Gln Ala
 770 775 780
 Ser Phe Arg Glu Arg Ile Leu Leu Asn Pro Asp Gly Ala Lys His Gly
 785 790 795 800
 Glu Ala Glu Arg Thr Leu Ala Ser Arg Glu Glu Met Leu Lys Thr Leu
 805 810 815
 Gly Leu Ser Tyr Leu Thr Pro Phe Val Arg Phe Ser Ser Pro Glu Ser
 820 825 830
 Thr Gln Ser Gly Tyr Asn Gln Ile Leu Lys Val Arg Glu Gln Leu Phe
 835 840 845
 Asp Ile Glu Gln Arg Leu Gln Asn Gln Glu Thr Val Ser Pro Glu Asp
 850 855 860
 Tyr Ala Ala Val Gln Ala Leu Ala Ala Tyr Val Arg Lys His Glu
 865 870 875 880
 Ser Leu Ile Val Ser Thr Tyr Gly Leu Gly Ala Gln Glu Gly Gln Thr
 885 890 895
 Ser Ser Lys Val Thr Thr Leu Met Arg Asp Leu His Ala Val Glu Glu
 900 905 910
 Leu Val Glu Met Gly Val Glu Thr Tyr Arg Leu Asn Arg Ser Asp Gln
 915 920 925
 Ile Leu His Arg Val His Ser Val Leu His Ser His Leu Arg Asp Ser
 930 935 940
 Asp Ser Ser Gly Asn Gly Ile Ile Asp Val Val Lys Lys Leu Phe Glu
 945 950 955 960
 Leu Leu Asn Asn Asn Gly Asn Asn Pro Asn Asp Pro Glu Cys Gln Lys
 965 970 975
 Tyr Met Gln Ile Leu Leu Asp Ala Pro Val Ser Leu Leu Tyr Gly Ala
 980 985 990
 Phe Lys Ser Phe Lys Asn Glu Phe Leu Leu Asn Phe Thr Glu Leu Asn
 995 1000 1005
 Ile Ala Asn Ser Thr Lys Ala Ala Glu Glu Glu Ala Lys Arg Tyr Val
 1010 1015 1020
 Glu Glu Lys Gly Arg Gly Phe Glu Thr Tyr Trp Glu Glu Ala Lys Gln
 1025 1030 1035 1040
 Arg Leu Glu Ala Ile Ala Ala Glu Leu Asp Asp Leu Arg Asn Gln Glu
 1045 1050 1055
 Thr Leu Leu Glu Gln Glu Ile Arg Leu Ala Asn Leu Lys Ile Ser Ile
 1060 1065 1070
 Phe Ser Asp Leu Asn Leu Arg Glu Lys Val Ser Val Glu Lys Ala Ala
 1075 1080 1085
 Leu Glu Glu Glu Ile Gln Gly Ile Gln Glu Gln Tyr Ala Glu Met Gln
 1090 1095 1100
 Gly Ile Glu Asp Leu Glu Leu Lys Gln Lys Phe Glu Asp Leu Gln Lys
 1105 1110 1115 1120
 Lys Leu Glu Ala Leu Glu Glu Arg Leu Leu Gln Ile Gly Arg Arg Ile
 1125 1130 1135
 Asp Ser Ser Val Asp Lys Gln Lys Glu Leu Leu Gly Leu Leu Gly Arg
 1140 1145 1150
 Glu Glu Ala Ala
 1155
 <210>172
 <211>518
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>172
 Cys Tyr Glu Asn Leu Phe His Tyr Pro Arg Ala Ser Met Ala Asp Ile
 1 5 10 15
 Leu Val Ile Gly Ala Asn Pro Thr Gly Leu Ile Leu Ala Asn Met Leu
 20 25 30
 Ile Gln His Gly Ile Ser Val Lys Val Ile Asp His Arg Ala Ser Pro
 35 40 45
 Glu Asp Pro Ser Phe Leu Asp Cys Arg Lys Leu Pro Val Ile Leu Ser
 50 55 60

Cys Ser Ser Leu Glu Leu Leu His Asn Ser Glu Met Leu Gly Asp Phe
 65 70 75 80
 Ile Gln Ala Asn His Lys Ile Phe Gly Ala Arg Tyr His Trp Lys Lys
 85 90 95
 Arg Thr Leu Leu Phe Lys Phe Ser Gln Ala Thr Asp Ser Pro Val Pro
 100 105 110
 Phe Ser Leu Ser Thr Thr Tyr Gln Ser Leu Glu Gln His Leu Ile Asp
 115 120 125
 Glu Phe Leu Lys Arg Gly Gly Val Ile Asp Trp Ser Thr Arg Pro Val
 130 135 140
 Thr Leu Val Asp Asn Ser Ile Phe Ile Glu Ser Thr Lys Val Ser Gln
 145 150 155 160
 Asn Phe Glu Asn Arg Glu Ile Tyr Asn Pro Lys Trp Ile Ile Ala Cys
 165 170 175
 Glu Ala Asp Asn Asn Leu Asp Ile Arg Asp Leu Val Lys Ser Gln Leu
 180 185 190
 Arg Ala Arg Arg Ile Asn Arg Glu Val Ile Phe Ile Asn Cys Asp Glu
 195 200 205
 Gly Glu Pro Phe Glu Glu Asp His Ile His Leu Leu Pro Ile Thr Lys
 210 215 220
 Asn Phe Leu Asn Phe Val Phe Tyr Asn Pro Gln Glu Lys Thr Lys Gln
 225 230 235 240
 Leu Cys Leu Pro Gln Gly Thr His Ser Ile Ser Pro Lys Leu Lys Gln
 245 250 255
 Lys Leu Leu Tyr Thr Tyr Asn Leu Val Ile Ser Asp Glu Asn Phe His
 260 265 270
 Ile Lys Thr Ser His His Ala Phe Pro Pro Glu His Gly Asn Val Leu
 275 280 285
 Phe Leu Gly Ser Leu Ser Asn Thr Leu Leu Leu Ser Tyr Leu Asn Gly
 290 295 300
 Ile Asn Thr Asn Ile His Ala Ala Phe Asn Leu Ala Trp Lys Leu Leu
 305 310 315 320
 Pro Val Leu Lys Lys Ala Ala Leu Lys His Leu Val Ile Thr Lys Glu
 325 330 335
 Gln Glu Asp Gly Asn Ile Leu Pro Tyr Ile Ser Pro Thr Thr Glu Lys
 340 345 350
 Arg Ala Lys Lys Leu Pro Phe Ser Arg Phe Tyr Thr Pro Ala Leu Met
 355 360 365
 Tyr Tyr Phe Leu Lys Gly Cys Arg Lys Phe Asn Thr Thr Gly Glu Glu
 370 375 380
 Tyr Tyr Tyr Pro Pro His Gln Ala Leu Lys Tyr Arg Ser Ser Asp Ile
 385 390 395 400
 Ile Lys Met Ser Pro Gln Asp Lys Glu Ile His Gly Pro Gly Pro Gly
 405 410 415
 Met Arg Ala Ile Asp Ala Arg Leu Glu Asn Gly Ser Phe Leu Leu Asp
 420 425 430
 Pro Leu Lys Ser Ser Lys His Leu Leu Ile Phe Phe Lys Asp Ile Pro
 435 440 445
 Asp Leu Lys Glu Ala Leu Gln Glu Glu Tyr Gly Glu Trp Ile Glu Ile
 450 455 460
 Cys Asn Val Lys Glu Pro Arg Ile Leu Asn Leu Tyr His Ala Asn Pro
 465 470 475 480
 Asn Ser Leu Phe Ile Ile Arg Pro Asp Arg Tyr Ile Gly Tyr Arg Thr
 485 490 495
 His Thr Phe Lys Leu His Glu Leu Ile Ser Tyr Leu Leu Arg Ile Phe
 500 505 510
 Ala Ser Glu Lys Thr Ser
 515

<210>173

<211>319

<212>PRT

<213>Chlamydia pneumoniae

<400>173

Leu Ile Lys Met Arg Lys Val Ala Phe Leu Val Ser Cys Leu Phe Ser

1 5 10 15
 Val Ala Ile Gly Ala Ser Ala Ala Pro Val Arg Val Pro Gly Phe Pro
 20 25 30
 Gln Ile Pro Glu Asp Xaa Val Gln Ile Lys Thr Glu Val Cys Pro Lys
 35 40 45
 Gln Glu Val Cys Leu Ala Val Thr Ile Lys Cys Asp Asp His Asn Leu
 50 55 60
 Ile Gly Val Leu His Leu Pro Asn Thr Pro Thr Pro Glu Gly Gly Phe
 65 70 75 80
 Pro Thr Val Val Leu Phe His Gly Phe Arg Gly Thr Lys Phe Gly Gly
 85 90 95
 Leu Thr Gly Ala Tyr Arg Lys Leu Gly Arg Lys Phe Ala Ala Ala Gly
 100 105 110
 Ile Ala Thr Leu Arg Val Asp Met Ala Gly Cys Gly Asp Ser Glu Gly
 115 120 125
 Val Ala Glu Glu Val Pro Ile Glu Thr Tyr Leu Arg Asp Ala Gln Thr
 130 135 140
 Ile Leu Glu Thr Val Gln Glu His Pro Asp Leu Asn Ala Tyr Arg Leu
 145 150 155 160
 Gly Ile Ser Gly Phe Ser Leu Gly Cys His Ile Ala Phe Glu Leu Ala
 165 170 175
 Lys Ile Tyr Asn Pro Arg Asp Leu Asn Ile Lys Ala Leu Ser Val Trp
 180 185 190
 Ala Pro Ile Ala Asp Gly Gly Ile Leu Leu Lys Glu Leu Tyr Glu Asn
 195 200 205
 Phe Ser Lys His Gly Glu Gly Asp Ile Ile Ser Val Gly Lys Asp Phe
 210 215 220
 Gly Phe Gly Pro Pro Pro Ile Ile Val Cys Ser Gly Asp Val Asp Leu
 225 230 235 240
 Leu Ile Arg Ile Gln Asp His Val Thr Ala Asn Ser Leu Pro Thr Lys
 245 250 255
 Pro Tyr Ile Leu His Gln Gln Gly Ile Asp Asp Thr Leu Val Ser Arg
 260 265 270
 Thr Gln Gln Thr Leu Phe Lys Asn Thr Ala Pro Gly Arg Met Thr Phe
 275 280 285
 Ile Ser Tyr Pro Asn Thr Gly His Asn Leu Ala Thr Ala Pro Asp Leu
 290 295 300
 Asp Met Ile Leu Asp Gln Ile Val Ser His Phe Gln Arg Thr Leu
 305 310 315

<210>174

<211>507

<212>PRT

<213>Chlamydia pneumoniae

<400>174

Met Arg Tyr Asp Pro Asn Leu Ile Glu Lys Lys Trp Gln Gln Phe Trp
 1 5 10 15
 Lys Glu His Arg Ser Phe Gln Ala Asn Glu Asp Glu Asp Lys Val Lys
 20 25 30
 Tyr Tyr Val Leu Asp Met Phe Pro Tyr Pro Ser Gly Ala Gly Leu His
 35 40 45
 Val Gly His Leu Ile Gly Tyr Thr Ala Thr Asp Ile Val Ala Arg Tyr
 50 55 60
 Lys Arg Ala Arg Gly Phe Ser Val Leu His Pro Met Gly Trp Asp Ser
 65 70 75 80
 Phe Gly Leu Pro Ala Glu Gln Tyr Ala Ile Arg Thr Gly Thr His Pro
 85 90 95
 Lys Val Thr Thr Gln Lys Asn Ile Ala Asn Phe Lys Lys Gln Leu Ser
 100 105 110
 Ala Met Gly Phe Ser Tyr Asp Glu Gly Arg Glu Phe Ala Thr Ser Asp
 115 120 125
 Pro Asp Tyr Tyr His Trp Thr Gln Lys Leu Phe Leu Phe Leu Tyr Asp
 130 135 140
 Gln Gly Leu Ala Tyr Met Ala Asp Met Ala Val Asn Tyr Cys Pro Glu
 145 150 155 160

Leu Gly Thr Val Leu Ser Asn Glu Glu Val Glu Asn Gly Phe Ser Ile
 165 170 175
 Glu Gly Gly Tyr Pro Val Glu Arg Lys Met Leu Arg Gln Trp Ile Leu
 180 185 190
 Lys Ile Thr Ala Tyr Ala Asp Lys Leu Leu Glu Gly Leu Asp Ala Leu
 195 200 205
 Asp Trp Pro Glu Asn Val Lys Gln Leu Gln Lys Asn Trp Ile Gly Lys
 210 215 220
 Ser Glu Gly Ala Leu Val Thr Xaa His Leu Thr Gln Glu Gly Ser Leu
 225 230 235 240
 Glu Ala Phe Thr Thr Arg Leu Asp Thr Leu Leu Gly Val Ser Phe Leu
 245 250 255
 Val Ile Ala Pro Glu His Pro Asp Leu Asp Ser Ile Val Ser Glu Glu
 260 265 270
 Gln Arg Asp Glu Val Thr Ala Tyr Val Gln Glu Ser Leu Arg Lys Ser
 275 280 285
 Glu Arg Asp Arg Ile Ser Ser Val Lys Thr Lys Thr Gly Val Phe Thr
 290 295 300
 Gly Asn Tyr Ala Lys His Pro Ile Thr Gly Asn Leu Leu Pro Val Trp
 305 310 315 320
 Ile Ser Asp Tyr Val Val Leu Gly Tyr Gly Thr Gly Val Val Met Gly
 325 330 335
 Val Pro Ala His Asp Glu Arg Asp Arg Glu Phe Ala Glu Met Phe Ser
 340 345 350
 Leu Pro Ile His Glu Val Ile Asp Asp Asn Gly Val Cys Ile His Ser
 355 360 365
 Asn Tyr Asn Asp Phe Cys Leu Asn Gly Leu Ser Gly Gln Glu Ala Lys
 370 375 380
 Asp Tyr Val Ile Asn Tyr Leu Glu Met Arg Ser Leu Gly Arg Ala Lys
 385 390 395 400
 Thr Met Tyr Arg Leu Arg Asp Trp Leu Phe Ser Arg Gln Arg Tyr Trp
 405 410 415
 Gly Glu Pro Ile Pro Ile Ile His Phe Glu Asp Gly Thr His Arg Pro
 420 425 430
 Leu Glu Asp Asp Glu Leu Pro Leu Leu Pro Pro Asn Ile Asp Asp Tyr
 435 440 445
 Arg Pro Glu Gly Phe Gly Gln Gly Pro Leu Ala Lys Ala Gln Asp Trp
 450 455 460
 Val His Ile Tyr Asp Glu Lys Thr Gly Arg Pro Gly Cys Arg Glu Thr
 465 470 475 480
 Tyr Thr Met Pro Gln Trp Ala Gly Ser Cys Trp Tyr Tyr Leu Arg Phe
 485 490 495
 Cys Asp Ala His Asn Tyr Ser Val Ala Leu Glu
 500 505

<210>175

<211>198

<212>PRT

<213>Chlamydia pneumoniae

<400>175

Arg Arg Leu Lys Ile Gly Cys Ile Ser Thr Thr Arg Arg Gln Val Asp
 1 5 10 15
 Gln Asp Val Glu Arg Leu Ile Leu Cys His Ser Gly Gln Ala Leu Ala
 20 25 30
 Gly Ile Ile Phe Val Ser Val Met His Thr Thr Thr Gln Leu Pro Trp
 35 40 45
 Ser Lys Glu Lys Glu Ser Tyr Trp Met Pro Val Asp Leu Tyr Ile Gly
 50 55 60
 Gly Ala Glu His Ala Val Leu His Leu Leu Tyr Ser Arg Phe Trp His
 65 70 75 80
 Arg Val Phe Tyr Asp Ala Gly Leu Val Ser Thr Pro Glu Pro Phe Lys
 85 90 95
 Lys Leu Ile Asn Gln Gly Leu Val Leu Ala Ser Ser Tyr Arg Ile Pro
 100 105 110
 Gly Lys Gly Tyr Val Ser Ile Glu Asp Val Arg Glu Glu Asn Gly Thr

165 170 175
 Leu Lys Arg Leu Gly Lys Asn Tyr Phe Ser Pro Val Asp Gly Phe Leu
 180 185 190
 Leu Gln Asp Glu Val Gln Lys Gln Arg Phe Leu Ser Leu Gly Ile Pro
 195 200 205
 Glu His Lys Leu Gln Val Thr Gly Asn Ile Lys Thr Tyr Val Ala Ala
 210 215 220
 Gln Thr Ala Leu His Leu Glu Arg Glu Thr Trp Arg Asp Arg Leu Arg
 225 230 235 240
 Leu Pro Thr Asp Ser Lys Leu Val Ile Leu Gly Ser Met His Arg Ser
 245 250 255
 Asp Ala Gly Lys Trp Leu Pro Val Val Gln Lys Leu Ile Lys Glu Gly
 260 265 270
 Val Ser Val Leu Trp Val Pro Arg His Val Glu Lys Thr Lys Asp Val
 275 280 285
 Glu Glu Ser Leu His Arg Leu His Ile Pro Tyr Gly Leu Trp Ser Arg
 290 295 300
 Gly Ala Asn Phe Ser Tyr Val Pro Val Val Val Val Asp Glu Ile Gly
 305 310 315 320
 Leu Leu Lys Gln Leu Tyr Val Ala Gly Asp Leu Ala Phe Val Gly Gly
 325 330 335
 Thr Phe Asp Pro Lys Ile Gly Gly His Asn Leu Leu Glu Pro Leu Gln
 340 345 350
 Cys Glu Val Pro Leu Ile Phe Gly Pro His Ile Thr Ser Gln Ser Glu
 355 360 365
 Leu Ala Gln Arg Leu Leu Leu Ser Gly Ala Gly Leu Cys Leu Asp Glu
 370 375 380
 Ile Glu Pro Ile Ile Asp Thr Val Ser Phe Leu Leu Asn Asn Gln Glu
 385 390 395 400
 Val Arg Glu Ala Tyr Val Gln Lys Gly Lys Val Phe Val Lys Ala Glu
 405 410 415
 Thr Ala Ser Phe Asp Arg Thr Trp Arg Ala Leu Lys Ser Tyr Ile Pro
 420 425 430
 Leu Tyr Lys Asn Ser
 435

<210>178

<211>179

<212>PRT

<213>Chlamydia pneumoniae

<400>178

Leu Leu Leu Glu Asp Leu Asp Thr Asp Ser Ile Pro Trp Pro Lys Leu
 1 5 10 15
 Tyr Leu Ser Glu Asp Phe Asp Phe Ala Tyr Tyr Pro Glu Ser Lys Ala
 20 25 30
 Ile Ile Asp Thr Val Ala Lys Leu Glu Lys Asn Asn Pro Gly Glu Glu
 35 40 45
 Phe Cys Leu Glu Ser Lys Lys Ile Leu Ala Arg Tyr Leu Leu Glu Gln
 50 55 60
 Leu Phe Lys Leu Glu Thr Gly Leu Asn Phe Pro Thr Ser Thr Ile Asp
 65 70 75 80
 Gly Gly Arg Glu Ser Phe Leu Ile Glu Phe Ser His Glu Thr Lys Lys
 85 90 95
 Pro Thr Val Trp Ala Phe Ile Tyr Phe Tyr Tyr Tyr His Ser Asn Gly
 100 105 110
 Pro Lys Leu Glu Lys Asp Phe Lys Gln Ala Gly Cys Glu Val His Asn
 115 120 125
 Arg Leu Leu Asn Leu Gly Leu Lys Tyr Arg Pro Gln Ala Gly Ala Gln
 130 135 140
 Asn Asp Gly Arg Asn Gly Gly Pro Tyr Gly Pro Ile Gly Phe Leu Ile
 145 150 155 160
 Val Trp Glu Glu Asn Tyr Gly Ser Val Leu Lys Asp His Gly Phe Ile
 165 170 175
 Lys Asp Asn

<210>179

<211>115

<212>PRT

<213>Chlamydia pneumoniae

<400>179

Cys Cys Phe Gly Gly Glu Thr Ala Thr Arg Ile Phe Ser Met Thr Pro
 1 5 10 15
 Ser Gly Phe Ser Leu Ala Thr Glu Glu Lys Val Gln Val Ser Thr Ala
 20 25 30
 Glu Lys Val Ile Lys Ile Leu Ala Leu Ile Phe Phe Pro Ile Ile Leu
 35 40 45
 Ile Ala Leu Ala Ile Arg Tyr Phe Leu His Arg Lys Phe Asp Arg Lys
 50 55 60
 Cys Phe Val Ile Pro Gln Asp Thr Pro Lys Glu Leu Glu Leu Ile Leu
 65 70 75 80
 Ala Ala Asn Pro Gln Leu Val Glu Lys Ala Ala Arg Glu Val His Pro
 85 90 95
 Gly Phe Phe Ala Leu Pro Thr Lys Tyr Gln Ser Met Tyr Ile Gln Thr
 100 105 110
 Ser Lys Gly
 115

<210>180

<211>544

<212>PRT

<213>Chlamydia pneumoniae

<400>180

Thr Val Glu Leu Leu Ser Leu Asn Lys Ser Tyr Phe Glu Ile Gln Arg
 1 5 10 15
 Leu Arg Tyr Arg Pro Glu Ile Leu Thr Leu Leu Glu Thr Ile Arg Ser
 20 25 30
 Lys His Ile Gln Glu Thr Ser Ser Pro Pro Ser Pro Pro Pro Glu Leu
 35 40 45
 Gln Lys His Ile Pro Asn Leu Cys Arg Ile Pro Glu Val Ser Ile Tyr
 50 55 60
 Thr Glu Gln Glu Thr Ser Ser Lys Pro Leu Lys Ile Gly Val Leu Leu
 65 70 75 80
 Ser Gly Gly Gln Ala Pro Gly Gly His Asn Val Val Ile Gly Leu Phe
 85 90 95
 Asp Ala Leu Arg Val Phe Asn Pro Lys Thr Arg Leu Phe Gly Phe Ile
 100 105 110
 Lys Gly Pro Leu Gly Leu Thr Arg Gly Leu Tyr Lys Asp Leu Asp Ile
 115 120 125
 Ser Val Ile Tyr Asp Tyr Tyr Asn Met Gly Gly Phe Asp Met Leu Ser
 130 135 140
 Ser Ser Arg Glu Lys Ile Lys Thr Glu Glu Gln Lys Lys Asn Ile Leu
 145 150 155 160
 Asn Thr Val Lys Gln Leu Lys Leu Asp Gly Leu Leu Ile Ile Gly Gly
 165 170 175
 Asn Asn Ser Asn Thr Asp Thr Ala Met Leu Ala Glu Tyr Phe Leu Ala
 180 185 190
 His Asn Cys Lys Thr Ser Val Ile Gly Val Pro Lys Thr Ile Asp Gly
 195 200 205
 Asp Leu Lys Asn Cys Trp Ile Glu Thr Ser Leu Gly Phe His Thr Ser
 210 215 220
 Cys Arg Thr Tyr Ser Glu Met Ile Gly Asn Leu Ala Lys Asp Ala Leu
 225 230 235 240
 Ser Ala Lys Lys Tyr His His Phe Ile Arg Leu Met Gly Gln Gln Ala
 245 250 255
 Ser Tyr Thr Thr Leu Glu Cys Gly Leu Gln Thr Leu Pro Asn Ile Ala
 260 265 270
 Leu Ile Ser Glu Leu Ile Ala Thr Arg Lys Ile Ser Leu Lys Gln Leu
 275 280 285
 Ser Glu Gln Leu Ala Leu Gly Leu Val Arg Arg Tyr Lys Ser Gly Lys
 290 295 300

Asn Tyr Ser Thr Val Leu Ile Pro Glu Gly Leu Ile Glu His Ile Phe
 305 310 315 320
 Asp Thr Arg Lys Leu Ile Asp Glu Leu Asn Val Leu Leu Ala Asn Gly
 325 330 335
 Asp Ser Ser Met Lys Asn Ser Phe Gln Ala Leu Ser Arg Asp Ile Lys
 340 345 350
 Thr Phe His Leu Phe Pro Lys Asp Ile Ala Asn Gln Leu Leu Leu Ala
 355 360 365
 Arg Asp Ser His Gly Asn Val Arg Val Ser Lys Ile Ala Thr Glu Glu
 370 375 380
 Leu Leu Ala Val Met Val Lys Lys Glu Ile Glu Lys Ile Lys Pro His
 385 390 395 400
 Met Glu Phe His Ser Val Ser His Phe Phe Gly Tyr Glu Ala Arg Ala
 405 410 415
 Gly Phe Pro Ser Asn Phe Asp Cys Asn Tyr Gly Ile Ala Leu Gly Ile
 420 425 430
 Ile Ser Ala Leu Phe Leu Val Arg Gln Lys Thr Gly Tyr Met Ile Thr
 435 440 445
 Ile Asn Asn Leu Ala Gln Ser Tyr Thr Glu Trp Gln Gly Gly Ala Thr
 450 455 460
 Pro Leu Tyr Lys Met Met His Leu Glu Asn Arg Cys Gly Thr Glu Thr
 465 470 475 480
 Pro Val Ile Lys Thr Asp Ser Val Asp Pro Lys Ser Pro Ala Val Gln
 485 490 495
 His Leu Leu Gln Gln Ser Asp Ser Cys Leu Val Glu Asp Leu Tyr Arg
 500 505 510
 Phe Pro Gly Pro Leu Gln Tyr Phe Gly Lys Glu Glu Leu Ile Asp Gln
 515 520 525
 Arg Pro Leu Thr Leu Leu Trp Glu Asn Gln Thr His Ser Pro Leu Leu
 530 535 540

<210>181

<211>275

<212>PRT

<213>Chlamydia pneumoniae

<400>181

Leu Ile Thr Gly Val Val Leu Glu Lys His Glu Gln Arg Thr Met Phe
 1 5 10 15
 Ser Leu Thr Leu Leu Asn Asn Phe Thr Thr Phe Gly Leu Leu His Thr
 20 25 30
 Pro Leu His Tyr Asn Pro Pro Tyr Pro Ile Val Ile Leu Leu His Gly
 35 40 45
 Leu Ala Ser Asp Lys Thr Gly Ser Lys Arg Ser His Val Arg Leu Ala
 50 55 60
 Gln Glu Leu Thr Arg Leu Gly Ile Ala Ala Leu Arg Val Asp Leu Leu
 65 70 75 80
 Gly His Gly Asp Cys Glu Gly Glu Leu Met Asp Phe Ser Leu Glu Asn
 85 90 95
 Tyr Lys Gln Asn Ile Arg Glu Ile Ile Glu Tyr Thr His Ser Leu Leu
 100 105 110
 His Ile Asp Gln Glu Arg Leu Ala Ile Phe Gly Ser Ser Leu Gly Gly
 115 120 125
 Thr Leu Ala Leu Gln Thr Leu Pro Phe Phe Asn Lys Ile Lys Ala Leu
 130 135 140
 Ala Val Trp Ala Pro Thr Ile Ser Gly Glu Leu Met Ala Ala Glu Ala
 145 150 155 160
 Gln Lys Asn Ala Pro Glu Val Ile Thr Met Ser Gln Lys Gly Ala Ile
 165 170 175
 Thr Tyr Ala Gly Met Thr Leu Asn Pro Asp Phe Tyr Thr Gln Phe Leu
 180 185 190
 Lys Ile Asp Ile Val Lys Glu Leu Met Pro Ser Ala Arg Asn Leu Pro
 195 200 205
 Pro Ile Leu Tyr Met Gln Gly Glu Gln Asp Leu Leu Val Ser Ile Asn
 210 215 220
 His Arg Thr Leu Phe Thr Glu Ala Phe Ala Asn Gln Asp Lys Pro Ile

225 230 235 240
 Thr Ile Leu Thr Tyr Pro Asp Val Asp His Ala Phe Pro Phe Ala Glu
 245 250 255
 Ser Ser Ala Leu Ser Asp Leu Thr Gln Trp Leu Lys Arg Glu Leu Thr
 260 265 270
 Ser Gly Glu
 275

<210>182

<211>242

<212>PRT

<213>Chlamydia pneumoniae

<400>182

Phe Val Tyr Thr Leu Tyr Asn Ile Gln Ser Pro Phe Arg Ile Met Lys
 1 5 10 15
 Leu Tyr Ser Ile Ser Ser Asp Val Asp Thr Pro Trp Ile Phe Gln Leu
 20 25 30
 Met Ser Lys Val Asp Ser Tyr Leu Phe Leu Gly Gly Asn Arg Ile Lys
 35 40 45
 Val Val Ser Ile Val Met Gln Glu Pro Asn Leu Ile Ile Gly Lys Val
 50 55 60
 Glu Asn Val Arg Ile Ser Thr Ile Val Lys Ile Leu Lys Ile Leu Ser
 65 70 75 80
 Phe Leu Ile Phe Pro Leu Ile Leu Ile Ala Leu Ala Leu His Tyr Phe
 85 90 95
 Leu His Ala Lys Tyr Ala Asn His Leu Leu Val Ser Xaa Ile Leu Glu
 100 105 110
 Arg Ala Pro Gln Tyr Val Pro Ile Pro Gly Arg Ser Gly Xaa Thr Ala
 115 120 125
 Ser His Tyr Lys Leu Thr Thr Leu Val Pro Val Ser Gln Lys Asn Leu
 130 135 140
 Gln Ala Met Gly Ser Asn Pro Leu Xaa Val Glu Ala Ala Leu Arg Thr
 145 150 155 160
 Thr Lys Pro Ser Phe Phe Cys Val Pro Ala Lys Tyr Arg Gln Ile Ile
 165 170 175
 Ile Ser Ser His Gly Ile Arg Phe Ser Leu Asp Leu Glu Gln Leu Ala
 180 185 190
 Asp Asp Ile Asn Leu Asp Ser Val Ser Trp Pro Thr Glu Tyr Leu Asn
 195 200 205
 Ser Thr Met Asp Phe Cys Ser Lys Ala Asp Lys Arg Val Ile Gln Asn
 210 215 220
 Val Gln Asn Leu Arg Thr Gly Thr Tyr Ile Asn Ser Val Gly Lys Arg
 225 230 235 240
 Ser Phe

<210>183

<211>188

<212>PRT

<213>Chlamydia pneumoniae

<400>183

Phe Glu Lys Ala Ile Val Tyr Cys Ile Lys Cys Lys Gln Ile Ile Lys
 1 5 10 15
 Cys Ile Ser Ile Ile His Thr Pro Thr Pro Ala Thr Pro Leu Cys Thr
 20 25 30
 Glu Gly Glu Ile Phe Pro Gly Leu Val Asp Ser Ala Ile Gln Asn Asp
 35 40 45
 Leu Glu Arg Leu Leu Thr Val Lys Lys Arg Pro Asp Ile Ile Arg Glu
 50 55 60
 Tyr Leu Arg Ala Gly Gly Ser Leu Val Thr Thr Tyr Pro Lys Glu Gly
 65 70 75 80
 Gln Arg Leu Arg Ser Pro Glu Gln Leu Arg Val Leu Asp Asp Leu Val
 85 90 95
 Gln Ser Tyr Pro Asn His Leu His Ala Ile Glu Leu Asp Cys Gly Ala
 100 105 110
 Ile Pro Gln Asp Leu Ile Gly Ala Thr Tyr Ile Ile Thr Phe Ala Asp

115 120 125
 Phe Ser Thr Tyr Ile Leu Ser Leu Arg Ser Tyr Gln Ala Asn Ser Pro
 130 135 140
 Ser Asp Asp Thr Trp Gly Ile Trp Phe Gly Ser Ile Asp Asp Pro Val
 145 150 155 160
 Gln Ala Val Ile Ser Phe Leu Lys Asp His Gly Phe Ala Leu Pro Ser
 165 170 175
 Thr Leu Ala Gln Asp Pro Leu Leu Cys Thr Asn Lys
 180 185

<210>184

<211>185

<212>PRT

<213>Chlamydia pneumoniae

<400>184

Leu Cys Phe Lys Cys Ile Tyr Ile Lys Ile Ile Phe Ser Phe Leu Lys
 1 5 10 15
 Gln Leu Met Thr Arg Ser Thr Ile Glu Ser Ser Asp Ser Leu Cys Ser
 20 25 30
 Arg Ser Phe Ser Gln Lys Leu Ser Val Gln Thr Leu Lys Asn Leu Cys
 35 40 45
 Glu Ser Arg Leu Met Lys Ile Thr Ser Leu Val Ile Ala Phe Leu Thr
 50 55 60
 Leu Ile Val Gly Gly Ala Leu Ile Ala Leu Ala Gly Gly Gly Val Leu
 65 70 75 80
 Ser Phe Pro Leu Gly Leu Ile Leu Gly Ser Val Leu Val Leu Phe Ser
 85 90 95
 Ser Ile Tyr Leu Val Ser Cys Cys Lys Phe Phe Thr Leu Lys Glu Met
 100 105 110
 Thr Met Thr Cys Ser Val Lys Ser Lys Ile Asn Ile Trp Phe Glu Lys
 115 120 125
 Gln Arg Asn Lys Asp Ile Glu Lys Ala Leu Glu Asn Pro Asp Leu Xaa
 130 135 140
 Gly Glu Asn Lys Arg Asn Val Gly Asn Arg Ser Ala Arg Asn Gln Leu
 145 150 155 160
 Glu Met Ile Leu His Glu Thr Asp Gly Ile Ile Leu Lys Arg Tyr Met
 165 170 175
 Lys Gly Ala Lys Met Tyr Phe Tyr Leu
 180 185

<210>185

<211>200

<212>PRT

<213>Chlamydia pneumoniae

<400>185

Asn Val Leu Leu Phe Met Asn Trp Val Pro Lys Thr Ile Asp His Val
 1 5 10 15
 Asp Pro Glu Ser Glu Ile Asp Ile Arg Lys Val Val Ser Cys Tyr Lys
 20 25 30
 Leu Ile Lys Glu Cys Gln Pro Glu Phe Arg Ser Leu Ile Ser Glu Leu
 35 40 45
 Leu Gly Val Ile Arg Cys Gly Leu Arg Leu Leu Lys Arg Ser Lys Tyr
 50 55 60
 Gln Glu Gln Ala Arg Thr Val Ser Asp Glu Asp Ala Pro Leu Phe Cys
 65 70 75 80
 Leu Thr Arg Ser Tyr Tyr Gln Asp Gly Tyr Leu Thr Pro Leu Arg Ala
 85 90 95
 Gly Pro Arg Asp Leu Ile Asn His Tyr Ile His Leu Arg Arg Arg Glu
 100 105 110
 Asn Pro Lys His Phe Phe Ser Pro Lys His Pro Cys Tyr Tyr Ala Arg
 115 120 125
 Leu Ala Phe Asn Glu Ser Val Cys Val Tyr Arg Glu Leu Phe Asp Ile
 130 135 140
 Glu Arg Leu Thr Lys Met Tyr Val Glu Gly Asp Tyr Ser Lys Glu Gln
 145 150 155 160
 Glu Lys Asn Leu Gln Ala Ile Leu Ser Phe Val Lys Thr Leu Asp Glu

165 170 175
 Gly Lys Asp Phe Leu Ile Glu His Lys Asp Thr Asp Leu Ile Gly Arg
 180 185 190
 Gly Phe Thr Asp Val Phe Cys Thr
 195 200
 <210>186
 <211>111
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>186
 Asn Leu Trp Ser His Phe Pro Arg Gly Phe Phe Met Leu Pro Phe Cys
 1 5 10 15
 Pro Thr Ile Leu Leu Ala Lys Pro Phe Leu Asn Ser Glu Asn Tyr Gly
 20 25 30
 Leu Glu Arg Leu Ala Ala Thr Val Asp Ser Tyr Phe Asp Leu Gly Gln
 35 40 45
 Ser Gln Ile Val Phe Leu Ser Lys Gln Asp Gln Gly Ile Thr Val Glu
 50 55 60
 Glu Leu Ser Ala Lys Asp Arg Lys Phe Lys Pro Gly Ser Met Asn Cys
 65 70 75 80
 Thr Leu Tyr Thr Glu Asp Pro Ile Leu Pro Ala His Asn Ser Phe Ser
 85 90 95
 Asn Cys Ser Asp Ile Gln Met Arg Thr Pro Ile Ser Pro Ile His
 100 105 110
 <210>187
 <211>276
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>187
 Ser Phe His Ile Glu Phe Thr Ile Gly Glu Asn Asn Met Lys Asn Val
 1 5 10 15
 Gly Ser Glu Cys Ser Gln Pro Leu Val Met Glu Leu Asn Thr Gln Pro
 20 25 30
 Leu Arg Asn Leu Cys Glu Ser Arg Leu Val Lys Ile Thr Ser Phe Val
 35 40 45
 Ile Ala Leu Leu Ala Leu Val Gly Gly Ile Thr Leu Thr Ala Leu Ala
 50 55 60
 Gly Ala Gly Ile Leu Ser Phe Leu Pro Trp Leu Val Leu Gly Ile Val
 65 70 75 80
 Leu Val Val Leu Cys Ala Leu Phe Leu Leu Phe Ser Tyr Lys Phe Cys
 85 90 95
 Pro Ile Lys Glu Leu Gly Val Val Tyr Asn Thr Asp Ser Gln Ile His
 100 105 110
 Gln Trp Phe Gln Lys Gln Arg Asn Lys Asp Leu Glu Lys Ala Thr Glu
 115 120 125
 Asn Pro Glu Leu Phe Gly Glu Asn Arg Ala Glu Asp Asn Asn Arg Ser
 130 135 140
 Ala Arg Ser Gln Val Lys Glu Thr Leu Arg Asp Cys Asp Gly Asn Val
 145 150 155 160
 Leu Lys Lys Ile Tyr Glu Arg Asn Leu Asp Val Leu Leu Phe Met Asn
 165 170 175
 Trp Val Pro Lys Thr Met Asp Asp Val Asp Pro Val Ser Glu Asp Ser
 180 185 190
 Ile Arg Thr Val Ile Ser Cys Tyr Lys Leu Ile Lys Ala Cys Lys Pro
 195 200 205
 Glu Phe Arg Ser Leu Ile Ser Glu Leu Leu Arg Ala Met Gln Ser Gly
 210 215 220
 Leu Gly Leu Leu Ser Arg Cys Ser Arg Tyr Gln Glu Arg Ala Lys Thr
 225 230 235 240
 Val Ser His Lys Asp Ala Pro Leu Phe Cys Pro Thr His Ser Tyr Tyr
 245 250 255
 Arg Asp Gly Tyr Leu Thr Pro Leu Arg Ala Gly Pro Arg Tyr Ile Ile
 260 265 270
 Asn Arg Ala Ile

275

<210>188

<211>358

<212>PRT

<213>Chlamydia pneumoniae

<400>188

Asn Val Arg Lys Asn His Ile Ile Arg Gly Glu Lys Tyr Asn Thr Cys
 1 5 10 15
 Thr Val Ile Ala Phe Val Leu Ser Met Ser Tyr Asp Thr Leu Phe Lys
 20 25 30
 Asn Leu Glu Lys Glu Asp Ser Val His Lys Ile Cys Asn Glu Ile Phe
 35 40 45
 Ala Leu Val Pro Arg Leu Asn Thr Ile Ala Cys Thr Glu Ala Ile Ile
 50 55 60
 Lys Asn Leu Pro Lys Ala Asp Ile His Val His Leu Pro Gly Thr Ile
 65 70 75 80
 Thr Pro Gln Leu Ala Trp Ile Leu Gly Val Lys Asn Gly Phe Leu Lys
 85 90 95
 Trp Ser Tyr Asn Ser Trp Thr Asn His Arg Leu Leu Ser Pro Lys Asn
 100 105 110
 Pro His Lys Gln Tyr Ser Asn Ile Phe Arg Asn Phe Gln Asp Ile Cys
 115 120 125
 His Glu Lys Asp Pro Asp Leu Ser Val Leu Gln Tyr Asn Ile Leu Asn
 130 135 140
 Tyr Asp Phe Asn Ser Phe Asp Arg Val Met Ala Thr Val Gln Gly His
 145 150 155 160
 Arg Phe Pro Pro Gly Gly Ile Gln Asn Glu Glu Asp Leu Leu Leu Ile
 165 170 175
 Phe Asn Asn Tyr Leu Gln Gln Cys Leu Asp Asp Thr Ile Val Tyr Thr
 180 185 190
 Glu Val Gln Gln Asn Ile Arg Leu Ala His Val Leu Tyr Pro Ser Leu
 195 200 205
 Pro Glu Lys His Ala Arg Met Lys Phe Tyr Gln Ile Leu Tyr Arg Ala
 210 215 220
 Ser Gln Thr Phe Ser Lys His Gly Ile Thr Leu Arg Phe Leu Asn Cys
 225 230 235 240
 Phe Asn Lys Thr Phe Ala Pro Gln Ile Asn Thr Gln Glu Pro Ala Gln
 245 250 255
 Glu Ala Val Gln Trp Leu Gln Glu Val Asp Ser Thr Phe Pro Gly Leu
 260 265 270
 Phe Val Gly Ile Gln Ser Ala Gly Ser Glu Ser Ala Pro Gly Ala Cys
 275 280 285
 Pro Lys Arg Leu Ala Ser Gly Tyr Arg Asn Ala Tyr Asp Ser Gly Phe
 290 295 300
 Gly Cys Ala Ala His Ala Gly Glu Gly Ile Glu Thr Arg Thr Ile Phe
 305 310 315 320
 Ser Ser Ala Lys Val Asn Pro Glu Gly Leu Ile Glu Ile Thr Arg Val
 325 330 335
 Thr Phe Ser Ser Leu Lys Arg Lys Gln Pro Ser Ser Leu Pro Ile Arg
 340 345 350
 Val Thr Cys Gln Leu Gly
 355

<210>189

<211>429

<212>PRT

<213>Chlamydia pneumoniae

<400>189

Leu Gln Ser Ala Arg Arg His Leu Asn Thr Ile Phe Ile Leu Asp Phe
 1 5 10 15
 Gly Ser Gln Tyr Thr Tyr Val Leu Ala Lys Gln Val Arg Lys Leu Phe
 20 25 30
 Val Tyr Cys Glu Val Leu Pro Trp Asn Ile Ser Val Gln Cys Leu Lys
 35 40 45
 Glu Arg Ala Pro Leu Gly Ile Ile Leu Ser Gly Gly Pro His Ser Val

50	55	60																	
Tyr	Glu	Asn	Lys	Ala	Pro	His	Leu	Asp	Pro	Glu	Ile	Tyr	Lys	Leu	Gly				
65					70					75					80				
Ile	Pro	Ile	Leu	Ala	Ile	Cys	Tyr	Gly	Met	Gln	Leu	Met	Ala	Arg	Asp				
				85					90					95					
Phe	Gly	Gly	Thr	Val	Ser	Pro	Gly	Val	Gly	Glu	Phe	Gly	Tyr	Thr	Pro				
			100					105					110						
Ile	His	Leu	Tyr	Pro	Cys	Glu	Leu	Phe	Lys	His	Ile	Val	Asp	Cys	Glu				
		115					120					125							
Ser	Leu	Asp	Thr	Glu	Ile	Arg	Met	Ser	His	Arg	Asp	His	Val	Thr	Thr				
	130					135					140								
Ile	Pro	Glu	Gly	Phe	Asn	Val	Ile	Ala	Ser	Thr	Ser	Gln	Cys	Ser	Ile				
145					150					155				160					
Ser	Gly	Ile	Glu	Asn	Thr	Lys	Gln	Arg	Leu	Tyr	Gly	Leu	Gln	Phe	His				
				165					170					175					
Pro	Glu	Val	Ser	Asp	Ser	Thr	Pro	Thr	Gly	Asn	Lys	Ile	Leu	Glu	Thr				
			180					185					190						
Phe	Val	Gln	Glu	Ile	Cys	Ser	Ala	Pro	Thr	Leu	Trp	Asn	Pro	Leu	Tyr				
	195						200					205							
Ile	Gln	Gln	Asp	Leu	Val	Ser	Lys	Ile	Gln	Asp	Thr	Val	Ile	Glu	Val				
	210					215					220								
Phe	Asp	Glu	Val	Ala	Gln	Ser	Leu	Asp	Val	Gln	Trp	Leu	Ala	Gln	Gly				
225					230				235					240					
Thr	Ile	Tyr	Ser	Asp	Val	Ile	Glu	Ser	Ser	Arg	Ser	Gly	His	Ala	Ser				
				245				250					255						
Glu	Val	Ile	Lys	Ser	His	His	Asn	Val	Gly	Gly	Leu	Pro	Lys	Asn	Leu				
			260					265					270						
Lys	Leu	Lys	Leu	Val	Glu	Pro	Leu	Arg	Tyr	Leu	Phe	Lys	Asp	Glu	Val				
	275						280					285							
Arg	Ile	Leu	Gly	Glu	Ala	Leu	Gly	Leu	Ser	Ser	Tyr	Leu	Leu	Asp	Arg				
	290					295					300								
His	Pro	Phe	Pro	Gly	Pro	Gly	Leu	Thr	Ile	Arg	Val	Ile	Gly	Glu	Ile				
305					310					315				320					
Leu	Pro	Glu	Tyr	Leu	Ala	Ile	Leu	Arg	Arg	Ala	Asp	Leu	Ile	Phe	Ile				
				325				330					335						
Glu	Glu	Leu	Arg	Lys	Ala	Lys	Leu	Tyr	Asp	Lys	Ile	Ser	Gln	Ala	Phe				
			340					345					350						
Ala	Leu	Phe	Leu	Pro	Ile	Lys	Ser	Val	Ser	Val	Lys	Gly	Asp	Cys	Arg				
	355						360					365							
Ser	Tyr	Gly	Tyr	Thr	Ile	Ala	Leu	Arg	Ala	Val	Glu	Ser	Thr	Asp	Phe				
	370				375						380								
Met	Thr	Gly	Arg	Trp	Ala	Tyr	Leu	Pro	Cys	Asp	Val	Leu	Ser	Ser	Cys				
385					390				395					400					
Ser	Ser	Arg	Ile	Ile	Asn	Glu	Ile	Pro	Glu	Val	Ser	Arg	Val	Val	Tyr				
			405					410					415						
Asp	Ile	Ser	Asp	Lys	Pro	Pro	Ala	Thr	Ile	Glu	Trp	Glu							
			420					425											

<210>190

<211>266

<212>PRT

<213>Chlamydia pneumoniae

<400>190

Ala	Pro	Ile	Gly	Ala	Ala	Ile	Gly	Ile	Gly	Pro	Leu	Gly	Ile	Ser	Arg
1				5					10					15	
Ala	His	His	Leu	Val	Glu	Ala	Gly	Ala	Asn	Val	Leu	Val	Ile	Asp	Thr
			20					25					30		
Ala	His	Ala	His	Ser	Lys	Gly	Val	Phe	Gln	Thr	Val	Leu	Glu	Ile	Lys
			35				40					45			
Ser	Gln	Phe	Pro	Gln	Ile	Ser	Leu	Val	Val	Gly	Asn	Leu	Val	Thr	Ala
	50					55				60					
Glu	Ala	Ala	Val	Ser	Leu	Ala	Glu	Ile	Gly	Val	Asp	Ala	Val	Lys	Val
65					70				75					80	
Gly	Ile	Gly	Pro	Gly	Ser	Ile	Cys	Thr	Thr	Arg	Ile	Val	Ser	Gly	Val
				85					90					95	

Gly Tyr Pro Gln Ile Thr Ala Ile Thr Asn Val Ala Lys Ala Leu Lys
 100 105 110
 Asn Ser Ala Val Thr Val Ile Ala Asp Gly Arg Ile Arg Tyr Ser Gly
 115 120 125
 Asp Val Val Lys Ala Leu Ala Ala Gly Ala Asp Cys Val Met Leu Gly
 130 135 140
 Ser Leu Leu Ala Gly Thr Asp Glu Ala Pro Gly Asp Ile Val Ser Ile
 145 150 155 160
 Asp Glu Lys Leu Phe Lys Arg Tyr Arg Gly Met Gly Ser Leu Gly Ala
 165 170 175
 Met Lys Gln Gly Ser Ala Asp Arg Tyr Phe Gln Thr Gln Gly Gln Lys
 180 185 190
 Lys Leu Val Pro Gly Gly Val Glu Gly Leu Val Ala Tyr Lys Gly Ser
 195 200 205
 Val His Asp Val Leu Tyr Gln Ile Leu Gly Gly Ile Arg Ser Gly Met
 210 215 220
 Gly Tyr Val Gly Ala Glu Thr Leu Lys Asp Leu Lys Thr Lys Ala Ser
 225 230 235 240
 Phe Val Arg Ile Thr Glu Ser Gly Arg Ala Glu Ser His Ile His Asn
 245 250 255
 Ile Tyr Lys Val Gln Pro Thr Leu Asn Tyr
 260 265

<210>191

<211>170

<212>PRT

<213>Chlamydia pneumoniae

<400>191

Lys Ile Phe Ile Trp Phe Val Glu Lys Ile Val Ile Leu Ser Met Ile
 1 5 10 15
 Met Thr Thr Ile Ser Asn Ser Pro Ser Pro Ala Leu Asn Pro Glu Leu
 20 25 30
 Ser Leu Ile Pro Pro Thr Leu Val Ser Ser Gly Thr Gln Thr Ser
 35 40 45
 Leu Ala Tyr Thr Ile Pro Ala Gln Gly Arg Arg Ser Thr Leu Arg Ile
 50 55 60
 Ile Leu Asp Ile Phe Ile Ile Ile Leu Gly Leu Ala Thr Ile Ile Ser
 65 70 75 80
 Thr Phe Ile Val Ile Phe Phe Leu Asn Gly Leu Asn Leu Leu Ser Thr
 85 90 95
 Pro Ser Ile Ile Ser Ser Ser Cys Leu Ile Ile Val Gly Leu Leu Phe
 100 105 110
 Leu Ile Met Gly Leu Tyr Phe Met Ile Ser Ser Leu Asp Gln Gly Leu
 115 120 125
 Val Gly Leu Leu Gln Lys Glu Leu Ser Gln Ala Glu Glu Arg Glu Glu
 130 135 140
 Glu Tyr Ile Gln Glu Ile Glu Ala Leu Arg Gly Ala Pro Arg Ala Glu
 145 150 155 160
 Ser Pro Thr Glu Ser Pro Ser Thr Trp Leu
 165 170

<210>192

<211>140

<212>PRT

<213>Chlamydia pneumoniae

<400>192

Leu Leu Leu Ala Cys Phe Gln Phe Leu Leu Arg Arg Arg Asp Met Glu
 1 5 10 15
 Gln Pro Asn Cys Val Ile Gln Asp Thr Thr Thr Val Leu Tyr Ala Leu
 20 25 30
 Asn Ser Phe Asp Pro Arg Leu Ser Asp Asp Thr His Arg Leu Gly Lys
 35 40 45
 Gln Ser Pro Leu Glu Ala Glu Asn Ala Leu Gly Glu Phe Ile Glu Gly
 50 55 60
 Leu Asp Thr Asn Ser Phe Pro Leu Glu Glu Val Ala Ile Pro Ile Leu
 65 70 75 80

405

410

415

<210>194

<211>303

<212>PRT

<213>Chlamydia pneumoniae

<400>194

Val Gly Gln Lys Arg Ala Asn Xaa Ser Lys Phe Ile Phe Leu Ile Ser
 1 5 10 15
 Glu Glu Ser Met Lys Gln Pro Met Ser Leu Ile Phe Ser Ser Val Cys
 20 25 30
 Leu Gly Leu Gly Leu Gly Ser Leu Ser Ser Cys Asn Gln Lys Pro Ser
 35 40 45
 Trp Asn Tyr His Asn Thr Ser Thr Ser Glu Glu Phe Phe Val His Gly
 50 55 60
 Asn Lys Ser Val Ser Gln Leu Pro His Tyr Pro Ser Ala Phe Arg Thr
 65 70 75 80
 Thr Gln Ile Phe Ser Glu Glu His Asn Asp Pro Tyr Val Val Ala Lys
 85 90 95
 Thr Asp Glu Glu Ser Arg Lys Ile Trp Arg Glu Ile His Lys Asn Leu
 100 105 110
 Lys Ile Lys Gly Ser Tyr Ile Pro Ile Ser Thr Tyr Gly Ser Leu Met
 115 120 125
 His Pro Lys Ser Ala Ala Leu Thr Leu Lys Thr Tyr Arg Pro His Pro
 130 135 140
 Ile Trp Ile Asn Gly Tyr Glu Arg Ser Phe Asn Ile Asp Thr Gly Lys
 145 150 155 160
 Tyr Leu Lys Asn Gly Ser Arg Arg Arg Thr Ser His Asp Gly Pro Lys
 165 170 175
 Asn Arg Ala Val Leu Asn Leu Ile Lys Ser Ser Gly Arg Arg Cys Asn
 180 185 190
 Ala Ile Gly Leu Glu Met Thr Glu Glu Asp Phe Val Ile Ala Arg Arg
 195 200 205
 Arg Glu Gly Val Tyr Ser Leu Tyr Pro Val Glu Val Cys Ser Tyr Pro
 210 215 220
 Gln Gly Asn Pro Phe Val Ile Ala Tyr Ala Trp Ile Ala Asp Glu Ser
 225 230 235 240
 Ala Cys Ser Lys Glu Val Leu Pro Val Lys Gly Tyr Tyr Ser Leu Val
 245 250 255
 Trp Glu Ser Val Ser Ser Ser Asp Ser Leu Asn Ala Phe Gly Asp Ser
 260 265 270
 Phe Ala Glu Asp Tyr Leu Arg Ser Thr Phe Leu Ala Asn Gly Thr Ser
 275 280 285
 Ile Leu Cys Val His Glu Ser Tyr Lys Lys Val Pro Pro Gln Pro
 290 295 300

<210>195

<211>88

<212>PRT

<213>Chlamydia pneumoniae

<400>195

Val Lys Glu Tyr Leu Asp Phe Leu Val Gln Arg Asn Val Glu Arg Asp
 1 5 10 15
 Pro Gln Thr Lys Arg His Cys Thr Val Ser Gln Lys Phe Gly Gly Glu
 20 25 30
 Ser Ile Asp Ala Lys Thr Thr Thr Gly Gln Leu Phe His Ile Ala Gly
 35 40 45
 Lys Thr Glu Pro Gly His Gly Lys Leu Cys Leu Gly Glu Ser Ile Leu
 50 55 60
 Lys Gln Leu Leu Ala Leu Gly Ile Ile Thr Gly Tyr Glu Asn Arg Glu
 65 70 75 80
 Arg Glu Val Trp Val Tyr Leu Asp
 85

<210>196

<211>203

<212>PRT

<213>Chlamydia pneumoniae

<400>196

Thr Ser Leu His Lys Ile Leu Asp Cys Lys Tyr Lys Pro Val Phe Ile
 1 5 10 15
 Gln Asn Thr Val Ala Ser Glu Thr Tyr Pro Ser Gln Ile Leu His Ala
 20 25 30
 Gln Arg Glu Val Arg Asp Ala Tyr Phe Asn Gln Ala Asp Cys His Pro
 35 40 45
 Ala Arg Ala Asn Gln Ile Leu Glu Ala Lys Lys Ile Cys Leu Leu Asp
 50 55 60
 Val Tyr His Thr Asn His Tyr Ser Val Phe Thr Phe Cys Val Asp Asn
 65 70 75 80
 Tyr Pro Asn Leu Arg Phe Thr Phe Val Ser Ser Lys Asn Asn Glu Met
 85 90 95
 Asn Gly Leu Ser Asn Pro Leu Asp Asn Val Leu Val Glu Ala Met Val
 100 105 110
 Arg Arg Thr His Ala Arg Asn Leu Leu Ala Ala Cys Lys Ile Arg Asn
 115 120 125
 Ile Glu Val Pro Arg Val Val Gly Leu Asp Leu Arg Ser Gly Ile Leu
 130 135 140
 Ile Ser Lys Leu Glu Leu Lys Gln Pro Gln Phe Gln Ser Leu Thr Glu
 145 150 155 160
 Asp Phe Val Asn His Ser Thr Asn Gln Glu Glu Ala Arg Val His Gln
 165 170 175
 Lys His Val Leu Leu Ile Ser Leu Ile Leu Leu Cys Lys Gln Ala Ala
 180 185 190
 Leu Glu Ser Phe Gln Glu Lys Lys Arg Ser Ser
 195 200

<210>197

<211>454

<212>PRT

<213>Chlamydia pneumoniae

<400>197

Met Lys Lys Val Leu Ile Ala Asn Arg Gly Glu Ile Ala Val Arg Ile
 1 5 10 15
 Ile Arg Ala Cys His Asp Leu Gly Leu Ser Thr Val Ala Val Tyr Ser
 20 25 30
 Leu Ala Asp Gln Glu Ala Leu His Val Leu Leu Ala Asp Glu Ala Ile
 35 40 45
 Cys Ile Gly Glu Pro Gln Ala Ala Lys Ser Tyr Leu Lys Ile Ser Asn
 50 55 60
 Ile Leu Ala Ala Cys Glu Ile Thr Gly Ala Asp Ala Val His Pro Gly
 65 70 75 80
 Tyr Gly Phe Leu Ser Glu Asn Ala Asn Phe Ala Ser Ile Cys Glu Ser
 85 90 95
 Cys Gly Leu Thr Phe Ile Gly Pro Ser Ser Glu Ser Ile Ala Met Met
 100 105 110
 Gly Asp Lys Ile Ala Ala Lys Ser Leu Ala Lys Lys Ile Lys Cys Pro
 115 120 125
 Val Ile Pro Gly Ser Glu Gly Ile Ile Glu Asp Glu Ser Glu Gly Leu
 130 135 140
 Lys Ile Ala Glu Lys Ile Gly Phe Pro Ile Val Ile Lys Ala Val Ala
 145 150 155 160
 Gly Gly Gly Gly Arg Gly Ile Arg Ile Val Lys Glu Lys Asp Glu Phe
 165 170 175
 Tyr Arg Ala Phe Ser Ala Ala Arg Ala Glu Ala Glu Ala Gly Phe Asn
 180 185 190
 Asn Pro Asn Val Tyr Ile Glu Lys Phe Ile Glu Asn Pro Arg His Leu
 195 200 205
 Glu Ile Gln Val Ile Gly Asp Thr His Gly Asn Tyr Val His Leu Gly
 210 215 220
 Glu Arg Asp Cys Thr Ile Gln Arg Arg Arg Gln Lys Leu Ile Glu Glu
 225 230 235 240
 Thr Pro Ser Pro Ile Leu Asn Ala Glu Ile Arg Val Lys Val Gly Lys

245 250 255
 Val Ala Val Asp Leu Ala Arg Ser Ala Gly Tyr Phe Ser Val Gly Thr
 260 265 270
 Val Glu Phe Leu Leu Asp Lys Asp Lys Lys Phe Tyr Phe Met Glu Met
 275 280 285
 Asn Thr Arg Ile Gln Val Glu His Thr Ile Thr Glu Glu Val Thr Gly
 290 295 300
 Ile Asp Leu Val Lys Glu Gln Ile His Val Ala Met Gly Asn Lys Leu
 305 310 315 320
 Pro Trp Lys Gln Lys Asn Ile Glu Phe Ser Gly His Ile Ile Gln Cys
 325 330 335
 Arg Ile Asn Ala Glu Asp Pro Thr Asn Asn Phe Ser Pro Ser Pro Gly
 340 345 350
 Arg Leu Asp Tyr Tyr Leu Pro Pro Ala Gly Pro Ser Ile Arg Val Asp
 355 360 365
 Gly Ala Cys Tyr Ser Gly Tyr Ala Ile Pro Pro Tyr Tyr Asp Ser Met
 370 375 380
 Ile Ala Lys Val Ile Ala Lys Gly Lys Asn Arg Glu Glu Ala Ile Ala
 385 390 395 400
 Ile Met Lys Arg Ala Leu Lys Glu Phe His Ile Gly Gly Val Gln Ser
 405 410 415
 Thr Ile Pro Phe His Gln Phe Met Leu Asp Asn Pro Lys Phe Leu Glu
 420 425 430
 Ser Asn Tyr Asp Ile Asn Tyr Ile Asp Asn Leu Leu Ala Gln Gly Asn
 435 440 445
 Ser Phe Phe Lys Glu Phe
 450

<210>198

<211>167

<212>PRT

<213>Chlamydia pneumoniae

<400>198

Met Asp Leu Lys Gln Ile Glu Lys Leu Met Ile Ala Met Gly Arg Asn
 1 5 10 15
 Gly Met Lys Arg Phe Ala Ile Lys Arg Glu Gly Leu Glu Leu Glu Leu
 20 25 30
 Glu Arg Asp Thr Arg Glu Gly Asn Arg Gln Glu Pro Val Phe Tyr Asp
 35 40 45
 Ser Arg Leu Phe Ser Gly Phe Ser Gln Glu Arg Pro Ile Pro Thr Asp
 50 55 60
 Pro Lys Lys Asp Thr Ile Lys Glu Thr Thr Thr Glu Asn Ser Glu Thr
 65 70 75 80
 Ser Thr Thr Thr Ser Ser Gly Asp Phe Ile Ser Ser Pro Leu Val Gly
 85 90 95
 Thr Phe Tyr Gly Ser Pro Ala Pro Asp Ser Pro Ser Phe Val Lys Pro
 100 105 110
 Gly Asp Ile Val Ser Glu Asp Thr Ile Val Cys Ile Val Glu Ala Met
 115 120 125
 Lys Val Met Asn Glu Val Lys Ala Gly Met Ser Gly Arg Val Leu Glu
 130 135 140
 Val Leu Ile Thr Asn Gly Asp Pro Val Gln Phe Gly Ser Lys Leu Phe
 145 150 155 160
 Arg Ile Ala Lys Asp Ala Ser
 165

<210>199

<211>185

<212>PRT

<213>Chlamydia pneumoniae

<400>199

Met Val Leu Ser Ser Gln Leu Ser Val Gly Met Phe Ile Ser Thr Lys
 1 5 10 15
 Asp Gly Leu Tyr Lys Val Thr Ser Val Ser Lys Val Ala Gly Pro Lys
 20 25 30
 Gly Glu Ser Phe Ile Lys Val Ala Leu Gln Ala Ala Asp Ser Asp Val

35	40	45
Val Ile Glu Arg Asn Phe Lys Ala Thr Gln Glu Val Lys Glu Ala Gln		
50	55	60
Phe Glu Thr Arg Thr Leu Glu Tyr Leu Tyr Leu Glu Asp Glu Ser Tyr		
65	70	75
Leu Phe Leu Asp Leu Gly Asn Tyr Glu Lys Leu Phe Ile Pro Gln Glu		
85	90	95
Ile Met Lys Asp Asn Phe Leu Phe Leu Lys Ala Gly Val Thr Val Ser		
100	105	110
Ala Met Val Tyr Asp Asn Val Val Phe Ser Val Glu Leu Pro His Phe		
115	120	125
Leu Glu Leu Met Val Ser Lys Thr Asp Phe Pro Gly Asp Ser Leu Ser		
130	135	140
Leu Ser Gly Gly Val Lys Lys Ala Leu Leu Glu Thr Gly Ile Glu Val		
145	150	155
Met Val Pro Pro Phe Val Glu Ile Gly Asp Val Ile Lys Ile Asp Thr		
165	170	175
Arg Thr Cys Glu Tyr Ile Gln Arg Val		
180	185	

<210>200

<211>229

<212>PRT

<213>Chlamydia pneumoniae

<400>200

Val Lys Lys Gln Glu Ser Val Leu Val Gly Pro Ser Ile Met Gly Ala		
1	5	10
Asp Leu Thr Cys Leu Gly Val Glu Ala Lys Lys Leu Glu Gln Ala Gly		
20	25	30
Ser Asp Phe Ile His Ile Asp Ile Met Asp Gly His Phe Val Pro Asn		
35	40	45
Leu Thr Phe Gly Pro Gly Ile Ile Ala Ala Ile Asn Arg Ser Thr Asp		
50	55	60
Leu Phe Leu Glu Val His Ala Met Ile Tyr Asn Pro Phe Glu Phe Ile		
65	70	75
Glu Ser Phe Val Arg Ser Gly Ala Asp Arg Ile Ile Val His Phe Glu		
85	90	95
Ala Ser Glu Asp Ile Lys Glu Leu Leu Ser Tyr Ile Lys Lys Cys Gly		
100	105	110
Val Gln Ala Gly Leu Ala Phe Ser Pro Asp Thr Ser Ile Glu Phe Leu		
115	120	125
Pro Ser Phe Leu Pro Phe Cys Asp Val Val Val Leu Met Ser Val Tyr		
130	135	140
Pro Gly Phe Thr Gly Gln Ser Phe Leu Pro Asn Thr Ile Glu Lys Ile		
145	150	155
Ala Phe Ala Arg His Ala Ile Lys Thr Leu Gly Leu Lys Asp Ser Cys		
165	170	175
Leu Ile Glu Val Asp Gly Gly Ile Asp Gln Gln Ser Ala Pro Leu Cys		
180	185	190
Arg Asp Ala Gly Ala Asp Ile Leu Val Thr Ala Ser Tyr Leu Phe Glu		
195	200	205
Ala Asp Ser Leu Ala Met Glu Asp Lys Ile Leu Leu Leu Arg Gly Glu		
210	215	220
Asn Tyr Gly Val Lys		
225		

<210>201

<211>397

<212>PRT

<213>Chlamydia pneumoniae

<400>201

Pro Ile Lys Asp Lys Ile Leu Met Ser Ser Pro Val Asn Asn Thr Pro		
1	5	10
Ser Ala Pro Asn Ile Pro Ile Pro Ala Pro Thr Thr Pro Gly Ile Pro		
20	25	30
Thr Thr Lys Pro Arg Ser Ser Phe Ile Glu Lys Val Ile Ile Val Ala		

35 40 45
 Lys Tyr Ile Leu Phe Ala Ile Ala Ala Thr Ser Gly Ala Leu Gly Thr
 50 55 60
 Ile Leu Gly Leu Ser Gly Ala Leu Thr Pro Gly Ile Gly Ile Ala Leu
 65 70 75 80
 Leu Val Ile Phe Phe Val Ser Met Val Leu Leu Gly Leu Ile Leu Lys
 85 90 95
 Asp Ser Ile Ser Gly Gly Glu Glu Arg Arg Leu Arg Glu Glu Val Ser
 100 105 110
 Arg Phe Thr Ser Glu Asn Gln Arg Leu Thr Val Ile Thr Thr Thr Leu
 115 120 125
 Glu Thr Glu Val Lys Asp Leu Lys Ala Ala Lys Asp Gln Leu Thr Leu
 130 135 140
 Glu Ile Glu Ala Phe Arg Asn Glu Asn Gly Asn Leu Lys Thr Thr Ala
 145 150 155 160
 Glu Asp Leu Glu Glu Gln Val Ser Lys Leu Ser Glu Gln Leu Glu Ala
 165 170 175
 Leu Glu Arg Ile Asn Gln Leu Ile Gln Ala Asn Ala Gly Asp Ala Gln
 180 185 190
 Glu Ile Ser Ser Glu Leu Lys Lys Leu Ile Ser Gly Trp Asp Ser Lys
 195 200 205
 Val Val Glu Gln Ile Asn Thr Ser Ile Gln Ala Leu Lys Val Leu Leu
 210 215 220
 Gly Gln Glu Trp Val Gln Glu Ala Gln Thr His Val Lys Ala Met Gln
 225 230 235 240
 Glu Gln Ile Gln Ala Leu Gln Ala Glu Ile Leu Gly Met His Asn Gln
 245 250 255
 Ser Thr Ala Leu Gln Lys Ser Val Glu Asn Leu Leu Val Gln Asp Gln
 260 265 270
 Ala Leu Thr Arg Val Val Gly Glu Leu Leu Glu Ser Glu Asn Lys Leu
 275 280 285
 Ser Gln Ala Cys Ser Ala Leu Arg Gln Glu Ile Glu Lys Leu Ala Gln
 290 295 300
 His Glu Thr Ser Leu Gln Gln Arg Ile Asp Ala Met Leu Ala Gln Glu
 305 310 315 320
 Gln Asn Leu Ala Glu Gln Val Thr Ala Leu Glu Lys Met Lys Gln Glu
 325 330 335
 Ala Gln Lys Ala Glu Ser Glu Phe Ile Ala Cys Val Arg Asp Arg Thr
 340 345 350
 Phe Gly Arg Arg Glu Thr Pro Pro Thr Thr Pro Val Val Glu Gly
 355 360 365
 Asp Glu Ser Gln Glu Glu Asp Glu Gly Gly Thr Pro Pro Val Ser Gln
 370 375 380
 Pro Ser Ser Pro Val Asp Arg Ala Thr Gly Asp Gly Gln
 385 390 395

<210>202

<211>118

<212>PRT

<213>Chlamydia pneumoniae

<400>202

Phe Ser Leu Val Asn Arg Glu Thr Ser Ser Leu Ser Leu Arg Ser Ser
 1 5 10 15
 Pro Pro Leu Ile Glu Ser Leu Arg Ile Lys Pro Lys Ser Thr Ile Glu
 20 25 30
 Thr Lys Lys Ile Thr Arg Arg Ala Ile Pro Ile Pro Gly Val Ser Ala
 35 40 45
 Pro Asp Arg Pro Arg Ile Val Pro Ser Ala Pro Asp Val Ala Ala Ile
 50 55 60
 Ala Asn Ser Met Tyr Leu Ala Thr Met Ile Thr Phe Ser Met Lys Leu
 65 70 75 80
 Glu Arg Gly Phe Val Val Gly Ile Pro Gly Val Val Gly Ala Gly Ile
 85 90 95
 Gly Met Phe Gly Ala Glu Gly Val Leu Phe Thr Gly Asp Asp Ile Arg
 100 105 110

Ile Leu Ser Leu Ile Gly

115

<210>203

<211>217

<212>PRT

<213>Chlamydia pneumoniae

<400>203

Met His Ser Lys Phe Leu Ser Arg Arg Lys Lys Asn Ser Ser His Lys
 1 5 10 15
 Glu Glu Thr Ser Trp Asp Cys Ile Ala Ser Ser Tyr Asn Lys Ile Val
 20 25 30
 Gln Asp Lys Gly His Tyr Tyr His Arg Glu Thr Ile Leu Pro Gln Leu
 35 40 45
 Leu Pro Ser Leu Thr Leu Gly Ser Lys Ser Ser Val Leu Asp Ile Gly
 50 55 60
 Cys Gly Gln Gly Phe Leu Glu Arg Ala Leu Pro Lys Glu Cys Arg Tyr
 65 70 75 80
 Leu Gly Ile Asp Ile Ser Ser Arg Leu Ile Ala Leu Ala Lys Lys Met
 85 90 95
 Arg Ser Val Asn Ser His Gln Phe Lys Val Ala Asp Leu Ser Lys Arg
 100 105 110
 Leu Glu Phe Val Glu Pro Thr Leu Phe Ser His Ala Val Ala Ile Leu
 115 120 125
 Ser Leu Gln Asn Met Glu Phe Pro Gly Glu Ala Ile Arg Asn Thr Ala
 130 135 140
 Thr Leu Leu Glu Pro Leu Gly Gln Phe Phe Ile Val Leu Asn His Pro
 145 150 155 160
 Cys Phe Arg Ile Pro Arg Ala Ser Ser Trp His Tyr Asp Glu Asn Lys
 165 170 175
 Lys Ser Tyr Leu Ser Ser Tyr Arg Ser Leu Ser Leu Pro Asn Glu Asn
 180 185 190
 Pro Asn His Gly Ser Pro Arg Thr Lys Arg Phe Ala Phe Tyr Pro Leu
 195 200 205
 Leu Ser Leu Ser Ser Lys Leu Leu Val
 210 215

<210>204

<211>437

<212>PRT

<213>Chlamydia pneumoniae

<400>204

Lys Thr Xaa Asn Ser Cys Ile Met Phe Arg Lys Leu Phe Pro Phe Ser
 1 5 10 15
 Lys Lys Lys Thr Gly Gln Lys Gln Arg Leu Arg Asn Asn Gly Leu Leu
 20 25 30
 Gln Ala Ile Ile Gln Ser Ile Lys Val Leu Leu His Asn Glu Ala Ser
 35 40 45
 Lys Glu Ala Cys Val Leu Ser Tyr Tyr Gly Leu Leu Thr Cys Val Pro
 50 55 60
 Ile Leu Val Phe Phe Leu Arg Leu Ser Gln His Leu Phe Thr Asn Leu
 65 70 75 80
 Asn Trp Lys Glu Trp Leu Ile Ile Lys Phe Pro Asp Tyr Lys Lys Pro
 85 90 95
 Ile Val Ala Ile Val Glu Ala Ala Tyr His Ala Thr Glu Ser Asn Ile
 100 105 110
 Gly Leu Val Leu Val Gly Ser Phe Val Phe Cys Trp Ala Gly Ile
 115 120 125
 Leu Met Leu Leu Ser Leu Glu Asp Gly Leu Asn Lys Ile Phe Arg Thr
 130 135 140
 Ser Trp Thr Pro Ile Ser Leu Lys Arg Leu Val Ser Tyr Phe Val Ile
 145 150 155 160
 Thr Leu Val Ser Pro Met Ile Phe Ile Ile Val Cys Gly Ser Trp Ile
 165 170 175
 Tyr Ile Thr Gln Ile Met Pro Ile Gln Tyr Ala Lys Leu Phe Ser Leu
 180 185 190

Ser His Ser Met Thr Ala Leu Tyr Phe Ile Ser Arg Phe Val Pro Tyr
 195 200 205
 Leu Leu Leu Tyr Leu Ala Leu Phe Cys Cys Tyr Ala Phe Leu Pro Arg
 210 215 220
 Val Ala Ile Gln Lys Thr Ser Ala Leu Ile Ser Thr Leu Ile Ile Gly
 225 230 235 240
 Ser Val Trp Ile Val Phe Gln Lys Ala Phe Phe Ser Leu Gln Val Ser
 245 250 255
 Ile Phe Asn Tyr Ser Phe Thr Tyr Gly Ala Leu Val Ala Leu Pro Ser
 260 265 270
 Phe Leu Leu Leu Leu Tyr Ile Tyr Thr Met Ile Tyr Leu Phe Gly Gly
 275 280 285
 Ala Leu Thr Phe Ile Ile Gln Asn Arg Gly Cys Thr Phe Ile Phe Leu
 290 295 300
 Gly Asp Lys Ile Leu Pro Ser Cys Tyr Leu Gln Leu Ile Thr Ser Thr
 305 310 315 320
 Tyr Ile Leu Ala Leu Thr Thr Arg Gln Phe Asn Glu Gly Leu Ser Pro
 325 330 335
 Leu Thr Ala Gln Phe Ile Ala Lys Gln Ser Lys Val Pro Ile Gly Glu
 340 345 350
 Val Ser Gln Cys Leu Asp Val Leu Glu Lys Glu Gly Phe Leu Phe Pro
 355 360 365
 Tyr Asn Asn Gly Tyr Gln Pro Val Phe Asn Phe Ser Glu Leu Thr Ile
 370 375 380
 Lys Asp Ile Ala Asp Lys Leu Leu His Arg Glu Ile Phe Lys Lys Phe
 385 390 395 400
 Asn Pro Asp Leu Gly Ile Thr Phe Ile Glu Asn Ser Phe Gln Asn Ile
 405 410 415
 Phe Asn Gln Ala Ser Lys Asn Lys Glu Asn Leu Thr Leu Ser Glu Ile
 420 425 430
 Ala Arg Arg Ile Lys
 435

<210>205

<211>313

<212>PRT

<213>Chlamydia pneumoniae

<400>205

Ala Asn Gln Met Lys Arg Arg Ser Trp Leu Lys Ile Leu Gly Ile Cys
 1 5 10 15
 Leu Gly Ser Ser Ile Val Leu Gly Phe Leu Ile Phe Leu Pro Gln Leu
 20 25 30
 Leu Ser Thr Glu Ser Gly Lys Tyr Leu Val Phe Ser Leu Ile His Lys
 35 40 45
 Glu Ser Gly Leu Ser Cys Ser Ala Glu Glu Leu Lys Ile Ser Trp Phe
 50 55 60
 Gly Arg Gln Thr Ala Arg Lys Ile Lys Leu Thr Gly Glu Ala Lys Asp
 65 70 75 80
 Glu Val Xaa Ser Ala Glu Lys Phe Glu Leu Asp Gly Ser Leu Leu Arg
 85 90 95
 Leu Leu Ile Tyr Lys Lys Pro Lys Gly Ile Thr Leu Ser Gly Trp Ser
 100 105 110
 Leu Lys Ile Asn Glu Pro Ala Ser Ile Asp His Pro Ser Val Ser His
 115 120 125
 Leu Asp Pro Gly Ser Leu Leu Thr Tyr Leu Asn Asp Cys Lys Ile Ile
 130 135 140
 Ser Glu His Gly Phe Ile Thr Met Lys Thr Val Ser Gly Ser Ser Leu
 145 150 155 160
 Ser Val Ser Gly Xaa Tyr Leu Glu Xaa Ser Ser Glu Lys Phe Met Thr
 165 170 175
 Lys Cys Val Val Ser Glu Asp Gln Gln Ser Gly Asn Ile Phe Ile Glu
 180 185 190
 Ser Val Leu Ser Pro Asp Val Ser Ile Ser Ala Gln Phe Ser Ser Val
 195 200 205
 Pro Val Ala Phe Phe Lys Ile Phe Ile Ala Ser Pro Phe Trp Asp His

210 215 220
 Leu Leu Ser Tyr Glu Asp Ile Ile Asn Leu Ser Ala Glu Ala Thr His
 225 230 235 240
 Thr Asn Asp Gly Lys Ile Ser Met Thr Ala Ser Gly Glu Gly Asn Gln
 245 250 255
 Ile Gln Met Lys Leu Gln Gly His Ile His Lys Ser Thr Phe Tyr Ile
 260 265 270
 Val Glu Gly Ser Ser Ser Phe Ile Glu Leu Lys Pro Glu Leu Ala Ser
 275 280 285
 Ala Leu Cys Asn Gln Ile Ile Pro Leu Ser Thr Pro Ile Thr Ser Lys
 290 295 300
 Gln Ile Xaa Cys Tyr Gly Leu Leu Cys
 305 310

<210>206

<211>275

<212>PRT

<213>Chlamydia pneumoniae

<400>206

Asn Leu Asn Leu Ser Ser Pro Gln Leu Phe Ala Thr Arg Ser Phe Arg
 1 5 10 15
 Cys Pro His Pro Leu Leu Val Ser Lys Ser Xaa Ala Thr Val Ser Tyr
 20 25 30
 Ala Lys Ile Pro Leu Asp Ile Thr Lys Trp Lys His Ile Glu Ile Thr
 35 40 45
 Ser Gln Ala Gln Leu Pro Glu Val Ala Ile His Pro Lys Asp Pro Asn
 50 55 60
 Leu Ala Leu Gln Leu Arg Asp Thr Lys Leu Gly Ile Lys Lys Thr Glu
 65 70 75 80
 Lys Xaa Ser Asp Ile Arg Tyr Ser Ser Ser Thr Val Leu Gly Gly Ala
 85 90 95
 Ser Pro Ser His Leu Asn Gly Leu Ile Ser Ile Asp Asn Lys Lys His
 100 105 110
 Leu Thr Lys Phe Arg Leu Gln Gln Ala Gln Leu Pro His Thr Tyr Leu
 115 120 125
 Arg Ala Ile Phe Pro Gln Pro Phe Val Ile Asn Val Pro Leu Asp Val
 130 135 140
 Ala Tyr Tyr Ser Leu Asn Ile Glu Gly Thr Tyr Lys Asn Ala His Leu
 145 150 155 160
 Glu Ala Asp Ala Ile Leu Asp Asn Pro Leu Leu Lys Leu Ser Cys Ser
 165 170 175
 Met Ser Gly Ala Trp Lys Asn Phe Leu Phe Lys Gly Gln Gly Thr Tyr
 180 185 190
 His Phe Asn Lys Lys Trp Gln Glu Ile Leu Ser Pro His Phe Ser Tyr
 195 200 205
 Ala Glu Ala Arg Phe Ser Gly Lys Ala Gln Ile Thr Asp Thr Asn Leu
 210 215 220
 Phe Phe Pro Lys Phe Ser Gly Lys Ile Thr Ala Arg Glu Asn Glu Leu
 225 230 235 240
 Leu Ile His Ala Lys Phe Gly Ser Pro Asn Glu Pro Ile Lys Pro Glu
 245 250 255
 Thr Thr Ser Ile Leu Ile His Gly Gln Phe Cys Ser Leu Pro Thr Gln
 260 265 270
 Pro Ser Phe
 275

<210>207

<211>231

<212>PRT

<213>Chlamydia pneumoniae

<400>207

Asn Leu Lys Leu Pro Leu Tyr Ser Ser Thr Asp Asn Phe Val Leu Cys
 1 5 10 15
 Gln Leu Ser Leu Val Ser Asn His Leu Ala Pro Phe His Leu Lys Lys
 20 25 30
 Leu Thr Phe Ser Phe His Thr Asp Gly Gly Lys Phe Val Thr Lys Gly

35 40 45
 Asn Leu Gln Ala Leu Ile Glu Asn Pro Asp Tyr Pro Asp Leu Asn Asn
 50 55 60
 Thr Arg Ile Leu Ile Pro Asp Leu Leu Leu Ser Leu Asp Glu Ser Ser
 65 70 75 80
 Thr Ser Pro Ser Ser Lys Asp Leu Lys Ile Gln Gly Ser Gly Glu Ile
 85 90 95
 Phe Ser Leu Pro Leu Asp Ser Ile Thr Lys Thr Tyr Gly Lys Gln Val
 100 105 110
 Arg Leu Ser Pro Tyr Phe Gly Ser Ser Gly Asp Leu Asn Phe Val Val
 115 120 125
 Asn Tyr Asn Pro Lys Asp Gln Asn Lys Leu Thr Leu Leu Ser Xaa Phe
 130 135 140
 Lys Ser Glu Ala Leu Leu Gly Glu Leu Lys Leu Val Met Asp Phe Ser
 145 150 155 160
 Met Lys Leu Ser Ser Gly Thr Gln Gly Thr Leu Gln Trp Glu Val Ser
 165 170 175
 Pro Glu Arg Tyr Ala Ser Phe Phe Lys Asn Ala Ser Cys Ser Pro Thr
 180 185 190
 Cys Leu Leu His Arg Thr Ala Asn Val Arg Leu Asp Ile Ser Lys Leu
 195 200 205
 Ser Cys Pro Glu Glu Thr Lys Gly Leu Ser Cys Leu Thr Leu Leu Ala
 210 215 220
 Ala Glu Asp Leu Lys Val His
 225 230
 <210>208
 <211>415
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>208
 Asn Cys Lys Cys Thr Leu Arg His Leu Lys Thr Leu Leu Ser Arg Gly
 1 5 10 15
 Asn Gln Arg Phe Ile Leu Ser His Ala Ser Cys Arg Arg Gly Leu Glu
 20 25 30
 Gly Ser Leu Glu Ala Thr Pro Leu Ile Phe Tyr Asp Asn Val Ser Lys
 35 40 45
 Glu Thr Phe Ile Ile Asn Asp Phe Xaa Gly Ser Leu Arg Ala Asn Asn
 50 55 60
 Leu Asp Ala Lys Ile Glu Tyr Asp Leu Lys Gly Ser Cys Leu Ala Pro
 65 70 75 80
 Arg Gln Asp Ser Lys Thr Leu Ala Glu Phe Ser Leu Glu Gly Gln Val
 85 90 95
 Asp His Leu Phe Ser Pro Glu Ser Arg Glu Phe Lys Gln Thr Ala Asn
 100 105 110
 Trp Ile His Ile Pro Ser Ser Phe Ile Ala Gly Ile Ile Pro Met Ser
 115 120 125
 Pro Gly Leu Lys Ala Gln Ile Ser Ser Leu Ala Gly Pro Arg Ile Asn
 130 135 140
 Val Ser Ile Lys Asn Ala Phe Arg Phe Gly Glu Gly Pro Val Asp Ile
 145 150 155 160
 Met Val Asp Ser Glu Asn Leu Gln Ala Gln Ile Pro Leu Ile Leu Asn
 165 170 175
 Glu Lys Ser Ile Leu Leu Arg Glu Asn Leu Thr Ala His Leu Ser Ile
 180 185 190
 Asn Glu Asp Val Asn Lys Ala Phe Leu Gln Glu Phe Asn Pro Leu Leu
 195 200 205
 Ala Gly Gly Ala Tyr Ser Gln Tyr Pro Val Thr Leu Glu Ile Asp Lys
 210 215 220
 Gln Asn Phe Tyr Leu Pro Ile Arg Pro Tyr Ser Phe Glu Glu Phe Arg
 225 230 235 240
 Ile Gln Ser Ala Thr Leu Asp Met Gly Lys Ile Ser Ile Ala Asn Thr
 245 250 255
 Gly Thr Met Tyr Ala Leu Phe Gln Phe Leu Asp Ile Thr Asp Gln Lys
 260 265 270

Gln Phe Val Glu Ser Trp Phe Thr Pro Ile Phe Phe Ser Val Gln Lys
 275 280 285
 Gly Ser Ile Ile Cys Lys Arg Leu Asp Ala Leu Ile Asp Arg Arg Ile
 290 295 300
 Arg Leu Ala Leu Trp Gly Lys Thr Asp Ile Ala His Asp Arg Leu Phe
 305 310 315 320
 Met Thr Leu Gly Ile Asp Pro Glu Val Ile Lys Lys Tyr Phe His Asn
 325 330 335
 Thr Ser Leu Lys Thr Lys Asn Phe Phe Leu Ile Lys Ile Arg Gly Ser
 340 345 350
 Ile Ser Ser Pro Glu Val Asp Trp Ser Ser Ala Tyr Ala Arg Ile Ala
 355 360 365
 Leu Leu Lys Ser Tyr Ser Leu Gly Asn Pro Phe Ser Ser Leu Ala Asp
 370 375 380
 Lys Leu Phe Ser Ser Leu Gly Asp Ser Thr Pro Pro Pro Thr Val His
 385 390 395 400
 Pro Phe Pro Trp Glu Lys Ser Asn Phe Asp Ser Ile Glu Asn Lys
 405 410 415

<210>209

<211>458

<212>PRT

<213>Chlamydia pneumoniae

<400>209

Leu Leu Gly Ile Lys Leu Met Arg Lys Arg His Ser Phe Asp Ser Thr
 1 5 10 15
 Ser Thr Lys Lys Glu Ala Val Ser Lys Ala Ile Gln Lys Ile Ile Lys
 20 25 30
 Ile Met Glu Thr Thr Asp Pro Ser Leu Asn Val Glu Thr Pro Asn Ala
 35 40 45
 Glu Ile Glu Ser Ile Leu Gln Glu Ile Lys Glu Ile Lys Gln Lys Leu
 50 55 60
 Ser Lys Gln Ala Glu Asp Leu Gly Leu Leu Glu Lys Tyr Cys Ser Gln
 65 70 75 80
 Glu Thr Leu Ser Asn Leu Glu Asn Thr Asn Ala Ser Leu Lys Leu Ser
 85 90 95
 Ile Gly Ser Val Ile Glu Glu Leu Ala Ser Leu Lys Gln Leu Val Glu
 100 105 110
 Glu Ser Ile Glu Glu Ser Leu Gly Gln Gln Asp Gln Leu Ile Gln Ser
 115 120 125
 Val Leu Ile Glu Ile Ser Asp Lys Phe Leu Ser Ser Ile Gly Glu Thr
 130 135 140
 Leu Ser Gly Asn Leu Asp Met Asn Gln Asn Val Ile Gln Gly Leu Leu
 145 150 155 160
 Ile Lys Glu Asn Pro Glu Lys Ser Glu Ala Ala Ser Val Gly Tyr Val
 165 170 175
 Gln Thr Leu Leu Glu Pro Leu Ser Lys Arg Ile Gly Glu Thr His Lys
 180 185 190
 Lys Val Ala Thr His Asp Val Asn Ile Ser Ser Leu Gln Phe His Met
 195 200 205
 Met Ser Val Ala Gly Gly Arg Phe Arg Gly His Ile Asp Met Asn Gly
 210 215 220
 Tyr Arg Val Leu Gly Leu Gly Glu Pro Lys Asn Gly Glu Asp Ala Val
 225 230 235 240
 Ser Lys Asp Tyr Leu Glu Arg Tyr Val Ser Ser Gln Leu Thr Ile Asp
 245 250 255
 Lys Val Glu Asp Lys Pro Ile Thr Lys Pro Asn Lys Gly Lys Leu Leu
 260 265 270
 Tyr Ser Gln Gly Thr Ser Pro Lys Leu Glu Gly Pro Leu Pro Leu Gly
 275 280 285
 Leu Leu Thr Ser Gly Ile Ser Gly Phe Thr Trp Lys Ser Ala Ser Lys
 290 295 300
 Ser Asn Asp Gly Ser Phe Pro Phe Ser Ala Leu Arg His Lys Glu Thr
 305 310 315 320
 Glu Ser Asp Thr Asp Cys Phe Gln Ile Thr Ser Thr Thr Leu Ser Gly

325 330 335
 Asn Gln Ala Gly Thr Tyr Thr Trp Ser Leu Ser Leu Lys Val Leu Val
 340 345 350
 Pro Ser Ile Phe Gln Ile Glu Lys Pro Glu Val Gln Leu Ser Leu Val
 355 360 365
 Tyr Ser Tyr Glu Asp Trp Leu Pro Ile Asp Asn Ile Phe Asn Met Ser
 370 375 380
 Gln Pro Arg Thr Ile Pro Leu Ala Leu Leu Gly Gln Thr Met Leu Ala
 385 390 395 400
 Gly Gln Lys Tyr Asp Ile Leu Glu Leu Ala Ala His Gln Thr Asn Gln
 405 410 415
 Thr Leu Met Ile Ser Pro Asn Cys Ser Arg Phe Ser Leu Gln Leu Lys
 420 425 430
 Gln Thr Asn Gln Phe Glu Asn Ser Pro Val Asp Phe Tyr Ile Val His
 435 440 445
 Ala Ala His Ser Cys His Trp Ser Gly Phe
 450 455

<210>210

<211>226

<212>PRT

<213>Chlamydia pneumoniae

<400>210

Met Thr Ile Arg Val Arg Asn Leu Ala Tyr Ser Val Asn Lys Lys Lys
 1 5 10 15
 Ile Leu Asp Gly Val Thr Phe Ser Leu Glu Arg Gly His Ile Thr Leu
 20 25 30
 Phe Val Gly Lys Ser Gly Ser Gly Lys Thr Met Ile Leu Arg Ala Leu
 35 40 45
 Ala Gly Leu Val Gln Pro Thr Gln Gly Asp Ile Trp Ile Glu Gly Glu
 50 55 60
 Ala Pro Ala Leu Val Phe Gln Gln Pro Glu Leu Phe Ser His Met Thr
 65 70 75 80
 Val Leu Gly Asn Cys Thr His Pro Gln Ile His Ile Lys Gly Arg Ser
 85 90 95
 Thr Glu Glu Ala Arg Glu Lys Ala Phe Glu Leu Leu His Leu Leu Asp
 100 105 110
 Ile Glu Glu Val Ala Lys Asn Tyr Pro Asp Gln Leu Ser Gly Gly Gln
 115 120 125
 Lys Gln Arg Val Ala Ile Val Arg Ser Leu Cys Met Asp Lys His Thr
 130 135 140
 Leu Leu Phe Asp Glu Pro Thr Ser Ala Leu Asp Pro Phe Ala Thr Ala
 145 150 155 160
 Ser Phe Arg His Leu Leu Glu Thr Leu Arg Asp Gln Glu Leu Thr Val
 165 170 175
 Gly Leu Thr Thr His Asp Met Gln Phe Val His Ser Cys Leu Asp Arg
 180 185 190
 Ile Tyr Leu Ile Asp Gln Gly Thr Val Ala Gly Val Tyr Asp Lys Arg
 195 200 205
 Asp Gly Glu Leu Asp Ser Gly His Pro Leu Ser Lys Tyr Ile His Ser
 210 215 220
 Ala Gln
 225

<210>211

<211>220

<212>PRT

<213>Chlamydia pneumoniae

<400>211

Glu Val Gly Val Asp His Trp Leu Ala Ile Ala Arg Leu Leu Leu Arg
 1 5 10 15
 Gly Cys Gly Tyr Thr Leu Cys Val Ser Gly Ile Gly Ile Leu Cys Gly
 20 25 30
 Ser Ile Leu Gly Leu Leu Ile Gly Thr Val Thr Ser Leu Tyr Phe Pro
 35 40 45
 Ser Lys Leu Thr Lys Leu Leu Ala Asn Ser Tyr Val Thr Val Ile Arg

50	55	60												
Gly Thr Pro Leu Phe Ile Gln Ile Leu Ile Ile Tyr Phe Gly Leu Pro														
65	70	75	80											
Glu Val Leu Pro Ile Glu Pro Thr Pro Leu Val Ala Gly Ile Ile Ala														
	85	90	95											
Leu Ser Met Asn Ser Ala Ala Tyr Leu Ala Glu Asn Ile Arg Gly Gly														
	100	105	110											
Ile Asn Ser Leu Ser Ile Gly Gln Trp Glu Ser Ala Met Val Leu Gly														
	115	120	125											
Tyr Lys Lys Tyr Gln Ile Phe Val Tyr Ile Ile Tyr Pro Gln Val Phe														
	130	135	140											
Lys Asn Ile Leu Pro Ser Leu Thr Asn Glu Phe Val Ser Leu Ile Lys														
145	150	155	160											
Glu Ser Ser Ile Leu Met Val Val Gly Val Pro Glu Leu Thr Lys Val														
	165	170	175											
Thr Lys Asp Ile Val Ser Arg Glu Leu Asn Pro Met Glu Met Tyr Leu														
	180	185	190											
Ile Cys Ala Gly Leu Tyr Phe Leu Met Thr Thr Ser Phe Ser Cys Ile														
	195	200	205											
Ser Arg Leu Ser Glu Lys Arg Arg Ser Tyr Asp Asn														
210	215	220												

<210>212

<211>147

<212>PRT

<213>Chlamydia pneumoniae

<400>212

Met Lys Lys Lys Val Thr Ile Asp Glu Ala Leu Lys Glu Ile Leu Arg														
1	5	10	15											
Leu Glu Gly Ala Ala Thr Gln Glu Glu Leu Cys Ala Lys Leu Leu Ala														
	20	25	30											
Gln Gly Phe Ala Thr Thr Gln Ser Ser Val Ser Arg Trp Leu Arg Lys														
	35	40	45											
Ile Gln Ala Val Lys Val Ala Gly Glu Arg Gly Ala Arg Tyr Ser Leu														
	50	55	60											
Pro Ser Ser Thr Glu Lys Thr Thr Thr Arg His Leu Val Leu Ser Ile														
65	70	75	80											
Arg His Asn Ala Ser Leu Ile Val Ile Arg Thr Val Pro Gly Ser Ala														
	85	90	95											
Ser Trp Ile Ala Ala Leu Leu Asp Gln Gly Leu Lys Asp Glu Ile Leu														
	100	105	110											
Gly Thr Leu Ala Gly Asp Asp Thr Ile Phe Val Thr Pro Ile Asp Glu														
	115	120	125											
Gly Arg Leu Pro Leu Leu Met Val Ser Ile Ala Asn Leu Leu Gln Val														
	130	135	140											
Phe Leu Asp														
145														

<210>213

<211>344

<212>PRT

<213>Chlamydia pneumoniae

<400>213

Met Leu Thr Leu Gly Leu Glu Ser Ser Cys Asp Glu Thr Ala Cys Ala														
1	5	10	15											
Ile Val Asn Glu Asp Lys Gln Ile Leu Ala Asn Ile Ile Ala Ser Gln														
	20	25	30											
Asp Ile His Ala Ser Tyr Gly Gly Val Val Pro Glu Leu Ala Ser Arg														
	35	40	45											
Ala His Leu His Ile Phe Pro Gln Val Ile Asn Lys Ala Leu Gln Gln														
	50	55	60											
Ala Asn Leu Leu Ile Glu Asp Met Asp Leu Ile Ala Val Thr Gln Thr														
65	70	75	80											
Pro Gly Leu Ile Gly Ser Leu Ser Val Gly Val His Phe Gly Lys Gly														
	85	90	95											
Ile Ala Ile Gly Ala Lys Lys Ser Leu Ile Gly Val Asn His Val Glu														

100 105 110
 Ala His Leu Tyr Ala Ala Tyr Met Ala Ala Gln Asn Val Gln Phe Pro
 115 120 125
 Ala Leu Gly Leu Val Val Ser Gly Ala His Thr Ala Ala Phe Phe Ile
 130 135 140
 Glu Asn Pro Thr Ser Tyr Lys Leu Ile Gly Lys Thr Arg Asp Asp Ala
 145 150 155 160
 Ile Gly Glu Thr Phe Asp Lys Val Gly Arg Phe Leu Gly Leu Pro Tyr
 165 170 175
 Pro Ala Gly Pro Leu Ile Glu Lys Leu Ala Leu Glu Gly Ser Glu Asp
 180 185 190
 Ser Tyr Pro Phe Ser Pro Ala Lys Val Pro Asn Tyr Asp Phe Ser Phe
 195 200 205
 Ser Gly Leu Lys Thr Ala Val Leu Tyr Ala Ile Lys Gly Asn Asn Ser
 210 215 220
 Ser Pro Arg Ser Pro Ala Pro Glu Ile Ser Leu Glu Lys Gln Arg Asp
 225 230 235 240
 Ile Ala Ala Ser Phe Gln Lys Ala Ala Cys Thr Thr Ile Ala Gln Lys
 245 250 255
 Leu Pro Thr Ile Ile Lys Glu Phe Ser Cys Arg Ser Ile Leu Ile Gly
 260 265 270
 Gly Gly Val Ala Ile Asn Glu Tyr Phe Arg Ser Ala Ile Gln Thr Ala
 275 280 285
 Cys Asn Leu Pro Val Tyr Phe Pro Pro Ala Lys Leu Cys Ser Asp Asn
 290 295 300
 Ala Ala Met Ile Ala Gly Leu Gly Gly Glu Asn Phe Gln Lys Asn Ser
 305 310 315 320
 Ser Ile Pro Glu Ile Arg Ile Cys Ala Arg Tyr Gln Trp Glu Ser Val
 325 330 335
 Ser Pro Phe Ser Leu Ala Ser Pro
 340

<210>214

<211>514

<212>PRT

<213>Chlamydia pneumoniae

<400>214

Met Arg Lys Ile Ser Val Gly Ile Cys Ile Thr Ile Leu Leu Ser Leu
 1 5 10 15
 Ser Val Val Leu Gln Gly Cys Lys Glu Ser Ser His Ser Ser Thr Ser
 20 25 30
 Arg Gly Glu Leu Ala Ile Asn Ile Arg Asp Glu Pro Arg Ser Leu Asp
 35 40 45
 Pro Arg Gln Val Arg Leu Leu Ser Glu Ile Ser Leu Val Lys His Ile
 50 55 60
 Tyr Glu Gly Leu Val Gln Glu Asn Asn Leu Ser Gly Asn Ile Glu Pro
 65 70 75 80
 Ala Leu Ala Glu Asp Tyr Ser Leu Ser Ser Asp Gly Leu Thr Tyr Thr
 85 90 95
 Phe Lys Leu Lys Ser Ala Phe Trp Ser Asn Gly Asp Pro Leu Thr Ala
 100 105 110
 Glu Asp Phe Ile Glu Ser Trp Lys Gln Val Ala Thr Gln Glu Val Ser
 115 120 125
 Gly Ile Tyr Ala Phe Ala Leu Asn Pro Ile Lys Asn Val Arg Lys Ile
 130 135 140
 Gln Glu Gly His Leu Ser Ile Asp His Phe Gly Val His Ser Pro Asn
 145 150 155 160
 Glu Ser Thr Leu Val Val Thr Leu Glu Ser Pro Thr Ser His Phe Leu
 165 170 175
 Lys Leu Leu Ala Leu Pro Val Phe Phe Pro Val His Lys Ser Gln Arg
 180 185 190
 Thr Leu Gln Ser Lys Ser Leu Pro Ile Ala Ser Gly Ala Phe Tyr Pro
 195 200 205
 Lys Asn Ile Lys Gln Lys Gln Trp Ile Lys Leu Ser Lys Asn Pro His
 210 215 220

Tyr Tyr Asn Gln Ser Gln Val Glu Thr Lys Thr Ile Thr Ile His Phe
 225 230 235 240
 Ile Pro Asp Ala Asn Thr Ala Ala Lys Leu Phe Asn Gln Gly Lys Leu
 245 250 255
 Asn Trp Gln Gly Pro Pro Trp Gly Glu Arg Ile Pro Gln Glu Thr Leu
 260 265 270
 Ser Asn Leu Gln Ser Lys Gly His Leu His Ser Phe Asp Val Ala Gly
 275 280 285
 Thr Ser Trp Leu Thr Phe Asn Ile Asn Lys Phe Pro Leu Asn Asn Met
 290 295 300
 Lys Leu Arg Glu Ala Leu Ala Ser Ala Leu Asp Lys Glu Ala Leu Val
 305 310 315 320
 Ser Thr Ile Phe Leu Gly Arg Ala Lys Thr Ala Asp His Leu Leu Pro
 325 330 335
 Thr Asn Ile His Ser Tyr Pro Glu His Gln Lys Gln Glu Met Ala Gln
 340 345 350
 Arg Gln Ala Tyr Ala Lys Lys Leu Phe Lys Glu Ala Leu Glu Glu Leu
 355 360 365
 Gln Ile Thr Ala Lys Asp Leu Glu His Leu Asn Leu Ile Phe Pro Val
 370 375 380
 Ser Ser Ser Ala Ser Ser Leu Leu Val Gln Leu Ile Arg Glu Gln Trp
 385 390 395 400
 Lys Glu Ser Leu Gly Phe Ala Ile Pro Ile Val Gly Lys Glu Phe Ala
 405 410 415
 Leu Leu Gln Ala Asp Leu Ser Ser Gly Asn Phe Ser Leu Ala Thr Gly
 420 425 430
 Gly Trp Phe Ala Asp Phe Ala Asp Pro Met Ala Phe Leu Thr Ile Phe
 435 440 445
 Ala Tyr Pro Ser Gly Val Pro Pro Tyr Ala Ile Asn His Lys Asp Phe
 450 455 460
 Leu Glu Ile Leu Gln Asn Ile Glu Gln Glu Gln Asp His Gln Lys Arg
 465 470 475 480
 Ser Glu Leu Val Ser Gln Ala Ser Leu Tyr Leu Glu Thr Phe His Ile
 485 490 495
 Ile Glu Pro Ile Tyr His Asp Ala Phe Gln Phe Ala Met Asn Lys Lys
 500 505 510
 Leu Ser

<210>215

<211>494

<212>PRT

<213>Chlamydia pneumoniae

<400>215

Lys Glu Met Pro Arg Ser Leu Asp Pro Gly Lys Thr Arg Leu Ile Ala
 1 5 10 15
 Asp Gln Thr Leu Met Arg His Leu Tyr Glu Gly Leu Val Glu Glu His
 20 25 30
 Ser Gln Asn Gly Glu Ile Lys Pro Ala Leu Ala Glu Ser Tyr Thr Ile
 35 40 45
 Ser Glu Asp Gly Thr Arg Tyr Thr Phe Lys Ile Lys Asn Ile Leu Trp
 50 55 60
 Ser Asn Gly Asp Pro Leu Thr Ala Gln Asp Phe Val Ser Ser Trp Lys
 65 70 75 80
 Glu Ile Leu Lys Glu Asp Ala Ser Ser Val Tyr Leu Tyr Ala Phe Leu
 85 90 95
 Pro Ile Lys Asn Ala Arg Ala Ile Phe Asp Asp Thr Glu Ser Pro Glu
 100 105 110
 Asn Leu Gly Val Arg Ala Leu Asp Lys Arg His Leu Glu Ile Gln Leu
 115 120 125
 Glu Thr Pro Cys Ala His Phe Leu His Phe Leu Thr Leu Pro Ile Phe
 130 135 140
 Phe Pro Val His Glu Thr Leu Arg Asn Tyr Ser Thr Ser Phe Glu Glu
 145 150 155 160
 Met Pro Ile Thr Cys Gly Ala Phe Arg Pro Val Ser Leu Glu Lys Gly

165 170 175
 Leu Arg Leu His Leu Glu Lys Asn Pro Met Tyr His Asn Lys Ser Arg
 180 185 190
 Val Lys Leu His Lys Ile Ile Val Gln Phe Ile Ser Asn Ala Asn Thr
 195 200 205
 Ala Ala Ile Leu Phe Lys His Lys Lys Leu Asp Trp Gln Gly Pro Pro
 210 215 220
 Trp Gly Glu Pro Ile Pro Pro Glu Ile Ser Ala Ser Leu His Gln Asp
 225 230 235 240
 Asp Gln Leu Phe Ser Leu Pro Gly Ala Ser Thr Thr Trp Leu Leu Phe
 245 250 255
 Asn Ile Gln Lys Lys Pro Trp Asn Asn Ala Lys Leu Arg Lys Ala Leu
 260 265 270
 Ser Leu Ala Ile Asp Lys Asp Met Leu Thr Lys Val Val Tyr Gln Gly
 275 280 285
 Leu Ala Glu Pro Thr Asp His Ile Leu His Pro Arg Leu Tyr Pro Gly
 290 295 300
 Thr Tyr Pro Glu Arg Lys Arg Gln Asn Glu Arg Ile Leu Glu Ala Gln
 305 310 315 320
 Gln Leu Phe Glu Glu Ala Leu Asp Glu Leu Gln Met Thr Arg Glu Asp
 325 330 335
 Leu Glu Lys Glu Thr Leu Thr Phe Ser Thr Phe Ser Phe Ser Tyr Gly
 340 345 350
 Arg Ile Cys Gln Met Leu Arg Glu Gln Trp Lys Lys Val Leu Lys Phe
 355 360 365
 Thr Ile Pro Ile Val Gly Gln Glu Phe Phe Thr Ile Gln Lys Asn Phe
 370 375 380
 Leu Glu Gly Asn Tyr Ser Leu Thr Val Asn Gln Trp Thr Ala Ala Phe
 385 390 395 400
 Ile Asp Pro Met Ser Tyr Leu Met Ile Phe Ala Asn Pro Gly Gly Ile
 405 410 415
 Ser Pro Tyr His Leu Gln Asp Ser His Phe Gln Thr Leu Leu Ile Lys
 420 425 430
 Ile Thr Gln Glu His Lys Lys His Leu Arg Asn Gln Leu Ile Ile Glu
 435 440 445
 Ala Leu Asp Tyr Leu Glu His Cys His Ile Leu Glu Pro Leu Cys His
 450 455 460
 Pro Asn Leu Arg Ile Ala Leu Asn Lys Asn Ile Lys Asn Phe Asn Leu
 465 470 475 480
 Phe Val Arg Arg Thr Ser Asp Phe Arg Phe Ile Glu Lys Leu
 485 490

<210>216

<211>448

<212>PRT

<213>Chlamydia pneumoniae

<400>216

Leu Lys Phe Asp Ser Lys Phe Ile Lys Val Ile Phe Lys Met Phe Ser
 1 5 10 15
 Arg Trp Ile Thr Leu Phe Leu Leu Phe Ile Ser Leu Thr Gly Cys Ser
 20 25 30
 Ser Tyr Ser Ser Lys His Lys Gln Ser Leu Ile Ile Pro Ile His Asp
 35 40 45
 Asp Pro Val Ala Phe Ser Pro Glu Gln Ala Lys Arg Ala Met Asp Leu
 50 55 60
 Ser Ile Ala Gln Leu Leu Phe Asp Gly Leu Thr Arg Glu Thr His Arg
 65 70 75 80
 Glu Ser Asn Asp Leu Glu Leu Ala Ile Ala Ser Arg Tyr Thr Val Ser
 85 90 95
 Glu Asp Phe Cys Ser Tyr Thr Phe Phe Ile Lys Asp Ser Ala Leu Trp
 100 105 110
 Ser Asp Gly Thr Pro Ile Thr Ser Glu Asp Ile Arg Asn Ala Trp Glu
 115 120 125
 Tyr Ala Gln Glu Asn Ser Pro His Ile Gln Ile Phe Gln Gly Leu Asn
 130 135 140

Phe	Ser	Thr	Pro	Ser	Ser	Asn	Ala	Ile	Thr	Ile	His	Leu	Asp	Ser	Pro
145					150					155					160
Asn	Pro	Asp	Phe	Pro	Lys	Leu	Leu	Ala	Phe	Pro	Ala	Phe	Ala	Ile	Phe
			165						170					175	
Lys	Pro	Glu	Asn	Pro	Lys	Leu	Phe	Ser	Gly	Pro	Tyr	Thr	Leu	Val	Glu
			180						185				190		
Tyr	Phe	Pro	Gly	His	Asn	Ile	His	Leu	Lys	Lys	Asn	Pro	Asn	Tyr	Tyr
		195					200					205			
Asp	Tyr	His	Cys	Val	Ser	Ile	Asn	Ser	Ile	Lys	Leu	Leu	Ile	Ile	Pro
	210					215					220				
Asp	Ile	Tyr	Thr	Ala	Ile	His	Leu	Leu	Asn	Arg	Gly	Lys	Val	Asp	Trp
225					230					235				240	
Val	Gly	Gln	Pro	Trp	His	Gln	Gly	Ile	Pro	Trp	Glu	Leu	His	Lys	Gln
			245						250					255	
Ser	Gln	Tyr	His	Tyr	Tyr	Thr	Tyr	Pro	Val	Glu	Gly	Ala	Phe	Trp	Leu
			260					265					270		
Cys	Leu	Asn	Thr	Lys	Ser	Pro	His	Leu	Asn	Asp	Leu	Gln	Asn	Arg	His
		275					280					285			
Arg	Leu	Ala	Thr	Cys	Ile	Asp	Lys	Arg	Ser	Ile	Ile	Glu	Glu	Ala	Leu
	290					295					300				
Gln	Gly	Thr	Gln	Gln	Pro	Ala	Glu	Thr	Leu	Ser	Arg	Gly	Ala	Pro	Gln
305					310					315					320
Pro	Asn	Gln	Tyr	Lys	Lys	Gln	Lys	Pro	Leu	Thr	Pro	Gln	Glu	Lys	Leu
			325						330					335	
Val	Leu	Thr	Tyr	Pro	Ser	Asp	Ile	Leu	Arg	Cys	Gln	Arg	Ile	Ala	Glu
		340						345				350			
Ile	Leu	Lys	Glu	Gln	Trp	Lys	Ala	Ala	Gly	Ile	Asp	Leu	Ile	Leu	Glu
		355					360					365			
Gly	Leu	Glu	Tyr	His	Leu	Phe	Val	Asn	Lys	Arg	Lys	Val	Gln	Asp	Tyr
	370					375					380				
Ala	Ile	Ala	Thr	Gln	Thr	Gly	Val	Ala	Tyr	Tyr	Pro	Gly	Ala	Asn	Leu
385					390					395				400	
Ile	Ser	Glu	Glu	Asp	Lys	Leu	Leu	Gln	Asn	Phe	Glu	Ile	Ile	Pro	Ile
			405						410					415	
Tyr	Tyr	Leu	Ser	Tyr	Asp	Tyr	Leu	Thr	Gln	Asp	Phe	Ile	Glu	Gly	Val
		420						425					430		
Ile	Tyr	Asn	Ala	Ser	Gly	Ala	Val	Asp	Leu	Lys	Tyr	Thr	Tyr	Phe	Pro
		435					440					445			

<210>217

<211>534

<212>PRT

<213>Chlamydia pneumoniae

<400>217

Gln	Ile	Glu	Tyr	Tyr	Ile	Met	Lys	Met	His	Arg	Leu	Lys	Pro	Thr	Leu
1				5					10					15	
Lys	Ser	Leu	Ile	Pro	Asn	Leu	Leu	Phe	Leu	Leu	Leu	Thr	Leu	Ser	Ser
			20					25					30		
Cys	Ser	Lys	Gln	Lys	Gln	Glu	Pro	Leu	Gly	Lys	His	Leu	Val	Ile	Ala
		35					40					45			
Met	Ser	His	Asp	Leu	Ala	Asp	Leu	Asp	Pro	Arg	Asn	Ala	Tyr	Leu	Ser
	50					55					60				
Arg	Asp	Ala	Ser	Leu	Ala	Lys	Ala	Leu	Tyr	Glu	Gly	Leu	Thr	Arg	Glu
65					70					75				80	
Thr	Asp	Gln	Gly	Ile	Ala	Leu	Ala	Leu	Ala	Glu	Ser	Tyr	Thr	Leu	Ser
			85						90					95	
Lys	Asp	His	Lys	Val	Tyr	Thr	Phe	Lys	Leu	Arg	Pro	Ser	Val	Trp	Ser
			100					105					110		
Asp	Gly	Thr	Pro	Leu	Thr	Ala	Tyr	Asp	Phe	Glu	Lys	Ser	Ile	Lys	Gln
	115						120					125			
Leu	Tyr	Phe	Glu	Glu	Phe	Ser	Pro	Ser	Ile	His	Thr	Leu	Leu	Gly	Val
	130					135					140				
Ile	Lys	Asn	Ser	Ser	Ala	Ile	His	Asn	Ala	Gln	Lys	Ser	Leu	Glu	Thr
145					150					155				160	
Leu	Gly	Ile	Gln	Ala	Lys	Asp	Asp	Leu	Thr	Leu	Val	Ile	Thr	Leu	Glu

165 170 175
 Gln Pro Phe Pro Tyr Phe Leu Thr Leu Ile Ala Arg Pro Val Phe Ser
 180 185 190
 Pro Val His His Thr Leu Arg Glu Ser Tyr Lys Lys Gly Thr Pro Pro
 195 200 205
 Ser Thr Tyr Ile Ser Asn Gly Pro Phe Val Leu Lys Lys His Xaa His
 210 215 220
 Gln Asn Tyr Leu Ile Leu Glu Lys Asn Pro His Tyr Tyr Asp His Glu
 225 230 235 240
 Ser Val Lys Leu Asp Arg Val Thr Leu Lys Ile Ile Pro Asp Ala Ser
 245 250 255
 Thr Ala Thr Lys Leu Phe Lys Ser Lys Ser Ile Asp Trp Ile Gly Ser
 260 265 270
 Pro Trp Ser Ala Pro Ile Ser Asn Glu Asp Gln Lys Val Leu Ser Gln
 275 280 285
 Glu Lys Ile Leu Thr Tyr Ser Val Ser Ser Thr Thr Leu Leu Ile Tyr
 290 295 300
 Asn Leu Gln Lys Pro Leu Ile Gln Asn Lys Ala Leu Arg Lys Ala Ile
 305 310 315 320
 Ala His Ala Ile Asp Arg Lys Ser Ile Leu Arg Leu Val Pro Ser Gly
 325 330 335
 Gln Glu Ala Val Thr Leu Val Pro Pro Asn Leu Ser Gln Leu Asn Leu
 340 345 350
 Gln Lys Glu Ile Ser Thr Glu Glu Arg Gln Thr Lys Ala Arg Ala Tyr
 355 360 365
 Phe Gln Glu Ala Lys Glu Thr Leu Ser Glu Lys Glu Leu Ala Glu Leu
 370 375 380
 Ser Ile Leu Tyr Pro Ile Asp Ser Ser Asn Ser Ser Ile Ile Ala Gln
 385 390 395 400
 Glu Ile Gln Arg Gln Leu Lys Asp Thr Leu Gly Leu Lys Ile Lys Ile
 405 410 415
 Gln Gly Met Glu Tyr His Cys Phe Leu Lys Lys Arg Arg Gln Gly Asp
 420 425 430
 Phe Phe Ile Ala Thr Gly Gly Trp Ile Ala Glu Tyr Val Ser Pro Val
 435 440 445
 Ala Phe Leu Ser Ile Leu Gly Asn Pro Arg Asp Leu Thr Gln Trp Arg
 450 455 460
 Asn Ser Asp Tyr Glu Lys Thr Leu Glu Lys Leu Tyr Leu Pro His Ala
 465 470 475 480
 Tyr Lys Glu Asn Leu Lys Arg Ala Glu Met Ile Ile Glu Glu Glu Thr
 485 490 495
 Pro Ile Ile Pro Leu Tyr His Gly Lys Tyr Ile Tyr Ala Ile His Pro
 500 505 510
 Lys Ile Gln Asn Thr Phe Gly Ser Leu Leu Gly His Thr Asp Leu Lys
 515 520 525
 Asn Ile Asp Ile Leu Ser
 530

<210>218

<211>296

<212>PRT

<213>Chlamydia pneumoniae

<400>218

Leu Ser Leu Val Phe Ser Tyr Ile Lys Asn Arg Ile Leu Phe Asn Leu
 1 5 10 15
 Leu Ser Leu Trp Ile Val Leu Thr Leu Thr Phe Leu Val Met Lys Thr
 20 25 30
 Ile Pro Gly Asp Pro Phe Asn Asp Glu Gly Cys Asn Val Leu Ser Glu
 35 40 45
 Glu Val Leu Gln Thr Leu Lys Ser Arg Tyr Gly Leu Asp Lys Pro Leu
 50 55 60
 Tyr Gln Gln Tyr Thr Gln Tyr Leu His Ser Ile Ala Lys Leu Asp Phe
 65 70 75 80
 Gly Asn Ser Leu Val Tyr Lys Asp Arg Lys Val Thr Asn Ile Ile Ser
 85 90 95

Thr	Ala	Phe	Pro	Ile	Ser	Ala	Ile	Leu	Gly	Leu	Gln	Ser	Leu	Phe	Leu
			100					105					110		
Ser	Ile	Gly	Gly	Gly	Ile	Ala	Leu	Gly	Thr	Ile	Ala	Ala	Leu	Lys	Lys
		115					120					125			
Lys	Lys	Gln	Arg	Arg	Tyr	Ile	Leu	Gly	Ala	Ser	Ile	Leu	Gln	Ile	Ser
		130				135						140			
Ile	Pro	Ala	Phe	Ile	Phe	Ala	Thr	Leu	Leu	Gln	Tyr	Val	Phe	Ala	Val
145					150					155					160
Lys	Ile	Pro	Leu	Leu	Pro	Ile	Ala	Cys	Trp	Gly	Ser	Phe	Thr	His	Thr
			165					170						175	
Ile	Leu	Pro	Thr	Leu	Ala	Leu	Ala	Val	Thr	Pro	Met	Ala	Phe	Ile	Ile
		180					185						190		
Gln	Leu	Thr	Tyr	Ser	Ser	Val	Ser	Ala	Ala	Leu	Asn	Lys	Asp	Tyr	Val
		195					200					205			
Leu	Leu	Ala	Tyr	Ala	Lys	Gly	Leu	Ser	Pro	Leu	Lys	Val	Val	Ile	Lys
	210					215					220				
His	Ile	Leu	Pro	Tyr	Ala	Ile	Phe	Pro	Thr	Ile	Ser	Tyr	Ser	Ala	Phe
225					230					235					240
Leu	Thr	Thr	Thr	Val	Ile	Thr	Gly	Thr	Phe	Ala	Ile	Glu	Asn	Ile	Phe
				245					250					255	
Cys	Ile	Pro	Gly	Leu	Gly	Lys	Trp	Phe	Ile	Cys	Ser	Ile	Lys	Gln	Arg
		260					265						270		
Asp	Tyr	Pro	Val	Ala	Leu	Gly	Leu	Ser	Val	Phe	Tyr	Gly	Thr	Tyr	Leu
	275					280						285			
Cys	Ser	Leu	Leu	Tyr	Phe	Leu	Thr								
	290					295									

<210>219

<211>284

<212>PRT

<213>Chlamydia pneumoniae

<400>219

Met	Asp	Asn	Tyr	Leu	Leu	Asn	Ile	Lys	Asp	Leu	Thr	Ile	Thr	Ser	Thr
1				5					10					15	
Asn	Pro	Lys	Arg	Thr	Leu	Ile	Glu	Asn	Leu	Ser	Leu	Gln	Leu	Lys	Glu
			20					25					30		
Asn	Arg	Asn	Leu	Ala	Leu	Val	Gly	Glu	Ser	Gly	Ser	Gly	Lys	Thr	Thr
		35					40					45			
Ile	Thr	Lys	Ala	Ile	Leu	Gly	Phe	Leu	Pro	Glu	Asn	Cys	Leu	Ile	Lys
	50				55						60				
Thr	Gly	Ser	Ile	Leu	Phe	Glu	Asp	Ile	Asp	Ile	Thr	Lys	Leu	Ser	Pro
65				70						75					80
Lys	Glu	Leu	His	Lys	Ile	Arg	Gly	Gln	Lys	Ile	Ala	Thr	Ile	Leu	Gln
			85						90					95	
Asn	Ala	Met	Gly	Ser	Leu	Thr	Pro	Ser	Met	Arg	Ile	Gly	Met	Gln	Ile
		100						105					110		
Ile	Glu	Thr	Leu	Arg	Gln	His	His	Lys	Met	Asn	Lys	Glu	Glu	Ala	Tyr
	115				120							125			
Asn	Lys	Ala	Met	Gln	Leu	Leu	Thr	Asp	Val	Cys	Ile	Pro	Asn	Pro	Lys
	130				135						140				
Tyr	Ser	Phe	Ser	Gln	Tyr	Pro	Phe	Glu	Leu	Ser	Gly	Gly	Met	Arg	Gln
145				150						155					160
Arg	Val	Val	Ile	Ala	Ile	Ala	Leu	Ala	Ser	Gln	Pro	Lys	Leu	Ile	Leu
			165						170					175	
Ala	Asp	Glu	Pro	Thr	Thr	Ala	Leu	Asp	Ser	Met	Ser	Gln	Ala	Gln	Val
		180						185					190		
Leu	Arg	Ile	Leu	Arg	Asn	Ile	Gln	Gln	Gln	Lys	Gln	Ala	Thr	Ile	Leu
	195					200						205			
Leu	Val	Thr	His	Asn	Leu	Ser	Leu	Val	Lys	Glu	Leu	Cys	Asn	Asp	Ile
	210				215						220				
Cys	Ile	Ile	Lys	Asp	Gly	Lys	Leu	Ile	Glu	Thr	Gly	Thr	Val	Glu	Glu
225				230						235					240
Ile	Phe	Leu	Ser	Pro	Lys	His	Pro	Tyr	Thr	Leu	Lys	Leu	Leu	Asn	Ala
			245						250					255	
Val	Ser	Lys	Ile	Pro	Ile	Lys	Lys	Thr	Ser	Ser	Pro	Ile	Leu	Lys	Asn

260 265 270
 Lys Phe Gln Pro Leu Met Ser Met Gln Gly Gly Leu
 275 280
 <210>220
 <211>293
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>220
 Val Pro Thr Ser Asn Glu Tyr Ala Arg Trp Phe Met Thr Thr Leu Leu
 1 5 10 15
 Ser Ile Lys Asp Leu Ser Leu Thr Ile Arg Gly Lys Lys Ile Leu Asn
 20 25 30
 His Ile Asn Leu Asn Leu Ile Lys Gly Ser Tyr Leu Thr Ile Val Gly
 35 40 45
 Pro Ser Gly Ser Gly Lys Ser Ser Leu Ala Leu Thr Ile Leu Asp Leu
 50 55 60
 Leu Lys Pro Thr Thr Gly Thr Ile Thr Phe His Met Asp Pro Lys Ile
 65 70 75 80
 Pro Arg Ala Arg Lys Val Gln Val Ile Trp Gln Asp Ile Asp Ser Ser
 85 90 95
 Leu Asn Pro Cys Met Ser Ile Lys Gly Ile Ile Ser Glu Pro Leu Asn
 100 105 110
 Ile Ile Gly Thr Tyr Ser Lys Ala Glu Gln Asn Lys Glu Ile Tyr Asn
 115 120 125
 Val Leu Asp Leu Val Asn Leu Pro Lys Ser Val Leu His Leu Lys Pro
 130 135 140
 Tyr Lys Leu Ser Gly Gly Gln Lys Gln Arg Ile Ala Ile Ala Lys Ala
 145 150 155 160
 Leu Val Ser Lys Pro Glu Leu Leu Ile Cys Asp Glu Pro Leu Ser Ser
 165 170 175
 Leu Asp Thr Leu Asn Gln Ser Leu Ile Leu Asp Leu Phe Gln Thr Ile
 180 185 190
 Lys Lys Glu Tyr Gln Asn Thr Leu Leu Phe Ile Thr His Asp Met Ser
 195 200 205
 Ala Ala Tyr Tyr Ile Ala Asp Thr Ile Ala Val Met Asp Gln Gly Ser
 210 215 220
 Leu Val Glu His Ala Cys Arg Glu Lys Ile Phe Ser Thr Pro Lys His
 225 230 235 240
 Thr Thr Thr Gln Asp Leu Leu Asp Ala Ile Pro Ile Phe Ser Leu Ile
 245 250 255
 Ser Thr Glu Met Glu Pro Ser Glu Glu Tyr Glu Leu Gln Val Ala Ser
 260 265 270
 Lys Xaa Ile Asp Leu Glu Ile Thr Asn Ser Tyr Arg Lys Ile Arg Ile
 275 280 285
 Phe Asp Val Ser Gln
 290

<210>221

<211>279

<212>PRT

<213>Chlamydia pneumoniae

<400>221

Ile Val Pro Leu Pro Gln Lys Asn Asn Lys Glu Thr Ser Cys Met Asn
 1 5 10 15
 Thr Tyr Thr Phe Ser Pro Thr Leu Gln Lys Ser Phe Ser Leu Phe Leu
 20 25 30
 Leu Glu Lys Leu Asp Ser Tyr Phe Phe Gly Gly Thr Arg Thr Gln
 35 40 45
 Ile Leu Val Ile Thr Pro Thr Asn Ile Arg Leu Ala Ala Lys Lys Arg
 50 55 60
 Gly Cys Lys Val Ser Thr Ile Glu Lys Ile Ile Lys Ile Leu Ser Phe
 65 70 75 80
 Ile Leu Leu Pro Leu Val Ile Ile Ala Phe Ile Leu Arg Tyr Phe Leu
 85 90 95
 His Lys Lys Phe Asp Lys Gln Phe Leu Cys Ile Pro Lys Val Ile Ser

	100		105		110										
Asn	Glu	Asp	Glu	Ala	Leu	Leu	Gly	Ser	Arg	Pro	Gln	Ala	Val	Glu	Lys
	115		120		125										
Ala	Val	Arg	Glu	Ile	Ser	Pro	Ala	Phe	Phe	Ser	Ile	Pro	Arg	Lys	Tyr
	130		135		140										
Gln	Leu	Ile	Arg	Ile	Asp	Thr	Pro	Lys	Asp	Asp	Ala	Pro	Ser	Ile	Leu
145			150		155				155						160
Phe	Pro	Ile	Gly	Ile	Glu	Ile	Ile	Leu	Lys	Asp	Leu	Cys	Ile	Asp	Thr
	165		170		175										
Leu	Lys	Gln	Ser	Asn	Leu	Phe	Leu	Lys	Arg	Glu	Met	Asp	Phe	Leu	Gly
	180		185		190										
His	Pro	Glu	Lys	Ala	Leu	Phe	Asp	Ser	Ile	Cys	Ser	Ile	Glu	Lys	
	195		200		205										
Asp	Gln	Glu	Trp	Met	Ser	Leu	Glu	Ser	Lys	Lys	Leu	Leu	Ile	Thr	His
	210		215		220										
Phe	Leu	Lys	Tyr	Leu	Phe	Val	Ser	Gly	Ile	Glu	Gln	Leu	Asn	Pro	Gly
225			230		235										240
Phe	Asn	Pro	Glu	Asn	Gly	Arg	Gly	Tyr	Phe	Ser	Glu	Ile	Ser	Thr	Ala
	245		250		255										
Lys	Ile	His	Phe	His	Gln	His	Gly	Arg	Tyr	Gly	Pro	Ile	Arg	Ser	Ser
	260		265		270										
Gly	Pro	Ile	Met	Lys	Glu	Ile									
	275														

<210>222

<211>272

<212>PRT

<213>Chlamydia pneumoniae

<400>222

Ile	Val	Asp	Arg	Arg	Ser	Pro	Ala	Cys	Tyr	Asp	Ser	Ile	Asn	Ser	Asp
1			5						10					15	
Ala	Ile	Gly	Val	Ser	Leu	Leu	Met	Asp	Ile	Ser	His	Ile	Leu	Glu	Asp
	20		25						30						
Leu	Ala	Tyr	Asp	Glu	Gly	Ile	Leu	Pro	Arg	Glu	Ala	Ile	Glu	Ala	Ala
	35		40						45						
Ile	Val	Lys	Gln	Met	Gln	Ile	Thr	Pro	Tyr	Leu	Leu	His	Ile	Leu	His
	50		55						60						
Asp	Ala	Thr	Gln	Arg	Val	Pro	Glu	Ile	Val	Asn	Asp	Gly	Ser	Tyr	Gln
65			70						75						80
Gly	His	Leu	Tyr	Ala	Met	Tyr	Leu	Leu	Ala	Gln	Phe	Arg	Glu	Ser	Arg
	85		90						95						
Ala	Leu	Pro	Leu	Ile	Ile	Lys	Leu	Phe	Ala	Phe	Glu	Asp	Asp	Thr	Pro
	100		105						110						
His	Ala	Ile	Ala	Gly	Asp	Val	Leu	Thr	Glu	Asp	Leu	Pro	Arg	Ile	Leu
	115		120						125						
Ala	Ser	Val	Cys	Asn	Asp	Asp	Ser	Leu	Ile	Lys	Glu	Leu	Ile	Glu	Thr
	130		135						140						
Pro	Lys	Ile	Asn	Pro	Tyr	Val	Lys	Ala	Ala	Ala	Ile	Ser	Gly	Leu	Val
145			150						155						160
Thr	Leu	Val	Gly	Ala	Gly	Lys	Ile	Pro	Arg	Asp	Lys	Val	Ile	Arg	Xaa
	165		170						175						
Phe	Ala	Glu	Leu	Leu	Asn	Tyr	Arg	Leu	Glu	Lys	Gln	Pro	Ser	Phe	Ala
	180		185						190						
Trp	Asp	Asn	Leu	Ile	Ala	Gly	Ile	Cys	Thr	Leu	Tyr	Pro	Gly	Glu	Leu
	195		200						205						
Phe	Tyr	Pro	Ile	Ser	Lys	Ala	Phe	Asp	Gly	Gly	Leu	Val	Asp	Thr	Ser
	210		215						220						
Phe	Ile	Ser	Met	Glu	Asp	Val	Glu	Asn	Ile	Ile	His	Glu	Glu	Thr	Val
225			230						235						240
Glu	Ser	Cys	Ile	His	Thr	Leu	Cys	Ser	Ser	Thr	Glu	Leu	Ile	Asn	Asp
	245		250						255						
Thr	Leu	Glu	Glu	Met	Glu	Lys	Trp	Leu	Glu	Asp	Phe	Pro	Ile	Glu	Pro
	260		265						270						

<210>223

<211>246

<212>PRT

<213>Chlamydia pneumoniae

<400>223

Val Asn Lys Lys Lys Arg Phe Leu Ser Leu Leu Phe Leu Thr Ala Val
 1 5 10 15
 Leu Leu Gly Ile Trp Phe Ser Pro His Pro Ala Ser Ile Asn Ser Asn
 20 25 30
 Ala Trp Gln Leu Phe Ala Ile Phe Thr Thr Thr Ile Met Gly Ile Ile
 35 40 45
 Phe Gln Pro Val Pro Met Gly Ala Ile Ala Ile Ile Gly Ile Ser Thr
 50 55 60
 Leu Leu Leu Thr Gln Thr Leu Thr Leu Glu Gln Gly Leu Ser Gly Phe
 65 70 75 80
 His Asn Pro Ile Ala Trp Leu Val Phe Leu Ser Phe Ser Ile Ala Lys
 85 90 95
 Gly Ile Ile Lys Thr Gly Leu Gly Glu Arg Ile Ala Tyr Phe Phe Val
 100 105 110
 Ser Ala Leu Gly Lys Ser Pro Leu Gly Leu Ser Tyr Gly Leu Val Ile
 115 120 125
 Thr Asp Phe Phe Leu Ala Pro Ala Ile Pro Ser Val Thr Ala Arg Ala
 130 135 140
 Gly Gly Ile Leu Tyr Pro Val Val Thr Ser Leu Ser Asp Ser Phe Gly
 145 150 155 160
 Ser Ser Ala Glu Lys Gly Thr Gln Asp Leu Ile Gly Ser Phe Leu Ile
 165 170 175
 Lys Val Ala Tyr Gln Ser Ser Val Ile Thr Ser Ala Met Phe Leu Thr
 180 185 190
 Ala Met Ala Gly Asn Pro Leu Val Ala Ala Leu Ala Gly His Val Gly
 195 200 205
 Val Ser Leu Ser Trp Val Leu Trp Ala Lys Ala Ala Ile Ile Pro Gly
 210 215 220
 Leu Leu Ser Leu Phe Leu Met Pro Ile Ile Leu Tyr Lys Leu Tyr Pro
 225 230 235 240
 Pro Lys Asn His Ile Leu
 245

<210>224

<211>123

<212>PRT

<213>Chlamydia pneumoniae

<400>224

Leu Ser Pro Arg Gly Leu Phe Pro Lys Ala Leu Thr Lys Lys Tyr Ala
 1 5 10 15
 Ile Arg Ser Pro Ser Pro Val Phe Met Ile Pro Phe Ala Ile Glu Lys
 20 25 30
 Glu Arg Lys Thr Asn His Ala Ile Gly Leu Trp Asn Pro Asp Asn Pro
 35 40 45
 Cys Ser Arg Val Asn Val Cys Val Ser Ser Ser Val Glu Ile Pro Ile
 50 55 60
 Met Ala Ile Ala Pro Met Gly Thr Gly Trp Lys Met Ile Pro Met Ile
 65 70 75 80
 Val Val Val Asn Ile Ala Lys Ser Cys Gln Ala Leu Glu Phe Ile Asp
 85 90 95
 Ala Gly Trp Gly Glu Asn Gln Met Pro Lys Ser Thr Ala Val Arg Lys
 100 105 110
 Arg Arg Asp Lys Lys Arg Phe Phe Leu Phe Thr
 115 120

<210>225

<211>550

<212>PRT

<213>Chlamydia pneumoniae

<400>225

Met His Pro Leu Tyr Val Asp Leu Asp Thr Ile Ile Ser Ser Tyr Ser
 1 5 10 15
 Pro Pro Leu Pro Lys Glu Phe Gln Glu Ala Ala Ser Leu Ile Ala Val

20					25					30						
Pro	Asp	Thr	Ser	His	Ser	Lys	Pro	Val	Val	Pro	Gly	Val	Lys	Thr	Leu	
35					40					45						
Phe	Pro	Gln	Thr	Tyr	His	Leu	Pro	Tyr	Leu	Lys	Phe	Val	Gln	Gly	Glu	
50					55					60						
Asn	Val	Val	His	Thr	Pro	Leu	Lys	Val	Gly	Val	Met	Phe	Ser	Gly	Gly	
65					70					75					80	
Pro	Ala	Pro	Gly	Gly	His	Asn	Val	Ile	Gln	Gly	Leu	Phe	Asn	Ser	Leu	
85					90					95						
Lys	Asp	Phe	His	Pro	Asp	Ser	Ser	Leu	Val	Gly	Phe	Val	Asn	Asn	Gly	
100					105					110						
Asp	Gly	Leu	Thr	Asn	Asn	Lys	Ser	Ile	Asp	Ile	Thr	Glu	Glu	Phe	Leu	
115					120					125						
Ser	Lys	Phe	Arg	Asn	Ser	Gly	Gly	Phe	Asn	Cys	Ile	Gly	Thr	Gly	Arg	
130					135					140						
Lys	Lys	Ile	Val	Thr	Pro	Glu	Ala	Lys	Glu	Ala	Cys	Leu	Lys	Thr	Ala	
145					150					155					160	
Glu	Ala	Leu	Asp	Leu	Asp	Gly	Leu	Val	Ile	Ile	Gly	Gly	Asp	Gly	Ser	
165					170					175						
Asn	Thr	Ala	Thr	Ala	Ile	Leu	Ala	Glu	Tyr	Phe	Ala	Lys	Arg	Arg	Pro	
180					185					190						
Lys	Thr	Ser	Ile	Val	Gly	Val	Pro	Lys	Thr	Ile	Asp	Gly	Asp	Leu	Gln	
195					200					205						
His	Thr	Phe	Leu	Asp	Leu	Ala	Phe	Gly	Phe	Asp	Thr	Ala	Thr	Lys	Phe	
210					215					220						
Tyr	Ser	Ser	Ile	Ile	Ser	Asn	Ile	Ser	Arg	Asp	Ala	Leu	Ser	Cys	Lys	
225					230					235					240	
Ala	His	Tyr	His	Phe	Ile	Lys	Leu	Met	Gly	Arg	Ser	Ala	Ser	His	Ile	
245					250					255						
Ala	Leu	Glu	Cys	Ala	Leu	Gln	Thr	His	Pro	Asn	Ile	Ala	Leu	Ile	Gly	
260					265					270						
Glu	Glu	Ile	Ala	Glu	Lys	Asn	Leu	Pro	Leu	Lys	Thr	Ile	Ile	His	Lys	
275					280					285						
Ile	Cys	Ser	Val	Ile	Ala	Asp	Arg	Ala	Ala	Met	Glu	Lys	Tyr	Tyr	Gly	
290					295					300						
Val	Ile	Leu	Ile	Pro	Glu	Gly	Ile	Ile	Glu	Phe	Ile	Pro	Glu	Ile	Ile	
305					310					315					320	
Asn	Leu	Ile	Thr	Glu	Ile	Glu	Ser	Leu	Ser	Glu	Tyr	Glu	Asp	Lys	Ile	
325					330					335						
Ser	Arg	Leu	Ser	Pro	Glu	Ser	Gln	Arg	Leu	Leu	Lys	Ser	Phe	Pro	Ala	
340					345					350						
Pro	Ile	Ile	Glu	Gln	Ile	Leu	Asn	Asp	Arg	Asp	Ala	His	Gly	Asn	Val	
355					360					365						
Tyr	Val	Ser	Lys	Ile	Ser	Val	Asp	Lys	Leu	Leu	Ile	His	Leu	Val	Ser	
370					375					380						
Asn	His	Leu	Gln	Gln	Tyr	Phe	Pro	Asn	Val	Pro	Phe	Asn	Ala	Ile	Ser	
385					390					395					400	
His	Phe	Leu	Gly	Tyr	Glu	Gly	Arg	Ser	Gly	Leu	Pro	Thr	Lys	Phe	Asp	
405					410					415						
Asn	Thr	Tyr	Gly	Tyr	Ser	Leu	Gly	Tyr	Gly	Ala	Gly	Ile	Leu	Val	Arg	
420					425					430						
Asn	His	Cys	Asn	Gly	Tyr	Leu	Ser	Thr	Ile	Glu	Ser	Leu	Ala	Cys	Pro	
435					440					445						
Phe	Met	Lys	Trp	Lys	Leu	Arg	Ala	Ile	Pro	Val	Val	Lys	Met	Phe	Thr	
450					455					460						
Val	Lys	Gln	Gln	Ala	Asp	Gly	Thr	Leu	Gln	Pro	Lys	Ile	Lys	Lys	Tyr	
465					470					475					480	
Leu	Val	Asp	Ile	Gly	Ser	Thr	Ala	Phe	Arg	Lys	Phe	Lys	Leu	Tyr	Arg	
485					490					495						
Lys	Ile	Trp	Ala	Leu	Glu	Asp	Ser	Tyr	Arg	Phe	Leu	Gly	Pro	Leu	Gln	
500					505					510						
Ile	Glu	Thr	Pro	Pro	Glu	Met	His	Ser	Asp	Asn	Phe	Pro	Pro	Leu	Thr	
515					520					525						
Leu	Leu	Leu	Asn	His	Asn	Phe	Trp	Gln	Arg	His	Gln	Gly	Cys	Ile	Glu	

530 535 540
 Ile Pro Asp Thr Thr Tyr
 545 550
 <210>226
 <211>322
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>226
 Tyr Gln Lys Leu Trp Glu Arg Glu Arg Glu Tyr Phe Lys Thr Ile Arg
 1 5 10 15
 Glu Lys Glu His Ala Thr Ile Ser Thr Met Leu Val Glu Leu Glu Ala
 20 25 30
 Leu Lys Arg Glu Phe Ala His Leu Lys Asp Gln Lys Pro Thr Ser Asp
 35 40 45
 Gln Glu Ile Thr Ser Leu Tyr Gln Cys Leu Asp His Leu Glu Phe Val
 50 55 60
 Leu Leu Gly Leu Gly Gln Asp Lys Phe Leu Lys Ala Thr Glu Asp Glu
 65 70 75 80
 Asp Val Leu Phe Glu Ser Gln Lys Ala Ile Asp Ala Trp Asn Ala Leu
 85 90 95
 Leu Thr Lys Ala Arg Asp Val Leu Gly Leu Gly Asp Ile Gly Ala Ile
 100 105 110
 Tyr Gln Thr Ile Glu Phe Leu Gly Ala Tyr Leu Ser Lys Val Asn Arg
 115 120 125
 Arg Ala Phe Cys Ile Ala Ser Glu Ile His Phe Leu Lys Thr Ala Ile
 130 135 140
 Arg Asp Leu Asn Ala Tyr Tyr Leu Leu Asp Phe Arg Trp Pro Leu Cys
 145 150 155 160
 Lys Ile Glu Glu Phe Val Asp Trp Gly Asn Asp Cys Val Glu Ile Ala
 165 170 175
 Lys Arg Lys Leu Cys Thr Phe Glu Lys Glu Thr Lys Glu Leu Asn Glu
 180 185 190
 Ser Leu Leu Arg Glu Glu His Ala Met Glu Lys Cys Ser Ile Gln Asp
 195 200 205
 Leu Gln Arg Lys Leu Ser Asp Ile Ile Ile Glu Leu His Asp Val Ser
 210 215 220
 Leu Phe Cys Phe Ser Lys Thr Pro Ser Gln Glu Glu Tyr Gln Lys Asp
 225 230 235 240
 Cys Leu Tyr Gln Ser Arg Leu Arg Tyr Leu Leu Leu Tyr Glu Tyr
 245 250 255
 Thr Leu Leu Cys Lys Thr Ser Thr Asp Phe Gln Glu Gln Ala Arg Ala
 260 265 270
 Lys Glu Glu Phe Ile Arg Glu Lys Phe Ser Leu Leu Glu Leu Glu Lys
 275 280 285
 Gly Ile Lys Gln Thr Lys Glu Leu Glu Phe Ala Ile Ala Lys Ser Lys
 290 295 300
 Leu Glu Arg Gly Cys Leu Val Met Arg Lys Tyr Glu Xaa Pro Leu Asn
 305 310 315 320
 Ile Val

<210>227

<211>101

<212>PRT

<213>Chlamydia pneumoniae

<400>227

Glu Cys Val Met Ser Tyr Pro Asp Ile Ser Asn Val Gln Ala Ser Ser
 1 5 10 15
 Ile Gln Ser Ala Leu Leu His Lys Thr Ser Asp Gln Ile Gln Gln Lys
 20 25 30
 Arg Cys Phe Lys Gln Ser Thr Phe Val Ile Leu Ala Val Ser Leu Val
 35 40 45
 Ile Ile Gly Ser Leu Phe Leu Leu Ala Gly Val Ala Ile Leu Thr Val
 50 55 60
 Phe Ser His Gly Val Leu Ser Leu Val Phe Gly Val Leu Gly Ile Val

<400>229

Arg Met Tyr Phe Ser His Val Ser Thr Val Val Val Val Ala Leu Phe
 1 5 10 15
 Ile Leu Gly Ile Phe Phe Leu Ser Gly Ser Leu Ala Phe Leu Val His
 20 25 30
 Thr Ser Cys Gly Val Leu Leu Gly Ala Ala Leu Pro Ile Leu Cys Ile
 35 40 45
 Gly Leu Val Leu Leu Ala Val Ala Leu Ile Val Phe Leu Cys His Lys
 50 55 60
 His Lys Thr Arg Gln Asp Leu Asp Tyr Tyr Asp Gln Asp Leu Asp Ser
 65 70 75 80
 Leu Val Ile His Lys Lys Glu Ile Pro Asn Asp Ile Ser Glu Leu Arg
 85 90 95
 Val Thr Phe Glu Lys Leu Gln Asn Leu Phe Gln Phe His Thr Lys Asp
 100 105 110
 Phe Ser Asp Leu Ser Gln Glu Leu Gln Gly Lys Phe Ile Asn Cys Met
 115 120 125
 Glu Lys Trp Leu Thr Leu Glu Asp Glu Val Thr Lys Phe Leu Ile Val
 130 135 140
 Arg Asp Arg Phe Leu Glu Thr Arg Arg Asn Phe Thr Thr Phe Gly Glu
 145 150 155 160
 Gln Val Lys Gly Ile Gln Ser Asn Ile Phe Asp Leu His Glu Glu Lys
 165 170 175
 Ser Ser Leu Tyr Leu Glu Leu Tyr Arg Leu Arg Lys Asp Leu Gln Val
 180 185 190
 Leu Leu Asn Phe Phe Leu Leu Pro Pro Gly Ile Leu Lys Val Asp Tyr
 195 200 205
 Asp Glu Ile Glu Ala Ile Lys Gly Leu Phe Ile Arg Leu Thr Ser Arg
 210 215 220
 Leu Asp Lys Leu Asp Val Lys Ala Gln Glu Arg Lys Lys Phe Ile Asn
 225 230 235 240
 Glu Met Ser Arg Glu Phe Lys Glu Val Glu Lys Ala Phe Asp Ile Val
 245 250 255
 Asp Arg Ala Thr Lys Lys Leu Met Asp Arg Ala Lys Lys Glu Ser Pro
 260 265 270
 Ala Arg Leu Phe Met Gly Arg Thr Glu Ser Leu Leu Glu Met Lys Lys
 275 280 285
 Asn Glu Glu Ala Leu Lys Asn Gln Gly Leu Asp Pro Glu Asn Leu Ser
 290 295 300
 His Pro Glu Leu Phe Ser Pro Tyr Gln Gln Leu Ile Leu Asn Tyr
 305 310 315 320
 Leu Asn Ser Glu Ile Val Leu His His Tyr Glu Phe Leu Ile Ser Gly
 325 330 335
 Thr Val Thr Ser Gly Leu Thr Leu Glu Glu Cys Glu Asn Arg Met Arg
 340 345 350
 Ala Ala Ser Thr Gly Leu Asn Ala Leu Leu Val Arg Lys Leu Gln Phe
 355 360 365
 Arg Gly Ala Ile Lys Ser Ala Tyr Phe Glu Lys Leu Thr Glu Ile Glu
 370 375 380
 Lys Glu Leu Arg Ser Leu Gln Asp Val Ile Xaa Ser Leu Glu Leu Glu
 385 390 395 400
 Leu Ile His Lys Ile Lys Asp Ile Val Thr Glu Glu Thr
 405 410

<210>230

<211>193

<212>PRT

<213>Chlamydia pneumoniae

<400>230

Ile Cys Phe Lys Arg Arg Lys Asp Arg Thr Gly Met Leu Ser Arg Gln
 1 5 10 15
 Lys Glu Ser Arg Glu Thr Gly Gly Val Ser Arg Ser Tyr Arg Arg Glu
 20 25 30
 Leu Leu Glu Val Leu Lys Thr Arg Leu Ser Val Glu Lys Glu Ile Gln
 35 40 45

Leu Phe Glu Glu Val Val Ser Ala Phe Glu Glu Lys Leu Ala Ser Leu
 50 55 60
 His Arg Thr Val Phe Ser Glu Glu Glu Leu Gln Glu Ala Leu Asp Lys
 65 70 75 80
 Ala Lys Ala Glu Leu Leu Asp Ile Gln Val Arg Lys Ser Val Val Glu
 85 90 95
 Asp Leu Ser Cys Glu Pro Thr Leu Ile Gln Tyr His Leu Leu Arg Leu
 100 105 110
 Tyr Glu Val Gln Cys Arg Ile Val Glu Gln Phe Leu Thr Gln Thr Phe
 115 120 125
 Ser Ser Glu Gln Glu Lys Val Leu Glu Glu Tyr Glu Ala Leu Lys Ala
 130 135 140
 Arg Ile Arg Lys Thr Leu Arg Val Lys Leu Asp Gln Val Arg Ala Asn
 145 150 155 160
 Val Ala Phe Val Ala Ser Thr Thr Asp Leu Leu Ser Glu Ser Glu Ser
 165 170 175
 Leu Asp Gly Asn Asp Ser Val Phe Glu Asp Ala His Asp Asp Phe Leu
 180 185 190
 Asp

<210>231

<211>267

<212>PRT

<213>Chlamydia pneumoniae

<400>231

Leu Thr Ser Ser Lys Lys Gln Val Met Ser Ser Ala Ile Ala Arg Asp
 1 5 10 15
 Cys Phe Pro Ser Pro Ser Pro Gln Pro Ser Ser Thr Leu Gly Val His
 20 25 30
 Pro Pro Lys Tyr Lys Ser Leu Ile Leu Ser Val Ser Leu Ile Val Leu
 35 40 45
 Gly Val Leu Leu Leu Cys Val Gly Met Leu Leu Leu Val Asn Ala Ile
 50 55 60
 Phe Ser Phe Ser Val Leu Thr Val Gly Leu Gly Gly Ala Gly Val Phe
 65 70 75 80
 Leu Gly Ser Leu Leu Leu Ile Leu Gly Leu Ile Phe Phe Val Ser Tyr
 85 90 95
 His Arg Lys Leu Ser Glu Ala Thr Arg Ser Leu Glu Gln Lys Ile Thr
 100 105 110
 Leu Glu Tyr Gln Pro Trp Ala Asp Leu Arg Lys Glu Leu Asn Glu Val
 115 120 125
 Gln Glu Trp Ser Asn Phe Leu Leu Asp Glu Trp Glu Asp Phe Lys Glu
 130 135 140
 Val Val Ala Gln His Lys Ser Gln Phe Ala Thr Phe Glu Gly Asp Leu
 145 150 155 160
 Leu Leu Phe Gly Arg Glu Val Glu Lys Tyr Glu Thr Ile Trp Lys Glu
 165 170 175
 Leu Asp Gly Arg Asp Val Ala Leu Leu Thr Glu Leu Lys Asn Ile Trp
 180 185 190
 Gly Pro Leu Glu Phe Leu Arg Lys Lys Gly Asp Arg Leu Gln Cys Glu
 195 200 205
 Ile Asp Lys Leu Arg Lys Glu Val Met Lys Val Gly Lys Ser Gly Leu
 210 215 220
 Lys Leu Ala Cys Glu Leu Thr Lys Phe Lys Ser Ala Leu Lys Asp Val
 225 230 235 240
 Lys Ile Glu Gln Glu Cys Tyr Arg Asp Lys Arg Lys Val Glu Lys Leu
 245 250 255
 Glu Val Phe Pro Glu Val Ile Gly Gly Asn Tyr
 260 265

<210>232

<211>150

<212>PRT

<213>Chlamydia pneumoniae

<400>232

Asn Lys Ala Arg Thr Met Asn Pro Val Thr Phe Asp Arg Ile Gln Val
 1 5 10 15
 Asp Phe Ile Pro Glu Asp Thr Ser Leu Arg Ile Asn Ser Tyr Ile Val
 20 25 30
 Ala Gly Gly Leu Leu Ile Leu Gly Val Val Leu Ser Ile Leu Ser Val
 35 40 45
 Ile Cys Leu Asp Ile Gly Leu Val Gly Leu Ser Ala Gly Ala Ala Phe
 50 55 60
 Thr Leu Gly Leu Gly Cys Leu Ile Phe Ala Leu Phe Leu Phe Ser Phe
 65 70 75 80
 Ser Leu Ile Leu Leu Leu Ser Gln Glu Lys Arg Val Pro Asp Val Leu
 85 90 95
 Ser Leu Tyr Leu Glu Lys Glu Val Pro Gln Tyr Glu Thr Pro Leu Tyr
 100 105 110
 Lys Glu Asp Leu Glu Ser Glu Arg Asp Met Ser Ala Ile Ser Glu Arg
 115 120 125
 Leu Gly Ile Ile Glu Glu Lys Leu Arg Ile Ala Glu Lys Phe Arg Tyr
 130 135 140
 Ser Asp Ser Val Phe Val
 145 150
 <210>233
 <211>375
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>233
 Gly Ser Ser Leu Ala Leu Lys Phe His Leu Ile His Gln Ser Lys Lys
 1 5 10 15
 Ser Gln Ala Arg Val Gly Gln Ile Glu Thr Ser His Gly Val Ile Asp
 20 25 30
 Thr Pro Ala Phe Val Pro Val Ala Thr His Gly Ala Leu Lys Gly Val
 35 40 45
 Ile Asp His Ser Asp Ile Pro Leu Leu Phe Cys Asn Thr Tyr His Leu
 50 55 60
 Leu Leu His Pro Gly Pro Glu Ala Val Ala Lys Leu Gly Gly Leu His
 65 70 75 80
 Gln Phe Met Gly Arg Gln Ala Pro Ile Ile Thr Asp Ser Gly Gly Phe
 85 90 95
 Gln Ile Phe Ser Leu Ala Tyr Gly Ser Val Ala Glu Glu Ile Lys Ser
 100 105 110
 Cys Gly Lys Lys Lys Gly Met Ser Ser Leu Val Lys Ile Thr Asp Glu
 115 120 125
 Gly Ala Trp Phe Lys Ser Tyr Arg Asp Gly Arg Lys Leu Phe Leu Ser
 130 135 140
 Pro Glu Leu Ser Val Gln Ala Gln Lys Asp Leu Gly Ala Asp Ile Ile
 145 150 155 160
 Ile Pro Leu Asp Glu Leu Leu Pro Phe His Thr Asp Gln Glu Tyr Phe
 165 170 175
 Leu Thr Ser Cys Ser Arg Thr Tyr Val Trp Glu Lys Arg Ser Leu Glu
 180 185 190
 Tyr His Arg Lys Asp Pro Arg His Gln Ser Met Tyr Gly Val Ile His
 195 200 205
 Gly Gly Leu Asp Pro Glu Gln Arg Arg Ile Gly Val Arg Phe Val Glu
 210 215 220
 Asp Glu Pro Phe Asp Gly Ser Ala Ile Gly Gly Ser Leu Gly Arg Asn
 225 230 235 240
 Leu Gln Glu Met Ser Glu Val Val Lys Ile Thr Thr Ser Phe Leu Ser
 245 250 255
 Lys Glu Arg Pro Val His Leu Leu Gly Ile Gly Asp Leu Pro Ser Ile
 260 265 270
 Tyr Ala Met Val Gly Phe Gly Ile Asp Ser Phe Asp Ser Ser Tyr Pro
 275 280 285
 Thr Lys Ala Ala Arg His Gly Leu Ile Leu Ser Lys Ala Gly Pro Ile
 290 295 300
 Lys Ile Gly Gln Gln Lys Tyr Ser Gln Asp Ser Ser Thr Ile Asp Pro

Ile Leu Gly Asn Ile Gly Ala Gly Arg Leu Tyr Ser Val Trp Tyr
 65 70 75 80
 Thr Ser Asp Glu Asp Trp Lys Lys Gln Val Val
 85 90

<210>237

<211>100

<212>PRT

<213>Chlamydia pneumoniae

<400>237

Arg Gly Met Leu Pro Ala Trp Val Thr Pro Gly Phe Leu Thr Lys Leu
 1 5 10 15
 Ala Glu Gly Leu Lys Ile Asn Ser Gly Arg Ser Val Asn Pro Lys Gly
 20 25 30
 Leu Glu Gln Cys Ile Ala Ser Gly Gln Tyr Asn Glu Gln Ile Lys Lys
 35 40 45
 Asn Asn Leu Tyr Gly Ser Gln Val Leu Gly Gly Gln Leu Ala Thr Pro
 50 55 60
 Thr Ala Val Val Gly Asp Tyr Leu Ile Glu Asp Pro Thr Phe His Glu
 65 70 75 80
 Ile Glu Arg Ala Ile Gln His Ile Arg Gln Leu Gln Ala Val Glu Gly
 85 90 95
 Asp His Asp Asp
 100

<210>238

<211>140

<212>PRT

<213>Chlamydia pneumoniae

<400>238

Gln Ile Leu Phe Thr Ser Pro Leu Asn Lys Lys Xaa Leu Val Leu Cys
 1 5 10 15
 Thr Ala Met Phe Phe Ile Val Cys Phe Gly Phe Leu Ile His Lys Lys
 20 25 30
 His Thr Ile Leu Pro Pro Lys Ala His Ile Pro Thr Asn Ala Lys His
 35 40 45
 Phe Pro Thr Ile Gly Asn Pro Tyr Ala Pro Ile Asn Ile Thr Val Phe
 50 55 60
 Glu Glu Pro Ser Cys Ser Ala Cys Ala Glu Phe Thr Thr Glu Val Phe
 65 70 75 80
 Pro Leu Leu Lys Lys His Tyr Ile Asp Thr Gly Glu Ile Ser Phe Thr
 85 90 95
 Leu Ile Pro Val Cys Phe Ile Arg Gly Ser Lys Pro Ala Ala Gln Ala
 100 105 110
 Leu Leu Cys Ile Tyr His His Asp Ser Thr Ser Gly Arg Tyr Arg Arg
 115 120 125
 Leu Tyr Gly Ile Phe Pro Ser Tyr Phe Asp Leu Ser
 130 135 140

<210>239

<211>154

<212>PRT

<213>Chlamydia pneumoniae

<400>239

Leu Phe Thr Tyr Phe Leu Ser Tyr Cys Phe Pro Asn Gln Thr Phe Ser
 1 5 10 15
 Ser Leu Val Arg Ser Pro Thr Arg His Leu Gly Tyr Pro Phe Arg Leu
 20 25 30
 Arg Cys Arg Arg Ser Pro Thr Ile Phe Ala Asn Asp Thr Leu Ile Gly
 35 40 45
 Phe Ala Ile Leu Ala Val Val Cys Ile Ser Pro Thr Arg Pro Glu Ala
 50 55 60
 Leu Glu Val Gly Pro Thr Leu Pro Glu Gly Phe Ser Tyr Asn Pro Ser
 65 70 75 80
 Ala Gly Gly Arg Arg Ala Ala Val Leu Phe Leu Ser Leu Leu Gly Trp
 85 90 95
 Leu Glu Ala Arg Tyr Leu Thr Ala Ser Ser Leu Gly Ile Thr Ser Ser

100 105 110
 Gln Ser Ser Asn Phe Leu Leu Leu Tyr Ser Ser Ile Met Thr Val Tyr
 115 120 125
 Ser Leu Leu Val Val Leu Ser Leu Ala Gly Ser Glu Arg Arg Trp His
 130 135 140
 Thr Arg Pro Lys Ile Val Ile Ala Thr Ala
 145 150
 <210>240
 <211>94
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>240
 Leu Leu Ala Met Leu Cys Leu Thr Ile Glu Pro Ala Leu Ala Val Val
 1 5 10 15
 Phe Ala Tyr Asp Glu Thr Arg Ala Thr Leu Arg Tyr Ile Ser Gln Phe
 20 25 30
 Leu Gly Asp Lys Arg Ala Leu Thr Arg Ala Ser Phe Phe Gly Ser Glu
 35 40 45
 Tyr Tyr Lys His Thr Leu Ser Trp Glu Glu Arg Thr Val Arg Pro Leu
 50 55 60
 Arg Lys Ala Tyr Lys Gln Ala Phe Glu Gly Ile Ser Phe Pro Ile Asn
 65 70 75 80
 Gln Leu Leu Ala Ile Leu Val Ala Ser Phe Cys Lys Ser Gln
 85 90
 <210>241
 <211>234
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>241
 Arg Phe Lys Lys Ala Leu Ile Tyr Met Ser Ser Gln Pro Leu Val Thr
 1 5 10 15
 Thr Ser Ser Ser Leu Ser Arg Tyr Val Val Leu Thr Gly Glu Glu Lys
 20 25 30
 Val Ala Cys Tyr Lys Lys Ala Phe Asn His Ile Trp His Gly Ala Pro
 35 40 45
 Ala Ile Ile Leu Ala Ala Ala Leu Leu Met Phe Cys Ile Phe Gly Phe
 50 55 60
 Val Leu Gly Ser Ile Leu Leu Gly Ala Pro Leu Glu Gly Ala Ser Ile
 65 70 75 80
 Leu Tyr Asp Val Ile Leu Pro Trp Leu Leu Pro Ser Ile Leu Val Phe
 85 90 95
 Val Leu Leu Val Leu Pro Leu Asn Ile Tyr Ala Tyr Ser His His Lys
 100 105 110
 Gln Val Leu Ala Leu His Glu Arg Ile Thr Gln Ser Asn Tyr Lys Glu
 115 120 125
 Ile Tyr Asp His Cys Glu Lys Glu Lys Lys Thr Pro Asn Lys Lys Ala
 130 135 140
 Leu Ser Leu Tyr Ile Glu Ser Gln Val Leu Val Pro Glu Tyr Ser Lys
 145 150 155 160
 Arg Phe Ser Ser Met Ile Leu Gly Lys Thr Leu Lys Ile Ile Pro Lys
 165 170 175
 Lys Asp Ser Pro Glu Ser Leu Lys His Asp Glu Leu Ile Gln Lys Ala
 180 185 190
 Leu Glu Arg Ala Lys Glu Asn Ile Tyr Met Asn Lys Asn Gln Arg Glu
 195 200 205
 Lys Arg Asp Glu Arg Glu Ala Lys Lys Glu Ala Lys Asn Ala Ser Lys
 210 215 220
 Thr Asn Pro Leu Trp Glu Gly Leu Gly Thr
 225 230
 <210>242
 <211>235
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>242

Met Leu Gln Ala His G Leu Cys Tyr Ser Cys Asp Asn Val Ile
 1 5 10 15
 Leu Lys Asp Ala Ser Phe Gln Ala Ser Pro Gly Thr Ile Thr Ile Ile
 20 25 30
 Leu Gly Ser Ser Gly Val Gly Lys Thr Thr Leu Phe Arg Leu Leu Ala
 35 40 45
 Gly Phe Leu Pro Leu Gln Glu Gly Glu Leu Leu Trp Asn Gly Ser Pro
 50 55 60
 Leu Asn Arg Lys Asp Val Ala Tyr Met Gln Gln Lys Glu Ala Leu Leu
 65 70 75 80
 Pro Trp Arg Thr Ala Leu Lys Asn Met Thr Leu Ser Thr Glu Leu Gly
 85 90 95
 Ile Asn Thr Ser His Asn Ala Leu Ser Asn Glu Arg Leu Glu Glu Ile
 100 105 110
 Ile His Asn Phe Asp Leu Gly Gln Leu Leu Asp Arg Tyr Pro Asp Glu
 115 120 125
 Leu Ser Gly Gly Gln Arg Gln Arg Ile Ala Leu Ala Ala Gln Cys Leu
 130 135 140
 Ser Leu Lys Pro Ile Leu Leu Leu Asp Glu Pro Phe Ser Ser Leu Asp
 145 150 155 160
 Val Leu Leu Lys Glu Gln Leu Tyr Gln Asp Ile Val Ala Leu Ala Lys
 165 170 175
 Lys Glu Asn Lys Thr Val Leu Leu Val Thr His Asp Phe His Asp Val
 180 185 190
 Ser Cys Leu Gly Asp Val Leu Tyr Val Ile Lys Asn Lys Thr Leu Thr
 195 200 205
 Pro Val Pro Leu Asp Pro Ser Met Arg Pro Leu Asn Asn Gly Leu Cys
 210 215 220
 Phe Ile Lys Asp Leu Lys Lys His Leu Tyr Thr
 225 230 235

<210>243

<211>301

<212>PRT

<213>Chlamydia pneumoniae

<400>243

Lys Lys Phe Leu Met Arg Arg Phe Leu Phe Leu Ile Leu Ser Ser Leu
 1 5 10 15
 Pro Leu Val Ala Phe Ser Ala Asp Asn Phe Thr Ile Leu Glu Glu Lys
 20 25 30
 Gln Ser Pro Leu Ser Arg Val Ser Ile Ile Phe Ala Leu Pro Gly Val
 35 40 45
 Thr Pro Val Ser Phe Asp Gly Asn Cys Ser Ile Pro Trp Phe Ser His
 50 55 60
 Ser Lys Lys Thr Leu Glu Gly Gln Arg Ile Tyr Tyr Ser Gly Asp Ser
 65 70 75 80
 Phe Gly Lys Tyr Phe Val Val Ser Ala Leu Trp Pro Asn Lys Val Ser
 85 90 95
 Ser Ala Val Val Ala Cys Asn Met Ile Leu Lys His Arg Val Asp Leu
 100 105 110
 Ile Leu Ile Ile Gly Ser Cys Tyr Ser Arg Ser Gln Asp Ser Arg Phe
 115 120 125
 Gly Ser Val Leu Val Ser Lys Gly Tyr Ile Asn Tyr Asp Ala Asp Val
 130 135 140
 Arg Pro Phe Phe Glu Arg Phe Glu Ile Pro Asp Ile Lys Lys Ser Val
 145 150 155 160
 Phe Ala Thr Ser Glu Val His Arg Glu Ala Ile Leu Arg Gly Gly Glu
 165 170 175
 Glu Phe Ile Ser Thr His Lys Gln Glu Ile Glu Glu Leu Leu Lys Thr
 180 185 190
 His Gly Tyr Leu Lys Ser Thr Thr Lys Thr Glu His Thr Leu Met Glu
 195 200 205
 Gly Leu Val Ala Thr Gly Glu Ser Phe Ala Met Ser Arg Asn Tyr Phe
 210 215 220
 Leu Ser Leu Gln Lys Leu Tyr Pro Glu Ile His Gly Phe Asp Ser Val

225					230					235				240
Ser	Gly	Ala	Val	Ser	Gln	Val	Cys	Tyr	Glu	Tyr	Ser	Ile	Pro	Cys
				245					250					255
Gly	Val	Asn	Ile	Leu	Leu	Pro	His	Pro	Leu	Glu	Ser	Arg	Ser	Asn
			260					265					270	Glu
Asp	Trp	Lys	His	Leu	Gln	Ser	Glu	Ala	Ser	Lys	Ile	Tyr	Met	Asp
		275					280					285		Thr
Leu	Leu	Lys	Ser	Val	Leu	Lys	Glu	Leu	Cys	Ser	Ser	His		
	290					295					300			

115 120 125
 Lys Leu Arg Ser Ser Pro Glu Ala Glu Leu Val Thr Pro Val Ala Leu
 130 135 140
 Thr Thr Asp Arg Glu Glu Ile Leu Thr Glu Lys Lys Val Lys Cys Val
 145 150 155 160
 Phe Asp Ser Glu Gly Arg Ala Leu Tyr Phe Ser Arg Ser Pro Ile Pro
 165 170 175
 Phe Ile Leu Lys Lys Ala Thr Pro Val Tyr Leu His Ile Gly Val Tyr
 180 185 190
 Ala Phe Lys Arg Glu Ala Leu Phe Arg Tyr Leu Thr Ala Xaa Leu Xaa
 195 200 205
 Ser Ser
 210
 <210>246
 <211>537
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>246
 Met Pro Phe Lys Cys Ile Phe Leu Thr Gly Gly Val Val Ser Ser Leu
 1 5 10 15
 Gly Lys Gly Leu Thr Ala Ala Ser Leu Ala Leu Ile Leu Glu Arg Gln
 20 25 30
 Arg Leu Asn Val Ala Met Leu Lys Leu Asp Pro Tyr Leu Asn Val Asp
 35 40 45
 Pro Gly Thr Met Asn Pro Phe Glu His Gly Glu Ile Tyr Val Thr Asp
 50 55 60
 Asp Gly Val Glu Thr Asp Leu Asp Leu Gly His Tyr His Arg Phe Ser
 65 70 75 80
 Ser Ala Ala Leu Ser Arg His Ser Ser Ala Thr Ser Gly Gln Ile Tyr
 85 90 95
 Ala Arg Val Ile Lys Arg Glu Arg Glu Gly Asp Tyr Leu Gly Ser Thr
 100 105 110
 Val Gln Val Ile Pro His Ile Thr Asn Glu Ile Ile Gln Val Ile Leu
 115 120 125
 Asp Ala Ala Lys Glu His Ser Pro Asp Val Leu Ile Val Glu Ile Gly
 130 135 140
 Gly Thr Ile Gly Asp Ile Glu Ser Leu Pro Phe Leu Glu Ala Ile Arg
 145 150 155 160
 Gln Phe Arg Tyr Asp His Ser Glu Asp Cys Leu Asn Ile His Met Thr
 165 170 175
 Tyr Val Pro Tyr Leu Gln Ala Ala Asp Glu Val Lys Ser Lys Pro Thr
 180 185 190
 Gln His Ser Val Gln Thr Leu Arg Gly Ile Gly Ile Ile Pro Asp Ala
 195 200 205
 Ile Leu Cys Arg Ser Glu Lys Pro Leu Thr Gln Glu Val Lys Ser Lys
 210 215 220
 Ile Ser Leu Phe Cys Asn Val Pro Asn Arg Ala Val Phe Asn Val Ile
 225 230 235 240
 Asp Val Lys His Thr Ile Tyr Glu Met Pro Leu Met Leu Ala Gln Glu
 245 250 255
 Lys Ile Ala Asn Phe Ile Gly Glu Lys Leu Lys Leu Ala Thr Val Pro
 260 265 270
 Glu Asn Leu Asp Asp Trp Arg Val Leu Val Asn Gln Leu Ser Gln Asp
 275 280 285
 Leu Pro Lys Val Lys Ile Gly Val Val Gly Lys Tyr Val Gln His Arg
 290 295 300
 Asp Ala Tyr Lys Ser Ile Phe Glu Ala Leu Thr His Ala Ala Leu Arg
 305 310 315 320
 Leu Gly His Ala Ala Glu Ile Ile Pro Ile Asp Ala Glu Asp Glu Asn
 325 330 335
 Leu Thr Met Glu Leu Ser Gln Cys Asp Ala Cys Leu Val Pro Gly Gly
 340 345 350
 Phe Gly Val Arg Gly Trp Glu Gly Lys Ile Ala Ala Ala Lys Phe Cys
 355 360 365

Arg Glu Gln Gly Ile Pro Tyr Phe Gly Ile Cys Leu Gly Met Gln Val
 370 375 380
 Leu Val Val Glu Tyr Ala Arg Asn Val Leu Asn Leu Asp Gln Ala Asn
 385 390 395 400
 Ser Leu Glu Met Asp Pro Asn Thr Pro His Pro Ile Val Tyr Val Met
 405 410 415
 Glu Gly Gln Asp Pro Leu Val Ala Thr Gly Gly Thr Met Arg Leu Gly
 420 425 430
 Ala Tyr Pro Cys Leu Leu Lys Pro Gly Ser Lys Ala His Lys Ala Tyr
 435 440 445
 Asn Glu Ser Ser Leu Ile Gln Glu Arg His Arg His Arg Tyr Glu Val
 450 455 460
 Asn Pro Asp Tyr Ile Gln Ser Leu Glu Asp His Gly Leu Arg Ile Val
 465 470 475 480
 Gly Thr Cys Pro Pro Gln Gly Leu Cys Glu Ile Ile Glu Val Ser Asp
 485 490 495
 His Pro Trp Met Ile Gly Val Gln Phe His Pro Glu Phe Val Ser Lys
 500 505 510
 Leu Ile Ser Pro His Pro Leu Phe Ile Ala Phe Ile Glu Ala Ala Leu
 515 520 525
 Val Tyr Ser Lys Asp Ala Ser His Val
 530 535

<210>247

<211>154

<212>PRT

<213>Chlamydia pneumoniae

<400>247

Met Gln Ala Met Ser Lys Pro Ser Ser Cys Lys Ala Tyr Leu Gly Ile
 1 5 10 15
 Asp Tyr Gly Lys Lys Arg Ile Gly Leu Ala Tyr Ala Ala Glu Pro Leu
 20 25 30
 Leu Leu Thr Leu Pro Ile Gly Asn Ile Glu Ala Gly Lys Asn Leu Lys
 35 40 45
 Leu Ser Ala Glu Ala Leu His Lys Ile Ile Leu Ser Arg Asn Ile Thr
 50 55 60
 Cys Val Val Leu Gly Asn Pro Leu Pro Met Gln Lys Gly Leu Tyr Ser
 65 70 75 80
 Ser Leu Gln Glu Glu Val Ser Leu Leu Ala Glu Glu Leu Lys Lys Leu
 85 90 95
 Ser Thr Val Glu Ile Ile Leu Trp Asp Glu Arg Leu Ser Ser Val Gln
 100 105 110
 Ala Glu Arg Met Leu Lys Gln Asp Cys Gly Leu Ser Arg Lys Asp Arg
 115 120 125
 Lys Gly Lys Thr Asp Ser Leu Ala Ala Thr Leu Ile Leu Thr Ser Phe
 130 135 140
 Leu Asp Ser Leu Pro Lys Lys Leu Thr Leu
 145 150

<210>248

<211>390

<212>PRT

<213>Chlamydia pneumoniae

<400>248

Met Thr Asn Val Val Gln Glu Thr Ile Gly Gly Leu Asn Ser Pro Arg
 1 5 10 15
 Thr Cys Pro Pro Cys Ile Leu Val Ile Phe Gly Ala Thr Gly Asp Leu
 20 25 30
 Thr Ala Arg Lys Leu Leu Pro Ala Leu Tyr His Leu Thr Lys Glu Gly
 35 40 45
 Arg Leu Ser Asp Gln Phe Val Cys Val Gly Phe Ala Arg Arg Glu Lys
 50 55 60
 Ser Asn Glu Leu Phe Arg Gln Glu Met Lys Gln Ala Val Ile Gln Phe
 65 70 75 80
 Ser Pro Ser Glu Leu Asp Ile Lys Val Trp Glu Asp Phe Gln Gln Arg
 85 90 95

Leu Phe Tyr His Arg Glu Phe Asp Asn Asn Met Gly Thr Ser
 100 105 110
 Leu Lys Asp Ser Leu Glu Asp Leu Asp Lys Thr Tyr Gly Thr Arg Gly
 115 120 125
 Asn Arg Leu Phe Tyr Leu Ser Thr Pro Pro Gln Tyr Phe Ser Arg Ile
 130 135 140
 Ile Glu Asn Leu Asn Lys His Lys Leu Phe Tyr Lys Asn Gln Asp Gln
 145 150 155 160
 Gly Lys Pro Trp Ser Arg Val Ile Ile Glu Lys Pro Phe Gly Arg Asp
 165 170 175
 Leu Asp Ser Ala Lys Gln Leu Gln Gln Cys Ile Asn Glu Asn Leu Asn
 180 185 190
 Glu Asn Ser Val Tyr His Ile Asp His Tyr Leu Gly Lys Glu Thr Val
 195 200 205
 Gln Asn Ile Leu Thr Thr Arg Phe Ala Asn Thr Ile Phe Glu Ser Cys
 210 215 220
 Trp Asn Ser Gln Tyr Ile Asp His Val Gln Ile Ser Leu Ser Glu Thr
 225 230 235 240
 Ile Gly Ile Gly Ser Arg Gly Asn Phe Phe Glu Lys Ser Gly Met Leu
 245 250 255
 Arg Asp Met Val Gln Asn His Met Met Gln Leu Leu Cys Leu Leu Thr
 260 265 270
 Met Glu Pro Pro Thr Thr Phe Asp Ala Asp Glu Ile Arg Lys Xaa Lys
 275 280 285
 Ile Lys Ile Leu Gln Arg Ile Ser Pro Phe Ser Glu Gly Ser Ser Ile
 290 295 300
 Val Arg Gly Gln Tyr Gly Pro Gly Thr Val Gln Gly Val Ser Val Leu
 305 310 315 320
 Gly Tyr Arg Glu Glu Glu Asn Val Asp Lys Asp Ser Arg Val Glu Thr
 325 330 335
 Tyr Val Ala Leu Lys Gln Ser Leu Ile Ile Pro Val Gly Leu Glu Phe
 340 345 350
 Leu Ser Ile Tyr Val Gln Glu Asn Asp Ser Pro Lys Asn Leu Gln Thr
 355 360 365
 Phe Leu Leu Phe Leu Lys Asn His Pro Thr Ile Tyr Leu Gln Pro Lys
 370 375 380
 Asn Val His Val Val Arg
 385 390
 <210>249
 <211>132
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>249
 Gln Arg Phe Pro Ser Arg Asp Leu Arg Ser Phe Lys Thr Val Ile Asn
 1 5 10 15
 Asn Pro Arg Trp Leu Gly Val Pro Phe Tyr Leu Arg Ala Gly Lys Arg
 20 25 30
 Leu Ala Lys Lys Ser Thr Asp Ile Ser Ile Ile Phe Lys Lys Ser Pro
 35 40 45
 Tyr Asn Leu Phe Ala Ala Glu Glu Cys Ser Arg Cys Pro Ile Glu Asn
 50 55 60
 Asp Leu Leu Ile Ile Arg Ile Gln Pro Asp Glu Gly Val Ala Leu Lys
 65 70 75 80
 Phe Asn Cys Lys Val Pro Gly Thr Asn Asn Ile Val Arg Pro Val Lys
 85 90 95
 Met Asp Phe Arg Tyr Asp Ser Tyr Phe Gln Thr Thr Thr Pro Glu Ala
 100 105 110
 Tyr Glu Arg Leu Leu Cys Asp Cys Ile Ile Gly Asp Arg Thr Phe Ile
 115 120 125
 Tyr Gly Gly Gly
 130
 <210>250
 <211>266
 <212>PRT

<213>Chlamydia pneumoniae

<400>250

Met Thr Asn Ile Gly Ile Glu Thr Met Ala Thr Leu Ile Asn Phe Asn
1 5 10 15
Asp Thr Asn Lys Leu Leu Leu Thr Lys Gln Pro Ser Leu Phe Ile Asp
20 25 30
Leu Ala Ser Lys Asp Trp Ile Ala Ser Ala Asn Gln Ala Ile Lys Gln
35 40 45
Arg Gly Ala Phe Tyr Val Ala Leu Ser Gly Gly Lys Thr Pro Leu Glu
50 55 60
Ile Tyr Lys Asp Ile Val Ile Asn Lys Asp Lys Leu Ile Asp Pro Ser
65 70 75 80
Lys Ile Phe Leu Phe Trp Gly Asp Glu Arg Leu Ala Pro Ile Thr Ser
85 90 95
Ser Glu Ser Asn Tyr Gly Gln Ala Met Ser Ile Leu Arg Asp Leu Asn
100 105 110
Ile Pro Asp Glu Gln Ile Phe Arg Met Glu Thr Glu Asn Pro Asp Gly
115 120 125
Ala Lys Lys Tyr Gln Glu Leu Ile Glu Asn Lys Ile Pro Asp Ala Ser
130 135 140
Phe Asp Met Ile Met Leu Gly Leu Gly Glu Asp Gly His Thr Leu Ser
145 150 155 160
Leu Phe Ser Asn Thr Ser Ala Leu Glu Glu Glu Asn Asp Leu Val Val
165 170 175
Phe Asn Ser Val Pro His Leu Glu Thr Glu Arg Met Thr Leu Thr Phe
180 185 190
Pro Cys Val His Lys Gly Lys His Val Val Val Tyr Val Gln Gly Glu
195 200 205
Asn Lys Lys Pro Ile Leu Lys Ser Val Phe Phe Ser Glu Gly Arg Glu
210 215 220
Glu Lys Leu Tyr Pro Ile Glu Arg Val Gly Arg Asp Arg Ser Pro Leu
225 230 235 240
Phe Trp Ile Ile Ser Pro Glu Ser Tyr Asp Ile Ala Asp Phe Asp Asn
245 250 255
Ile Ser Ser Ile Tyr Lys Met Asp Ile Leu
260 265

<210>251

<211>194

<212>PRT

<213>Chlamydia pneumoniae

<400>251

Leu Asn Ser Phe Phe Ser Phe Asn Ser Leu Asn Ser Trp His Cys Leu
1 5 10 15
Ser Ile Ile Phe Cys Ser Ser Trp Ser Cys Ser Arg Asn Tyr Cys Gly
20 25 30
Asn Asp Gly Val Cys Ala Ala Gly Gly Gly Ala Leu Leu Ile Ser Leu
35 40 45
Leu Gly Leu Trp Ile Ala Ile Val Arg Lys Ala Lys His Gln Glu Ala
50 55 60
Cys Val Gly His Leu Thr Asn Val Val Leu His Thr Ala Val Ser Glu
65 70 75 80
Ala Leu Leu His Asp Pro Ser His Phe Gln Thr Asn Ala Leu Ala Arg
85 90 95
Asp Leu Phe Leu Thr Asp Cys Leu Ser His Tyr Gly His Leu Phe Ser
100 105 110
Asn Glu Glu Val Ala Gln Leu Val Gln Gly Gly Ala Pro Gly Gly Gly
115 120 125
Ser Arg Pro Ser Gln His Tyr Gly Gly Ser Ser Asp Tyr Gln Asn Arg
130 135 140
Arg Gly Gly Asn Gly Asn Phe Gly Gly Ser His Phe Gly Gly Gly Gly
145 150 155 160
Gly Phe Ala Gly Ser His Phe Gly Ala Gly Tyr Pro Thr Ala Pro Thr
165 170 175
Met Pro Ser Ala Pro Pro Pro Phe Pro Pro Pro Ala Tyr Asp Thr Ile

180

185

Tyr Gly

<210>252

<211>167

<212>PRT

<213>Chlamydia pneumoniae

<400>252

Xaa Ala Gln Asn Leu Gly Asn Leu Phe Asn Ser Phe Gly Ile Leu Ile
 1 5 10 15
 Met Cys Phe Ser Gln Cys Lys Ser Cys Gln Thr Pro Glu Lys Glu Thr
 20 25 30
 Ser Ala Ile Val Leu Gly Ala Thr Leu Leu Phe Phe Val Ile Ala Leu
 35 40 45
 Ile Leu Gly Pro Thr Leu Gly Ala Leu Val Tyr Cys Ala Tyr Lys Val
 50 55 60
 Tyr Thr Leu Gly Lys Met Ile Tyr Ser Leu Asn Lys Ala Lys Ala Lys
 65 70 75 80
 Val Leu Arg His Pro Ala Gln Asn Val Phe His Arg Ala Ala Gly Val
 85 90 95
 Ala Thr Ile Arg Ser Ser Glu Glu Ala Val Lys Ala Cys Lys Leu Tyr
 100 105 110
 Lys Ser Ala Met Ile Gly Ser Leu Val Val Ser Leu Ile Ala Ser Leu
 115 120 125
 Ala Leu Ile Ala Leu Thr Ala Gly Ile Val Leu Val Leu Phe Phe Val
 130 135 140
 Ala Pro Gly Ala Ala Pro Val Ile Thr Ala Ala Met Met Gly Ser Ala
 145 150 155 160
 Leu Gln Val Glu Ala Leu Cys
 165

<210>253

<211>106

<212>PRT

<213>Chlamydia pneumoniae

<400>253

Lys Leu Ala Ile Ile Arg Arg Arg Arg Arg Arg Gly Lys Arg Arg Ile
 1 5 10 15
 Arg Arg Val Tyr Arg Arg Ile Gly Arg Trp Arg Phe Ser Arg Asn His
 20 25 30
 Val Ala Ala Thr Ile Ala Pro Leu Leu Met Lys Gln Ser Leu Val Thr
 35 40 45
 Trp Arg Trp Arg Arg Leu Thr Val Gln Gly Asp Phe Ala Leu Asp Ile
 50 55 60
 Ser Ile Leu Val Ile Thr Glu Glu Leu Leu Val Ser Ser Tyr Arg Leu
 65 70 75 80
 Ser Lys His Phe Phe Ser Ser Trp Ser Asp Arg Lys Val Gly His Leu
 85 90 95
 Asn Asn Cys Val Thr His Tyr Thr Thr Gln
 100 105

<210>254

<211>390

<212>PRT

<213>Chlamydia pneumoniae

<400>254

Ile Phe Leu Val Lys Phe Met Ser Ala Met Ile Ser Leu Ser Ser Ser
 1 5 10 15
 His Glu Ala Ser Ile Ala Ser Asn Thr Gln Val Arg Asp Val Leu Val
 20 25 30
 Ser Leu Ala Met Asp Glu Phe Val Glu His Asn Thr Glu Ile Leu Pro
 35 40 45
 Ile Lys Val Phe Leu Ala Arg Gly Thr Leu Ser Ser Thr Ala Ile Ile
 50 55 60
 Asp Asp Leu Lys Asp Val Glu Thr Glu Gly Glu His His Phe Gln
 65 70 75 80

Val Tyr Ser Asn Leu Ser Leu Lys Met Ile Tyr Gln Phe Phe Glu
 85 90 95
 Lys Ile Phe Gly Ile Gly Cys Cys Pro Leu Leu Val Thr Asp Ser
 100 105 110
 His His Thr Asp Pro Cys Gly Ala Leu Ile Thr Gly Ile Phe Ala Ala
 115 120 125
 Val Leu Phe Thr Val Leu Ala Ile Val Phe Gly Pro Thr Leu Gly Ile
 130 135 140
 Leu Cys Tyr Ser Ala Tyr Lys Ile Tyr Gln Leu Thr Lys Lys Ile Ser
 145 150 155 160
 Ser Leu Ser Arg Thr His Thr Glu Val Ile Asn Ser Val Gln Lys Ser
 165 170 175
 Asp Pro Phe Ile His Arg Ser Gly Ala Val Ala Ala Ala Ala Ser
 180 185 190
 Gln Ser Thr Ile Lys Ala Cys Lys Val Phe Arg Gln Ser Thr Leu Ile
 195 200 205
 Phe Phe Val Leu Gly Leu Ile Thr Ile Ser Leu Ala Ala Leu Ile
 210 215 220
 Val Gly Leu Val Phe Ala Leu Phe Phe Leu Asp Pro Gly Ala Pro Ala
 225 230 235 240
 Val Met Thr Ala Ala Met Ile Gly Cys Cys Ala Ala Gly Gly Thr Gly
 245 250 255
 Ile Leu Leu Ser Val Ile Gly Phe Leu Leu Ala Ser Val Tyr Ser Val
 260 265 270
 Gln Lys Ser Gln Glu Gly Val His His Met His Thr Ala Leu Leu Arg
 275 280 285
 Cys Ile Val Ser Asn Thr Ile Ile Gln Met Pro Tyr Leu Pro Ile Thr
 290 295 300
 Pro Gly Thr Lys Lys Val Leu Thr Gln Ser Ile Arg Arg Tyr Gln Gln
 305 310 315 320
 Phe Phe Ser Asp Asp Glu Tyr Arg Asp Ile Glu Ser Glu Val Pro Leu
 325 330 335
 Asn Arg Gln Thr Thr Pro Pro Pro Ser Tyr Glu Thr Leu Phe His Glu
 340 345 350
 Glu Gly Ser Asp Gly Ser Ser Asn Val Ile Pro Arg Glu Ser Pro Pro
 355 360 365
 Ala Tyr Ser Thr Ile Asp Ser Ser Asn Ser Pro Phe Pro Ser Ser Ser
 370 375 380
 Pro Pro Pro Tyr Tyr Arg
 385 390

<210>255

<211>125

<212>PRT

<213>Chlamydia pneumoniae

<400>255

Thr Pro Ser Trp Leu Phe Cys Thr Leu Tyr Thr Glu Ala Ser Lys Lys
 1 5 10 15
 Pro Ile Thr Glu Arg Arg Ile Pro Val Pro Pro Ala Ala Gln His Pro
 20 25 30
 Ile Ile Ala Ala Val Ile Thr Ala Gly Ala Pro Gly Ser Lys Lys Asn
 35 40 45
 Arg Ala Lys Thr Arg Pro Thr Ile Lys Ala Ala Lys Asp Ile Val Ile
 50 55 60
 Ile Lys Pro Ser Thr Lys Lys Ile Asn Val Asp Cys Leu Asn Thr Leu
 65 70 75 80
 Gln Ala Leu Ile Val Asp Cys Glu Ala Ala Ala Ala Thr Ala Pro
 85 90 95
 Glu Arg Cys Ile Lys Gly Ser Asp Phe Cys Thr Glu Phe Met Thr Ser
 100 105 110
 Val Trp Val Leu Asp Lys Glu Asp Ile Phe Leu Val Ser
 115 120 125

<210>256

<211>95

<212>PRT

<213>Chlamydia pneumoniae

<400>256

Arg His Leu Lys Cys Asp Pro Arg Leu Thr Leu Ser Pro Gly Lys Ala
 1 5 10 15
 Leu Asp Ala Leu His Asn Leu Asn Gly Asn Glu Arg Ser Arg Asn Arg
 20 25 30
 Thr Phe Lys Ile Asn Lys Thr Thr Leu Thr Thr Ala Gln Thr Thr Ala
 35 40 45
 Ile Thr Gly Tyr Asn Ile Val Ser Thr Thr Lys Gln Ala Val Phe Leu
 50 55 60
 Thr Gln Gly Phe Ile Ile Ile Ser Leu Arg His Ser Lys Lys Asn
 65 70 75 80
 Arg Thr Ser His Lys Asn Asn Arg Trp Phe Leu Arg Lys Leu Ile
 85 90 95

<210>257

<211>291

<212>PRT

<213>Chlamydia pneumoniae

<400>257

Thr Cys Gln Lys Glu Ile Met Lys His Tyr Leu Ser Phe Ser Pro Ser
 1 5 10 15
 Ala Asp Phe Phe Ser Lys Gln Gly Ala Ile Glu Thr Gln Val Leu Phe
 20 25 30
 Gly Glu Arg Val Leu Val Lys Gly Ser Thr Cys Tyr Ala Tyr Ser Gln
 35 40 45
 Leu Phe His Asn Glu Leu Leu Trp Lys Pro Tyr Pro Gly His Ser Phe
 50 55 60
 Arg Ser Thr Leu Val Pro Cys Thr Pro Glu Phe His Ile His Pro Asn
 65 70 75 80
 Val Ser Val Val Ser Val Asp Ala Phe Leu Asp Pro Trp Gly Ile Pro
 85 90 95
 Leu Pro Phe Gly Thr Leu Leu His Val Asn Ser Gln Asn Thr Val Ile
 100 105 110
 Phe Pro Lys Asp Ile Leu Asn His Met Asn Thr Ile Trp Gly Ser Gly
 115 120 125
 Thr Pro Gln Cys Asp Pro Arg His Leu Arg Arg Leu Asn Tyr Asn Phe
 130 135 140
 Phe Ala Glu Leu Leu Ile Lys Asp Ala Asp Leu Leu Leu Asn Phe Pro
 145 150 155 160
 Tyr Val Trp Gly Gly Arg Ser Val His Glu Ser Leu Glu Lys Pro Gly
 165 170 175
 Val Asp Cys Ser Gly Phe Ile Asn Ile Leu Tyr Gln Ala Gln Gly Tyr
 180 185 190
 Asn Val Pro Arg Asn Ala Ala Asp Gln Tyr Ala Asp Cys His Trp Ile
 195 200 205
 Ser Ser Phe Glu Asn Leu Pro Ser Gly Gly Leu Ile Phe Leu Tyr Pro
 210 215 220
 Lys Glu Glu Lys Arg Ile Ser His Val Met Leu Lys Gln Asp Ser Ser
 225 230 235 240
 Thr Leu Ile His Ala Ser Gly Gly Gly Lys Val Glu Tyr Phe Ile
 245 250 255
 Leu Glu Gln Asp Gly Lys Phe Leu Asp Ser Thr Tyr Leu Phe Phe Arg
 260 265 270
 Asn Asn Gln Arg Gly Arg Ala Phe Phe Gly Ile Pro Arg Lys Arg Lys
 275 280 285
 Ala Phe Leu
 290

<210>258

<211>168

<212>PRT

<213>Chlamydia pneumoniae

<400>258

Val Val Ala Lys Ser Thr Ile Gln Glu Ser Val Ala Thr Gly Arg Arg
 1 5 10 15

Lys Gln Ala Val Ser Val Arg Leu Arg Pro Gly Gly Lys Ile
 20 25 30
 Asp Val Asn Gly Lys Ser Phe Glu Asp Tyr Phe Pro Leu Glu Ile Gln
 35 40 45
 Arg Thr Thr Ile Leu Ser Pro Leu Lys Lys Ile Thr Glu Asp Gln Ser
 50 55 60
 Gln Tyr Asp Leu Ile Ile Arg Val Ser Gly Gly Gly Ile Gln Gly Gln
 65 70 75 80
 Val Ile Ala Thr Arg Leu Gly Leu Ala Arg Ala Leu Leu Lys Glu Asn
 85 90 95
 Glu Glu Asn Arg Gln Asp Leu Lys Ser Cys Gly Phe Leu Leu Glu Ile
 100 105 110
 Leu Glu Gly Lys Asn Val Lys Asn Thr Asp Ile Lys Lys Leu Val Lys
 115 120 125
 Ala Ser Asn Ser Leu Ser Val Lys Ile Phe Thr Val Phe Arg Ile Val
 130 135 140
 Phe Gly Lys Ser Leu Ser Tyr Tyr Arg Lys Ala Phe Leu Phe Leu Gly
 145 150 155 160
 Ile Pro Lys Asn Ala Arg Pro Leu
 165

<210>259

<211>149

<212>PRT

<213>Chlamydia pneumoniae

<400>259

Met Glu Lys Arg Lys Asp Thr Lys Thr Thr Ile Val Lys Ser Ser Glu
 1 5 10 15
 Thr Thr Lys Ser Trp Tyr Val Val Asp Ala Ala Gly Lys Thr Leu Gly
 20 25 30
 Arg Leu Ser Ser Glu Val Ala Lys Ile Leu Arg Gly Lys His Lys Val
 35 40 45
 Thr Tyr Thr Pro His Val Ala Met Gly Asp Gly Val Ile Val Ile Asn
 50 55 60
 Ala Glu Lys Val Arg Leu Thr Gly Ala Lys Lys Gly Gln Lys Ile Tyr
 65 70 75 80
 Arg Tyr Tyr Thr Gly Tyr Ile Ser Gly Met Arg Glu Ile Pro Phe Glu
 85 90 95
 Asn Met Met Ala Arg Lys Pro Asn Tyr Ile Ile Glu His Ala Ile Lys
 100 105 110
 Gly Met Met Pro Arg Thr Arg Leu Gly Lys Lys Gln Leu Lys Ser Leu
 115 120 125
 Arg Ile Val Lys Gly Asp Ser Tyr Glu Thr Phe Glu Ser Gln Lys Pro
 130 135 140
 Ile Leu Leu Asp Ile
 145

<210>260

<211>226

<212>PRT

<213>Chlamydia pneumoniae

<400>260

Met Ser Leu Leu Ile Glu Ala Lys Asn Leu Ser Lys Thr Ile Gln Gln
 1 5 10 15
 Gln Asn Gln Asn Ile Ser Ile Leu Thr Asp Val Ser Leu Ser Leu His
 20 25 30
 Ala Gly Glu Thr Ile Ser Ile Thr Gly Ala Ser Gly Asn Gly Lys Thr
 35 40 45
 Thr Leu Leu His Leu Leu Gly Thr Leu Asp Val Pro Ser Ser Gly Ser
 50 55 60
 Leu Arg Phe Phe Asp Lys Asp Leu Lys Asn Gln Asp Leu Ala Asn Phe
 65 70 75 80
 Arg Asn Gln His Ile Gly Phe Val Phe Gln Asn Phe Tyr Leu Leu Glu
 85 90 95
 Asp Asp Thr Val Leu Lys Asn Val Leu Met Pro Ala Leu Ile Ala Arg
 100 105 110

Lys Asn Ile Ser Lys Ser Pro Val Tyr Thr Arg Ala Leu Glu Leu
 115 120 125
 Leu Asp Leu Val Asn Leu Glu Asp Lys Val Arg Thr Arg Cys Ser Lys
 130 135 140
 Leu Ser Gly Gly Glu Lys Gln Arg Val Ala Ile Ala Arg Ala Leu Ile
 145 150 155 160
 Asn Glu Pro Ala Ile Leu Leu Ala Asp Glu Pro Ser Gly Asn Leu Asp
 165 170 175
 Glu Glu Thr Ser Glu Gln Ile His Asn Leu Leu Leu Glu Gln Ala Ser
 180 185 190
 Ala Leu Cys Gly Ile Leu Ile Val Thr His Asn Lys His Leu Ala Ser
 195 200 205
 Arg Cys Ser Arg Glu Gly Val Leu Ser Asn Gly Lys Leu Phe Phe His
 210 215 220
 Asn Ser
 225
 <210>261
 <211>506
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>261
 Leu Glu Val Met Lys Phe Glu Phe Ser Val Ala Leu Lys Tyr Leu Ile
 1 5 10 15
 Pro Gly Arg Gly Arg Leu Tyr Ser Ala Ile Val Ser Leu Phe Ser Val
 20 25 30
 Gly Ile Ile Ser Leu Val Val Trp Leu Ser Ile Val Phe Ile Ser Val
 35 40 45
 Ile His Gly Leu Glu Gln Arg Trp Ile Glu Asp Leu Ser Gln Leu His
 50 55 60
 Ser Pro Ile Thr Ile Leu Pro Ser Asp Thr Tyr Tyr Ser Ser Tyr Tyr
 65 70 75 80
 Tyr Gln Ile Asp Lys His Ser Ser Leu Ser Asn Tyr Thr Thr Lys Thr
 85 90 95
 Leu Gly Glu Lys Ile Ala Ser Pro Gln Val Asp Pro Tyr Asp Pro Glu
 100 105 110
 Ser Asp Tyr Leu Leu Pro Glu Thr Phe Pro Leu Lys Asp Cys Asp Leu
 115 120 125
 Gly Gly Gln Gln Lys Asp Pro Val Lys Met Thr Leu Glu Ser Leu Gly
 130 135 140
 Pro Tyr Leu Gln Ser Gln His Gly Lys Val Ile Glu Phe Glu Gln Gly
 145 150 155 160
 Val Gly Tyr Leu Asp Ile Lys Thr Ser Leu Lys Leu Gln Lys Pro Gln
 165 170 175
 Pro Arg Asn Leu Thr His Phe Leu Thr Tyr Pro Ser Lys Leu Ser Tyr
 180 185 190
 Glu Asp Lys Val Leu Pro Tyr Asp Glu Thr Asp Tyr Thr Ser Ala Glu
 195 200 205
 Leu Asn Pro Phe Asn Arg Ser Pro Ser Gly Trp Gln Gln Asp Phe His
 210 215 220
 His Leu Glu Glu Leu Tyr Arg Gly Ala Ser Ile Ile Leu Pro Ser Thr
 225 230 235 240
 Tyr Lys Asp Ser Gly Tyr Lys Val Gly Asp Thr Gly Val Phe Ser Thr
 245 250 255
 Tyr Ser Ile Glu Asn Glu Lys Glu Thr Gln Tyr Thr Val His Val Ile
 260 265 270
 Gly Phe Tyr Asn Pro Gly Leu Ser Pro Leu Gly Gly Arg Thr Val Phe
 275 280 285
 Ile Asp Pro Asp Leu Ala Arg Ser Ile Arg Ser Gln Ser Glu Gly Leu
 290 295 300
 Gly Met Ser Asn Gly Phe His Leu Phe Phe Pro Asn Thr Lys Arg Ile
 305 310 315 320
 Val Phe Val Lys Lys Gln Ile Glu Asn Ile Leu Thr Ser Leu Gly Val
 325 330 335
 Asp Asp Tyr Trp Glu Ile Ser Ser Leu His Asp Tyr Asp Tyr Phe Gln

Pro	Ile	Leu	Asp	Gln	Leu	Gln	Ser	Asp	Gln	Val	Leu	Phe	Leu	Phe	Val
		355						360				365			
Cys	Ile	Leu	Ile	Leu	Ile	Val	Ala	Cys	Ser	Asn	Ile	Val	Thr	Met	Ser
		370					375				380				
Met	Leu	Leu	Val	Asn	Asn	Lys	Lys	Lys	Glu	Ile	Gly	Ile	Leu	Lys	Ala
		385			390					395					400
Met	Gly	Thr	Ser	Ser	Arg	Ser	Leu	Lys	Ile	Ile	Phe	Ala	Cys	Cys	Gly
				405					410					415	
Ala	Phe	Ser	Gly	Ala	Cys	Gly	Val	Val	Ile	Gly	Thr	Ile	Phe	Ala	Ile
			420					425					430		
Ile	Thr	Leu	Lys	Asn	Leu	Gln	Phe	Ile	Val	Lys	Ala	Leu	Asn	Tyr	Leu
		435					440					445			
Gln	Gly	Arg	Glu	Thr	Phe	Asn	Thr	Ala	Phe	Phe	Gly	Gln	Asn	Leu	Pro
		450				455					460				
Asn	Ser	Val	His	Pro	Gln	Ala	Ile	Tyr	Phe	Leu	Gly	Leu	Gly	Thr	Leu
		465			470					475					480
Leu	Leu	Ala	Ala	Val	Ser	Gly	Ala	Leu	Pro	Ala	Arg	Lys	Val	Ala	Lys
				485				490						495	
Met	His	Val	Ser	Glu	Ile	Leu	Lys	Ala	Asp						
			500					505							

<210>262

<211>84

<212>PRT

<213>Chlamydia pneumoniae

<400>262

Phe	Ser	Ala	Phe	Thr	Met	Asn	Cys	Lys	Phe	Phe	Asn	Val	Ile	Ile	Ala
1				5					10					15	
Asn	Ile	Val	Pro	Ile	Thr	Thr	Pro	Gln	Ala	Pro	Glu	Asn	Ala	Pro	Gln
			20					25					30		
Gln	Ala	Lys	Met	Ile	Phe	Lys	Leu	Arg	Asp	Asp	Val	Pro	Ile	Ala	Leu
		35					40					45			
Arg	Met	Pro	Ile	Ser	Phe	Phe	Leu	Leu	Phe	Thr	Arg	Ser	Ile	Asp	Ile
		50				55				60					
Val	Thr	Met	Leu	Glu	Gln	Ala	Thr	Ile	Arg	Ile	Ser	Met	His	Thr	Lys
		65			70				75						80
Arg	Lys	Arg	Thr												

<210>263

<211>503

<212>PRT

<213>Chlamydia pneumoniae

<400>263

Leu	Pro	Trp	Met	Ser	Pro	Phe	Lys	Lys	Ile	Val	Asn	Arg	Leu	Leu	Cys
1				5					10					15	
Tyr	Ile	Ser	Phe	Gln	Lys	Glu	Ser	Arg	Thr	Leu	Pro	Ile	Ile	Ile	Arg
			20					25					30		
Glu	Pro	Arg	Met	Thr	Thr	Lys	Ser	Leu	Gly	Ser	Phe	Asn	Ser	Val	Ile
		35					40					45			
Ser	Lys	Asn	Lys	Ile	His	Phe	Ile	Ser	Leu	Gly	Cys	Ser	Arg	Asn	Leu
		50				55				60					
Val	Asp	Ser	Glu	Val	Met	Leu	Gly	Ile	Leu	Leu	Lys	Ala	Gly	Tyr	Glu
		65			70				75						80
Ser	Thr	Asn	Glu	Ile	Glu	Asp	Ala	Asp	Tyr	Leu	Ile	Leu	Asn	Thr	Cys
			85					90					95		
Ala	Phe	Leu	Lys	Ser	Ala	Arg	Asp	Glu	Ala	Lys	Asp	Tyr	Leu	Asp	His
		100						105					110		
Leu	Ile	Asp	Val	Lys	Lys	Glu	Asn	Ala	Lys	Ile	Ile	Val	Thr	Gly	Cys
		115					120					125			
Met	Thr	Ser	Asn	His	Lys	Asp	Glu	Leu	Lys	Pro	Trp	Met	Ser	His	Ile
		130				135					140				
His	Tyr	Leu	Leu	Gly	Ser	Gly	Asp	Val	Glu	Asn	Ile	Leu	Ser	Ala	Ile
		145			150				155						160
Glu	Ser	Arg	Glu	Ser	Gly	Glu	Lys	Ile	Ser	Ala	Lys	Ser	Tyr	Ile	Glu

165 170 175
 Met Gly Glu Val Pro Arg Gln Leu Ser Thr Pro Lys His Tyr Ala Tyr
 180 185 190
 Leu Lys Val Ala Glu Gly Cys Arg Lys Arg Cys Ala Phe Cys Ile Ile
 195 200 205
 Pro Ser Ile Lys Gly Lys Leu Arg Ser Lys Pro Leu Asp Gln Ile Leu
 210 215 220
 Lys Glu Phe Arg Ile Leu Val Asn Lys Ser Val Lys Glu Ile Ile Leu
 225 230 235 240
 Ile Ala Gln Asp Leu Gly Asp Tyr Gly Lys Asp Leu Ser Thr Asp Arg
 245 250 255
 Ser Ser Gln Leu Glu Ser Leu Leu His Glu Leu Leu Lys Glu Pro Gly
 260 265 270
 Asp Tyr Trp Leu Arg Met Leu Tyr Leu Tyr Pro Asp Glu Val Ser Asp
 275 280 285
 Gly Ile Ile Asp Leu Met Gln Ser Asn Pro Lys Leu Leu Pro Tyr Val
 290 295 300
 Asp Ile Pro Leu Gln His Ile Asn Asp Arg Ile Leu Lys Gln Met Arg
 305 310 315 320
 Arg Thr Thr Ser Arg Glu Gln Ile Leu Gly Phe Leu Glu Lys Leu Arg
 325 330 335
 Ala Lys Val Pro Gln Val Tyr Ile Arg Ser Ser Val Ile Val Gly Phe
 340 345 350
 Pro Gly Glu Thr Gln Glu Glu Phe Gln Glu Leu Ala Asp Phe Ile Gly
 355 360 365
 Glu Gly Trp Ile Asp Asn Leu Gly Ile Phe Leu Tyr Ser Gln Glu Ala
 370 375 380
 Asn Thr Pro Ala Ala Glu Leu Pro Asp Gln Ile Pro Glu Lys Val Lys
 385 390 395 400
 Glu Ser Arg Leu Lys Ile Leu Ser Gln Ile Gln Lys Arg Asn Val Asp
 405 410 415
 Lys His Asn Gln Lys Leu Ile Gly Glu Lys Ile Glu Ala Val Ile Asp
 420 425 430
 Asn Tyr His Pro Glu Thr Asn Leu Leu Thr Ala Arg Phe Tyr Gly
 435 440 445
 Gln Ala Pro Glu Val Asp Pro Cys Ile Ile Val Asn Glu Ala Lys Leu
 450 455 460
 Val Ser His Phe Gly Glu Arg Cys Phe Ile Glu Ile Thr Gly Thr Ala
 465 470 475 480
 Gly Tyr Asp Leu Val Gly Arg Val Val Lys Lys Ser Gln Asn Gln Ala
 485 490 495
 Leu Leu Lys Thr Ser Lys Ala
 500

<210>264

<211>179

<212>PRT

<213>Chlamydia pneumoniae

<400>264

Ala Thr Ser Thr Val Cys Ala Leu Trp Ile Leu Gln Thr Tyr Gln Ser
 1 5 10 15
 His Asp Asp Ala Ala Ser Cys Ser Phe Arg Arg Ala Cys Arg Phe Gly
 20 25 30
 Arg Tyr Trp Leu Gly Gly Val Asn Val Pro Trp Asn Lys Phe Asn Gln
 35 40 45
 Thr Ser Thr Gln Ser Thr Val Ile Asn Ser Ala Ile Tyr Ile Asp Ser
 50 55 60
 Ser Gln Thr Trp Met Met Arg Phe Gln Ala Ser Ala Ser Ile Pro Arg
 65 70 75 80
 Leu Phe Arg Ile Ser Ile Phe Met Thr Lys His Gly Asp Trp Ile Asp
 85 90 95
 Asn Gly Thr Gly Gly Glu Leu Leu Leu Val Ala Tyr Glu Ala Asn Gln
 100 105 110
 Asn Pro Leu Phe Pro Asp Ile Arg Ile Glu Leu Ala Met Ser Thr Cys
 115 120 125

Ser Gly Thr Ser Tyr Tyr Arg Ala Arg Pro Met Gln Leu Cys Ser
 130 135 140
 Thr Tyr Tyr Ala Val Arg Pro Gly Tyr Phe Val Leu Glu Asn Arg Ser
 145 150 155 160
 Tyr Ser Phe Arg Val Gln Ser Phe Ser Trp Asn Ile Ala Thr Leu Pro
 165 170 175
 Phe Val Asn

<210>265

<211>175

<212>PRT

<213>Chlamydia pneumoniae

<400>265

Phe Cys Gly Gly Arg Leu Met Ser Ser Ser Ile Pro Thr Thr Gln Lys
 1 5 10 15
 Ile Thr Ile Ser Ile Pro Thr Phe Val Arg Phe Asn Ile Glu Ser Ile
 20 25 30
 Asn Leu Thr Asp Glu Gln Lys Lys Thr Ala Leu Thr Ile Gly Gln Asn
 35 40 45
 Ile Ala Thr Glu Asn Thr Gln Val Leu Gly Asn Phe Val Asp Ala Asp
 50 55 60
 Gly Gly Leu Ile Cys Gln Asn Asp Leu Ser Val Gly Gly Asn Ile Asn
 65 70 75 80
 Ile Thr Pro Gln Thr Phe Asn Thr Met Val Phe Asn Gly Arg Val Asn
 85 90 95
 Leu Ser Asn Ser Pro Phe Ser Tyr Gln Asp Ser Leu Gly Asn Lys Arg
 100 105 110
 Gln Asp Tyr Ala Asn Ile Asn Thr Glu Gln Pro Gln Gln Tyr Val Pro
 115 120 125
 Tyr Gly Tyr Tyr Lys Leu Thr Arg Val Met Met Met Gln Arg Ala Ala
 130 135 140
 Leu Ser Gly Gly His Val Gly Ser Gly Asp Ile Gly Trp Gly Glu Ser
 145 150 155 160
 Met Tyr Leu Gly Ile Ser Ser Ile Lys Arg Gln His Lys Val Gln
 165 170 175

<210>266

<211>264

<212>PRT

<213>Chlamydia pneumoniae

<400>266

Ile Pro Met Lys Thr Leu Gly Val Lys Asp Gln Asn Leu Phe Ile Asp
 1 5 10 15
 Gln Ala Thr Leu Ser Val Glu Arg Asn Val Arg Ile Glu Asn Asn Leu
 20 25 30
 Glu Thr Arg Asp Leu Lys Val Leu Asp Thr Thr Thr Ser Pro Cys Glu
 35 40 45
 Phe Ile Val Lys Gly Asn Val Ser Ala Glu Gly Ser Gln Leu Asn Ala
 50 55 60
 Thr Thr Leu Ser Asp Gly Phe Asn Ile Tyr Ser Lys Thr Asp Val Ser
 65 70 75 80
 Gln Thr Pro Val Cys Asn Asn Ile Ser Asp Pro Gln Ser Ala Arg Asp
 85 90 95
 Ala Leu Thr Phe Ser Tyr Tyr Arg Lys Thr Gly Cys Gln Ala Ala Asn
 100 105 110
 Leu Tyr Thr Tyr Tyr Pro Gly Asn Gly Tyr Tyr Val Ala Pro Asn Thr
 115 120 125
 Thr Ile Glu Thr His Val Ala Ile Thr Ser Lys Ser Val Ser Arg
 130 135 140
 Asn Ala Thr Pro Asp Phe Ser Arg Tyr Ala Asp Ile Glu Pro Val Val
 145 150 155 160
 Lys Leu Lys Gln Val Gly Ile Tyr Gln Val Thr Met Gln Leu Thr Arg
 165 170 175
 Trp Ser Gly Gln His Asp Gly Asp Asn Ser Ala Thr Leu Ile Leu Asn
 180 185 190

Phe Val Ser Gly Asn Lys Thr Leu Leu Cys Thr Ser Ala Thr Arg
 195 200 205
 Gly Gly Tyr Ser Ser Asp Arg Thr Ser Val Ala Val Thr Ala Ile Phe
 210 215 220
 Ser Val Thr Glu Leu Val Ser Ser Pro Pro Tyr Asp Tyr Pro Trp Ile
 225 230 235 240
 Asn Leu Glu Ser Thr Ile Trp Met Asn Leu Met Ser Leu Ser Thr Cys
 245 250 255
 Gly His Leu Val Ser Ile Ser Ile
 260

<210>267

<211>285

<212>PRT

<213>Chlamydia pneumoniae

<400>267

Thr Leu Leu Lys Val Ile Met Lys Asn Asn Ile Asn Asn Asn Glu Cys
 1 5 10 15
 Tyr Phe Lys Leu Asp Ser Thr Val Asp Gly Asp Leu Leu Ala Ala Asn
 20 25 30
 Leu Lys Thr Phe Asp Thr Gln Ala Gln Gly Ile Ser Ser Thr Glu Thr
 35 40 45
 Phe Ser Val Gln Gly Asn Ala Thr Phe Lys Asp Gln Val Ser Ala Thr
 50 55 60
 Gly Leu Thr Ser Gly Thr Thr Tyr Asn Leu Asn Ala Gln Asn Phe Thr
 65 70 75 80
 Ser Ser Gln Ile Ser Ile Asp Phe Lys Asn Asn Arg Leu Ser Asn Cys
 85 90 95
 Ala Leu Pro Lys Glu Asp Cys Asp Pro Val Pro Ala Asn Tyr Val Arg
 100 105 110
 Ser Pro Glu Tyr Phe Phe Cys Ser Lys Pro Leu Ile Gly Asp Phe Asp
 115 120 125
 Phe Asn Ser Gly Glu Ser Tyr Leu Pro Leu Thr Gly Ser Glu Tyr Thr
 130 135 140
 Leu Tyr Gln Ser Arg Asn Val Asn Ser Ile Phe Arg Phe Ile Gly Trp
 145 150 155 160
 Lys Gln Ser Thr Arg Glu Leu Thr Val Gly Gly Asn Thr Ala Ile Gln
 165 170 175
 Phe Leu Ala Ala Gly Thr Tyr Ile Val Ser Phe Thr Val Gly Lys Arg
 180 185 190
 Trp Gly Trp Asn Asn Gly Trp Gly Gly Ala Ile Tyr Ile Asn Asn Gly
 195 200 205
 Leu Gly Gln Val Gln Cys Glu Ser Thr Ile Tyr Ser Gly Gly Gly Tyr
 210 215 220
 Ala Thr Ile Gly Thr Leu Gly Thr Ser Ile Tyr Arg Ala Ser Val Asp
 225 230 235 240
 Val Ala Pro Asn Pro Asn Asp Pro Asn Ala Ser Asp Arg Tyr Arg Ala
 245 250 255
 Gly Ile Phe Tyr Leu Ser Asn Gly Gly Ser Ser Ala Gly Ile Gly Asn
 260 265 270
 Tyr Ser Phe Ser Leu Leu Tyr Tyr Pro Asp Asp Arg Gly
 275 280 285

<210>268

<211>295

<212>PRT

<213>Chlamydia pneumoniae

<400>268

Phe Cys Gly Gly Arg Leu Met Ser Asn Pro Thr Pro Lys Thr Lys Ile
 1 5 10 15
 Ser Ile Pro Thr Phe Val Arg Phe Asn Ile Gln Ser Ile Asn Leu Thr
 20 25 30
 Glu Asp Gln Lys Lys Thr Thr Phe Thr Val Gly Gly Lys Val Thr Thr
 35 40 45
 Glu Asn Thr Val Val Arg Gly Asp Leu Thr Cys Thr Asp Gly Gly Leu
 50 55 60

Thr	Cys	Gln	Ser	Asp	Leu	Thr	Ile	Gln	Lys	Asp	Ile	Ile	Arg	Pro
65					70					75				80
Thr	Ser	Thr	Asn	Ser	Met	Val	Phe	Asp	Gly	Arg	Leu	Asn	Leu	Ser
			85						90					95
Ser	Pro	Leu	Ser	Tyr	Lys	Asn	Ser	Gln	Gly	Gln	Asp	Ile	Thr	Asp
		100						105				110		Tyr
Glu	Lys	Met	Ser	Ser	Gly	Lys	Pro	Gln	Glu	Tyr	Val	Pro	Phe	Gly
		115					120					125		Tyr
Tyr	Lys	Arg	Thr	Gln	Ile	Met	Met	Ala	Gln	Arg	Ala	Ala	His	Ser
	130					135					140			Ser
Gly	Tyr	Val	Gly	Gly	Gly	Ser	Val	Pro	Ser	Gly	Ser	Tyr	Val	Pro
145					150					155				160
Asn	Lys	Phe	Asp	Gln	Thr	Ser	Thr	Gln	Lys	Thr	Ser	Gly	Thr	Glu
				165					170					175
Tyr	Ile	Asp	Pro	Asn	Asp	Ser	Thr	Lys	Leu	Val	Phe	Glu	Val	Asn
		180						185					190	Asn
Lys	Val	Pro	Lys	Leu	Phe	Arg	Ile	Ser	Val	Ile	Met	Ala	Lys	His
	195						200					205		Gly
Ser	Trp	Leu	Asp	Asn	Gly	Thr	Gly	Ala	Asp	Ile	Leu	Leu	Ala	Ala
	210					215					220			Asn
Glu	Tyr	Glu	Gln	Gly	Gly	Gly	Arg	Ile	Asn	Val	Thr	Asp	Leu	Ala
225					230					235				240
Thr	Thr	Ser	Arg	Gly	Ser	Ser	Tyr	Tyr	Glu	Thr	Arg	Pro	Leu	Gln
				245					250					255
Val	Cys	Val	Thr	Tyr	Tyr	Ala	Gln	Asn	Asn	Gly	Tyr	Phe	Thr	Phe
			260					265					270	Gln
Asn	Arg	Ala	Gly	Gly	Gly	Leu	Arg	Val	Ser	Phe	Phe	Ser	Trp	Asn
	275						280						285	Ile
Val	Ala	Leu	Pro	Tyr	Val	Glu								
	290					295								

<210>269

<211>290

<212>PRT

<213>Chlamydia pneumoniae

<400>269

Gly	Val	Val	Met	Lys	Arg	Arg	Asn	Leu	Gln	Lys	Ile	Leu	Pro	Asn	Ala
1				5					10					15	
Ser	Thr	Pro	Ser	Thr	Asn	Val	Ala	Glu	Asn	Thr	Gly	Ile	Lys	Asp	Gln
			20					25					30		
Asn	Leu	Phe	Leu	Asp	Gln	Ala	Thr	Leu	Asn	Val	Asp	Gly	Asn	Val	Asp
		35					40					45			
Ile	Glu	Asn	Phe	Leu	Glu	Thr	Arg	Asp	Leu	Lys	Val	Ala	Asp	Thr	Ile
	50					55					60				
Thr	Ser	Pro	Cys	Glu	Phe	Thr	Val	Gly	Gly	Gly	Leu	Ser	Ala	Glu	Ser
65				70						75				80	
Ser	Gln	Phe	Lys	Ala	Thr	Thr	Leu	Ser	Lys	Gly	Leu	Glu	Ile	Thr	Ser
			85						90					95	
Glu	Asp	Gln	Asp	Gly	Arg	Val	Pro	Lys	Phe	Thr	Asn	Val	Ser	Asp	Pro
			100					105					110		
Gln	Ser	Pro	Arg	Asp	Ala	Leu	Thr	Tyr	Asn	Tyr	Tyr	Arg	Asn	Thr	Gly
		115					120					125			
Cys	Gln	Ala	Leu	Asn	Leu	Tyr	Thr	Tyr	Tyr	Ser	Ser	Ser	Gln	Pro	Thr
	130					135						140			
Thr	Val	Gly	Lys	Pro	Ile	Glu	Thr	Val	Cys	Gln	Asn	Pro	Asn	Pro	Glu
145					150					155					160
Thr	Tyr	Arg	Ile	Ser	Ala	Ser	Ala	Lys	Ile	Tyr	Asp	Ala	Val	Thr	Arg
			165						170					175	
Phe	Pro	Tyr	Ile	Gln	Phe	Lys	Ala	Pro	Gly	Ile	Tyr	Gln	Val	Thr	Ile
		180						185					190		
Gln	Ile	Arg	Glu	Ser	Gly	Gln	His	Ser	Gly	Leu	Asp	Asn	Pro	Asn	
	195					200					205				
Leu	Tyr	Leu	Asn	Leu	Met	Ile	Gly	Asn	Asn	Lys	Thr	Leu	Leu	Cys	Ala
	210					215					220				
Ser	Asp	Thr	Arg	Gly	Tyr	Ser	Gly	Gly	His	Arg	Thr	Ser	Ile	Ala	Val

225 235 240
 Thr Gly Thr Phe Thr Leu Thr Glu Ile Val Ala Thr Pro Pro His Asp
 245 250 255
 Tyr Pro Trp Leu Phe Leu Glu Thr Thr Ile Gly Leu Asp Ile Lys Ser
 260 265 270
 Met Ser Thr Cys Val Ile Trp Phe Pro Phe Gln Ala Asn Phe Ala Glu
 275 280 285
 Val Asp
 290
 <210>270
 <211>134
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>270
 Cys Phe Ser Phe Cys Arg Leu Gly Ser Lys Phe Glu Lys Ile Thr Leu
 1 5 10 15
 Gly Gly Asn Thr Ala Ile Gln Leu Leu Ala Ala Gly Thr Tyr Ile Leu
 20 25 30
 Thr Phe Thr Ile Gly Lys Arg Trp Gly Trp Asn Asn Gly Trp Gly Gly
 35 40 45
 Ser Ile Arg Leu Phe Glu Gly Lys Tyr Thr Gly Asp Gly Thr Met Leu
 50 55 60
 Cys Gly Ser Thr Val Tyr Ser Gly Gly Gly Tyr Ser Thr Ile Gly Tyr
 65 70 75 80
 Leu Ser Thr Ala Val Tyr Arg Asp His Ser Asp Ile Asp Pro Asp Pro
 85 90 95
 Asn Asn Pro Ser Asp Lys Tyr Met Asn Asn Phe Leu Phe Val Arg Asn
 100 105 110
 Gly Asp His Ser Ala Val Ile Gly Asn Tyr Ser Phe Thr Leu Leu Tyr
 115 120 125
 Phe Ala Gly Asp Lys Val
 130
 <210>271
 <211>197
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>271
 Ile Tyr Phe Val Phe Lys Arg Lys Thr Tyr Asn Tyr Phe Ile Glu Met
 1 5 10 15
 Thr Thr Thr Asn Asn Gln Asp Asn Asn Glu Cys Tyr Phe Lys Leu Asp
 20 25 30
 Ser Thr Val Asp Gly Asp Leu Leu Ala Ser Asn Ile Gln Thr Phe Asp
 35 40 45
 Lys Gln Ala Lys Gly Ile Ser Ser Thr Glu Thr Phe Ser Val Gln Gly
 50 55 60
 Asn Ala Thr Phe Lys Glu Lys Val Ser Ala Thr Gly Leu Thr Ser Ala
 65 70 75 80
 Ser Thr Tyr Lys Leu Asn Ala Thr Gly Pro Ala Pro Ser Ser Ile Thr
 85 90 95
 Ile Asp Met Lys Asn Asn Arg Leu Ser Asn Pro Ala Leu Pro Lys Asn
 100 105 110
 Pro Cys Asp Pro Val Pro Ala Asn Tyr Val Arg Ser Pro Gln Tyr Phe
 115 120 125
 Phe Cys Ala Lys Pro Ile Glu Gly Thr Phe Met Phe Asp Gly Ser Ser
 130 135 140
 Arg Tyr Leu Pro Ile Thr Gly Asp Gly Ser Asn Tyr Thr Leu Tyr Gln
 145 150 155 160
 Ser Ser Lys Ala Gly Asp Val Phe Arg Phe Val Asp Trp Asp Gln Asn
 165 170 175
 Ser Lys Lys Leu His Leu Gly Gly Thr Gln Pro Tyr Asn Phe Leu Leu
 180 185 190
 Gln Glu Pro Ile Ser
 195
 <210>272

<211>181
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>272
 Ala Tyr Leu Asp Phe Ser Lys Arg Ser Cys Val Glu Glu Asp His Val
 1 5 10 15
 Ser Lys Lys Ile Asn Arg Asn Asp Leu Cys Pro Cys Gly Ser Asn Lys
 20 25 30
 Lys Tyr Lys Gln Cys Cys Leu Lys Lys Glu Glu Gln Thr Ala Arg Tyr
 35 40 45
 Thr Thr Glu Gly Lys Phe Lys Phe Ser Ala Glu Val Leu Ser Ala Ser
 50 55 60
 Glu Gln Gly Glu Ala Gly Asp Asn Cys Thr Lys Leu Phe Gln Arg Leu
 65 70 75 80
 Ser Gln Ser Leu Thr Ser Glu Gln Lys Ala Ala Val Gly Lys Phe His
 85 90 95
 Gln Ile Thr Lys Asn Lys Glu Val Met Ser Lys Lys Ala Leu Lys Lys
 100 105 110
 Ala Gln Ala Lys Glu Glu Lys Leu Val Thr Glu Lys Leu Gln Gln His
 115 120 125
 Asn Phe Glu Ile Leu Asn Thr Gly Glu Asn Leu Ala Pro Pro Met Glu
 130 135 140
 Ser Thr Ala Thr Leu Asn Gln Asp Thr Asn Phe Val Cys Glu Asp Phe
 145 150 155 160
 Ile Pro Thr Gln Glu Asp Phe Arg Ile Ser Glu Asn Ser Gln Lys Pro
 165 170 175
 Pro Val Glu Glu Asp
 180

<210>273
 <211>206
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>273
 Met Ser Thr Leu Leu Leu Asn Pro Pro Trp Met Lys Ala Gly Lys Arg
 1 5 10 15
 Ile Glu Ser Leu Val Arg Lys Ala Leu Tyr Thr His Thr Met Leu Ala
 20 25 30
 Asn His Arg Lys Ile Val Val Ala Leu Ser Gly Gly Lys Asp Ser Leu
 35 40 45
 Thr Leu Leu Leu Met Leu Lys Ala Ile Ser Gly Arg Gly Phe Pro Asp
 50 55 60
 Leu Asp Leu His Ala Val Asn Ile Gly Gly Lys Tyr Ser Cys Gly Ala
 65 70 75 80
 Glu Val Asn Lys Pro Tyr Leu Thr Arg Ile Cys Asp Gln Leu Cys Ile
 85 90 95
 Pro Phe Arg Thr Ile Pro Ser Pro Tyr Ala Pro Glu Thr Pro Glu Cys
 100 105 110
 Tyr Pro Cys Ser Gln Ala Arg Arg Arg Leu Leu Phe Gln Ala Ala Lys
 115 120 125
 Glu Ile Gly Ala Ser Ala Ile Ala Phe Gly His His Arg Asp Asp Leu
 130 135 140
 Val Gln Thr Ala Leu Leu Asn Leu Leu His Lys Ala Glu Phe Ala Gly
 145 150 155 160
 Met Leu Pro Val Leu Asp Met Val His Phe Gly Val Thr Ile Leu Arg
 165 170 175
 Pro Leu Ile Phe Thr Pro Glu Phe Trp Ile Arg Lys Phe Ala Lys Glu
 180 185 190
 Asn Ala Ser Gln Glu Ser Leu Ala Val Val Pro Trp Phe His
 195 200 205

<210>274
 <211>281
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>274

Leu Val Leu Met Asn Arg Leu Lys Ile Ile Leu Thr A sp Asp
 1 5 10 15
 Gly Ile Thr Ala Lys Gly Met Ser Cys Leu Val Ser Ala Leu Leu Glu
 20 25 30
 Ala Asn Ile Gly Asp Ile Tyr Ile Ala Ala Pro Gln Ala Glu Gln Ser
 35 40 45
 Gly Lys Ser Met Ala Ile Ser Leu Asn Gln Val Val Cys Ala Ser Pro
 50 55 60
 Tyr Ala Tyr Pro Gln Pro Val Lys Glu Ala Trp Ala Val Gly Gly Ser
 65 70 75 80
 Pro Thr Asp Cys Val Arg Leu Gly Leu Arg Thr Leu Phe Glu Ser Val
 85 90 95
 Ser Pro Asp Leu Val Ile Ser Gly Ile Asn Cys Gly Asn Asn Ile Cys
 100 105 110
 Lys Asn Ala Trp Tyr Ser Gly Thr Ile Gly Ala Ala Lys Gln Ala Leu
 115 120 125
 Val Asp Gly Ile Pro Ser Met Ala Leu Ser Gln Asp Asn His Ile Ser
 130 135 140
 Phe Phe Gln Gln Asp Lys Ala Pro Glu Ile Leu Lys Ala Leu Val Ile
 145 150 155 160
 Tyr Leu Leu Ser Gln Pro Phe Pro Cys Leu Thr Gly Leu Asn Ile Asn
 165 170 175
 Phe Pro Thr Ser Pro Gly Gly Ser Ser Trp Glu Gly Met Arg Leu Val
 180 185 190
 Pro Pro Gly Asp Glu Phe Phe Tyr Glu Glu Pro Gln Tyr Leu Gly Ser
 195 200 205
 Val Asn Lys Asn Gln Tyr Tyr Val Gly Lys Ile Ser Gly Val Arg Ile
 210 215 220
 Gly Glu His Pro Ser Glu Glu Leu Ala Cys Met Leu Glu Asn His Ile
 225 230 235 240
 Ser Val Ser Pro Ile Phe Ser Gln Asn Ser Pro Ile Gly Leu Met Thr
 245 250 255
 Leu Glu Glu Phe Gln Lys Thr Gln Glu Asn Phe Asn Ala Ser Leu Leu
 260 265 270
 Ser Ser Glu Leu Thr Thr Lys Ile Phe
 275 280

<210>275

<211>313

<212>PRT

<213>Chlamydia pneumoniae

<400>275

Leu Arg Val Arg Pro Pro Ser Leu Ala Lys Tyr Ala Phe Arg Gly Phe
 1 5 10 15
 Arg Met Ser His Gly Pro Arg Pro Thr Lys Phe Ser Phe Pro Leu Tyr
 20 25 30
 Phe Ser Lys Thr Leu Ser Trp Phe Ile Leu Gly Gly Phe Leu Ala Ala
 35 40 45
 Cys Gly Val Gln Met Val Leu Val Pro Asn Glu Leu Ile Asp Gly Gly
 50 55 60
 Ile Val Gly Leu Ser Ile Ala Ser His Phe Leu Gly His Lys Ala
 65 70 75 80
 Leu Pro Phe Cys Leu Val Leu Phe Asn Leu Pro Phe Val Phe Leu Ala
 85 90 95
 Phe Lys Gln Ile Gly Lys Tyr Phe Val Ile Gln Met Leu Thr Ala Val
 100 105 110
 Ile Ile Phe Ser Cys Ser Leu Trp Leu Ile Asp Gln Leu Pro Ser Trp
 115 120 125
 Leu Gly Met Ser Pro Phe Val Phe Lys Gly Ser Glu Met Glu Thr Val
 130 135 140
 Val Leu Gly Gly Ala Ile Ile Gly Val Gly Cys Gly Leu Ile Ile Arg
 145 150 155 160
 His Gly Gly Ser Thr Asp Gly Thr Glu Ile Leu Gly Ile Ile Ile Asn
 165 170 175
 Lys Lys Lys Gly Tyr Thr Val Gly Gln Ile Ile Leu Phe Val Asn Phe

		180						185					190				
Phe	Ile	Phe	Ala	Leu	Ser	Gly	Ile	Val	Tyr	Lys	Asn	Trp	His	Thr	Ala		
		195					200					205					
Phe	Val	Ser	Phe	Leu	Thr	Tyr	Gly	Ile	Ala	Thr	Lys	Val	Met	Asp	Met		
	210					215					220						
Val	Ile	Leu	Gly	Leu	Glu	Asp	Thr	Lys	Ser	Val	Thr	Ile	Ile	Thr	Ser		
225					230					235				240			
Ser	Pro	Arg	Lys	Leu	Gly	His	Ile	Leu	Met	Glu	Thr	Leu	Gly	Ile	Gly		
			245					250						255			
Leu	Thr	Tyr	Ile	His	Ala	Glu	Gly	Gly	Tyr	Ser	Gly	Glu	Pro	Arg	Asn		
		260						265						270			
Leu	Leu	Tyr	Val	Val	Val	Glu	Arg	Leu	Gln	Leu	Ser	Gln	Leu	Lys	Glu		
	275						280					285					
Ile	Val	His	Arg	Glu	Asp	Pro	Ser	Ala	Phe	Ile	Ala	Ile	Glu	Asn	Leu		
	290				295						300						
His	Glu	Val	Ile	Asn	Gly	Arg	Arg	Thr									
305					310												

<210>276

<211>192

<212>PRT

<213>Chlamydia pneumoniae

<400>276

Met	Lys	Arg	Tyr	Val	Val	Gly	Ile	Ser	Gly	Ala	Ser	Gly	Val	Ile	Leu		
1				5					10					15			
Ala	Val	Lys	Leu	Ile	Lys	Glu	Leu	Val	Asn	Ala	Lys	His	Gln	Val	Glu		
			20					25					30				
Val	Ile	Ile	Ser	Pro	Ser	Gly	Arg	Lys	Thr	Leu	Tyr	Tyr	Glu	Leu	Gly		
		35				40					45						
Cys	Gln	Ser	Phe	Asp	Ala	Leu	Phe	Ser	Glu	Glu	Asn	Leu	Glu	Tyr	Ile		
50						55					60						
His	Thr	His	Ser	Ile	Gln	Ala	Ile	Glu	Ser	Ser	Leu	Ala	Ser	Gly	Ser		
65					70					75				80			
Cys	Pro	Val	Glu	Ala	Thr	Ile	Ile	Ile	Pro	Cys	Ser	Met	Thr	Thr	Val		
				85					90					95			
Ala	Ala	Ile	Ser	Ile	Gly	Leu	Ala	Asp	Asn	Leu	Leu	Arg	Arg	Val	Ala		
			100					105					110				
Asp	Val	Ala	Leu	Lys	Glu	Arg	Arg	Pro	Leu	Ile	Leu	Val	Pro	Arg	Glu		
		115					120					125					
Thr	Pro	Leu	His	Thr	Ile	His	Leu	Glu	Asn	Leu	Leu	Lys	Leu	Ser	Lys		
	130					135						140					
Ser	Gly	Ala	Thr	Ile	Phe	Pro	Pro	Met	Pro	Met	Trp	Tyr	Phe	Lys	Pro		
145					150					155				160			
Gln	Ser	Val	Glu	Asp	Leu	Glu	Asn	Ala	Leu	Val	Gly	Lys	Ile	Leu	Ala		
			165					170						175			
Tyr	Leu	Asn	Ile	Pro	Ser	Asp	Leu	Thr	Lys	Gln	Trp	Ser	Asn	Pro	Glu		
		180						185					190				

<210>277

<211>296

<212>PRT

<213>Chlamydia pneumoniae

<400>277

Val	Arg	Leu	Asn	Tyr	Phe	Leu	Asn	Leu	Val	Asn	Phe	Lys	Tyr	Ser	Ile		
1				5					10					15			
Phe	Ser	Ile	Leu	Phe	Leu	Ser	Ala	Ser	Thr	Val	Phe	Ala	Leu	Ser	Ile		
			20					25					30				
Asn	Glu	Ile	Ser	Gln	Asn	Leu	Ser	Phe	Lys	Glu	Gly	Phe	Lys	Ile	Ser		
		35				40						45					
Val	Phe	Gly	Ala	Ile	Ala	Phe	Val	Phe	Ala	Arg	Thr	Thr	Gly	Ile	Val		
	50					55				60							
Val	Asn	Gln	Cys	Ile	Asp	Arg	Phe	Ile	Asp	Lys	Lys	Asn	Thr	Arg	Thr		
65					70				75					80			
Ser	Lys	Arg	Val	Leu	Pro	Ala	Asn	Leu	Val	Ser	Leu	Asn	Phe	Ala	Trp		
				85				90					95				
Val	Leu	Ser	Leu	Phe	Cys	Ser	Phe	Leu	Phe	Leu	Phe	Leu	Cys	Lys	Ile		

100 105
 Leu Arg Ile Phe Ser Leu Gly Ile Ala Ser Leu Thr Leu Met Ile Val
 115 120 125
 Tyr Pro Tyr Met Lys Arg Val Thr Phe Phe Cys His Trp Gly Leu Gly
 130 135 140
 Leu Val Tyr Thr Val Ala Ile Leu Met Asn Phe Cys Ala Phe Ala Glu
 145 150 155 160
 Ser Gly Leu Ser Met Arg Leu Cys Phe Leu Ala Leu Leu Trp Gly Gly
 165 170 175
 Ser Val Gly Met Val Ile Ala Ala Asn Asp Ile Ile Tyr Ala Ile Glu
 180 185 190
 Asp Thr Glu Phe Asp Arg Glu Glu Gly Leu Arg Ser Val Pro Ala His
 195 200 205
 Tyr Gly Glu Lys Lys Ala Val Glu Ile Ala Lys Val Asn Leu Trp Val
 210 215 220
 Ser Tyr Leu Ala Tyr Ile Phe Ser Gly Phe Val Gly Ser Leu Asp Lys
 225 230 235 240
 Glu Phe Tyr Phe Thr Ala Ile Ile Pro Leu Val Val Ile Leu Lys Val
 245 250 255
 Val Arg Met Tyr Ser Asn Tyr Ser Lys Lys Asp Gln Glu Gly Glu Ser
 260 265 270
 Gln Ile Leu Phe Ser Glu Tyr Cys Asp Cys Ser Ile Val Ser Cys Lys
 275 280 285
 Tyr Asp Phe Val Leu Glu Phe Glu
 290 295

<210>278

<211>232

<212>PRT

<213>Chlamydia pneumoniae

<400>278

Ile Met Ala Leu Asp Glu Ile Asn Asn Gln Asn Asn Pro Ser Gln Gln
 1 5 10 15
 Ile Ala Ser Ser Thr Ser Gln Thr Ser Lys Ile Asn Gln Asp Arg Lys
 20 25 30
 Thr Phe Ala Cys Thr Val Thr Leu Val Val Ala Thr Leu Met Ile
 35 40 45
 Leu Ser Gly Ile Val Leu Leu Phe Thr Ile Gly Ser Leu Gly Leu Ser
 50 55 60
 Val Pro Leu Ser Gly Ile Leu Gly Thr Phe Ala Val Thr Val Gly Ala
 65 70 75 80
 Val Leu Phe Ile Thr Gly Leu Thr Ile Leu Val Arg Lys Ser Leu Gly
 85 90 95
 Ile Glu Gln Lys Asn Glu Asp Leu Asn Phe Leu Lys Ile Lys Thr Pro
 100 105 110
 Thr Pro Pro Ala Arg Pro Leu Met Ser Lys Phe Ser Val Thr Cys Ser
 115 120 125
 Thr Thr Ser Ile Val Leu Gly Met Ala Leu Leu Ile Gly Ala Val Val
 130 135 140
 Ser Val Phe Phe Leu Thr Gly Tyr Leu Gln Leu Gly Leu Cys Ala Gly
 145 150 155 160
 Leu Val Gly Leu Gly Thr Ala Leu Phe Val Ala Gly Leu Ala Arg Met
 165 170 175
 Ser Pro Arg Ser Leu Ala Asp Gln Glu Gly Ser Gly Ser Ala Asp Ser
 180 185 190
 Gln Ser Asn Ile Val Gly Ile Gly Glu Pro Lys Ala Ala Gln Glu Gln
 195 200 205
 Lys Trp Tyr Lys Met Ala Val Val Arg Gly Glu Asp Gly Ile Pro Thr
 210 215 220
 Ala Ile Arg Leu Thr Pro Glu Lys
 225 230

<210>279

<211>263

<212>PRT

<213>Chlamydia pneumoniae

<400>279

Val Ser Ile Met Ser Leu Asn Lys Thr Asn Ala Leu Leu Asn Gln Pro
1 5 10 15
Glu Pro Ala Val Cys Leu Asn Ala Trp Asp Pro Lys Tyr Ile Asn Gln
20 25 30
Asp Arg Lys Thr Phe Ala Cys Thr Val Thr Leu Leu Val Ile Ala Thr
35 40 45
Leu Met Ile Leu Thr Thr Gly Val Ile Val Leu Leu Ala Met Gly Ser
50 55 60
Pro Gly Leu Ser Val Leu Val Ser Thr Ile Ile Gly Thr Ser Val Thr
65 70 75 80
Thr Leu Gly Thr Ala Leu Phe Ile Ile Gly Leu Val Lys Leu Ile Lys
85 90 95
Lys Ser Leu Ala Trp Ile Gln Tyr Gln Lys Tyr Phe Gln Glu Val Val
100 105 110
Lys Gln Lys Tyr Glu Pro Phe Ser Ile Pro Lys Asn Asp Asn Val His
115 120 125
Lys Leu Thr Ser Cys Leu Pro Ser Pro Leu Asp Ile Glu Ser Pro Ser
130 135 140
Pro Glu Ala Ser Thr Pro Val Ser Lys Leu Arg Ile Ala Cys Ser Gly
145 150 155 160
Val Ala Ile Val Leu Gly Val Thr Leu Leu Ile Gly Ala Val Val Ser
165 170 175
Val Phe Phe Cys Thr Gly Tyr Leu Gln Leu Ala Leu Cys Val Gly Phe
180 185 190
Ala Cys Leu Gly Thr Ala Leu Phe Val Gly Gly Leu Ala Gly Leu Arg
195 200 205
Thr His Ser Leu Ile Ala Gln Gly Ile Met Tyr Leu Tyr Leu Thr Tyr
210 215 220
Tyr Leu Ser Ser Ala Leu Glu Glu Arg Asn Glu Thr Val Lys Asp Gln
225 230 235 240
Arg Asn Glu Ile Asn Thr Tyr Leu Thr Glu Glu Cys Arg Gln Gln Lys
245 250 255
Arg Glu Lys Ala Leu Leu Glu
260

<210>280

<211>115

<212>PRT

<213>Chlamydia pneumoniae

<400>280

Asp Pro Cys Ser Ser Ser Trp Leu Phe Ser Ser Val Ser Gly Ser Arg
1 5 10 15
Ser Gly Ala Gly Arg Asp Val Gly Leu Asp Pro Glu Val Pro Gly Leu
20 25 30
Leu Ala Leu Phe Cys Ser Leu Gly Cys Pro Arg Arg Gly Leu Arg Ser
35 40 45
Ser Ile Pro Phe Ser Thr Phe Gly Val Asp Val Pro Gly Gly Leu Ala
50 55 60
Cys Ala Phe Ser Gly Ser Val Phe Gly Arg Thr Asn Gly Ser Tyr Ala
65 70 75 80
Asn Ile Asn Ser Ser Ser Glu Gly Ile Gly Asp Lys Gly Gly Val Gly
85 90 95
Phe Phe Gln Phe Gly Thr Lys Asp Phe Ile His Ser Gln Val Asp Val
100 105 110
Leu Leu Leu
115

<210>281

<211>331

<212>PRT

<213>Chlamydia pneumoniae

<400>281

Val Ala Phe Arg Cys Val Met Thr Ile Asp Met His Cys Asp Leu Leu
1 5 10 15
Ser His Pro His Phe Cys Arg Lys Asp Pro Ala Val Arg Cys Ser Pro

20 25
 Glu Gln Leu Leu Ser Gly Gly Val Arg Gln Gln Val Cys Ala Ile Phe
 35 40 45
 Val Pro His Ser Arg Gly Glu Pro Asn Cys Asp Lys Gln Asn Ser Leu
 50 55 60
 Phe Phe Ser Leu Pro Asn Gln Tyr Pro Asp Ile Gly Leu Leu Ser Tyr
 65 70 75 80
 Glu Glu Glu Glu Asn Gly Ser Ser Ser Gln Lys Lys Ser Leu Ser Leu
 85 90 95
 Ile Arg Ser Ile Glu Asn Ala Ser Ala Leu Gly Asp Asp Thr Ala Pro
 100 105 110
 Leu Gly Thr Leu Leu Ala Lys Leu Ile His Leu Thr Lys Gln Gly Pro
 115 120 125
 Leu Ala Tyr Leu Gly Ile Val Trp Lys Gly Asp Asn Arg Phe Gly Gly
 130 135 140
 Gly Thr Glu Ala Pro Lys Arg Leu Ser Asn Asp Gly Lys Val Leu Leu
 145 150 155 160
 Asp Ile Met Tyr Glu Leu Gly Val Pro Ile Asp Leu Ser His Cys Ser
 165 170 175
 Asp Lys Leu Ala Glu Asp Ile Leu Asp Tyr Thr Ala Asp Lys Leu Pro
 180 185 190
 Asn Leu Ala Val Ile Ala Ser His Ser Asn Phe Arg Ser Val Leu Asp
 195 200 205
 His Arg Arg Asn Leu Val Asp Ala His Ala Lys Glu Ile Val Arg Arg
 210 215 220
 Lys Gly Val Ile Gly Leu Asn Leu Val Arg Ser Tyr Val Gly Asp Ser
 225 230 235 240
 Leu Gly Asp Leu Glu Lys His Val Leu His Ala Glu Asn Leu Gly Ile
 245 250 255
 Leu Ser Ser Ile Val Leu Gly Ser Asp Phe Phe Tyr Ala Asn Glu Asp
 260 265 270
 Glu Asn Phe Phe Phe Asn Glu Cys Ser Ser Ala Glu Ala His Pro Val
 275 280 285
 Leu Asn Gln Leu Ile His Arg Ile Phe Ser Lys Gly Lys Ala Glu Ser
 290 295 300
 Ile Leu Ser Ser Arg Ala Glu Lys Phe Leu Lys Gln Val Ile Val Glu
 305 310 315 320
 Gln Val Asn Pro Lys Ile Thr Asp Val Lys Leu
 325 330

<210>282

<211>218

<212>PRT

<213>Chlamydia pneumoniae

<400>282

Arg Ile Glu Asn Ile Ser Gly Tyr Pro Leu Ser Pro Thr Ala Lys Lys
 1 5 10 15
 Leu Ala Gln Leu Phe Pro Gly Ala Ile Thr Leu Val Val Lys His Arg
 20 25 30
 Asn Pro Arg Phe Pro Lys Glu Thr Leu Ala Phe Arg Ile Val Asp His
 35 40 45
 Ser Val Val Arg Glu Ile Val Asp His Cys Gly Thr Leu Ile Gly Thr
 50 55 60
 Ser Ala Asn Leu Ser Glu Phe Pro Ser Ala Leu Thr Ala Gln Glu Ile
 65 70 75 80
 Phe Ala Asp Phe Ala Asp His Asp Leu Cys Ile Phe Asp Gly Pro Cys
 85 90 95
 Ser His Gly Leu Glu Ser Thr Val Val Ala Ser Asp Pro Leu Tyr Ile
 100 105 110
 Tyr Arg Glu Gly Leu Ile Ser Arg Ser Val Ile Glu Asn Ile Ala Gly
 115 120 125
 Thr Glu Ala Lys Ile Phe His Arg Thr Ser His Ala Phe Ser Lys His
 130 135 140
 Ile Lys Ile Tyr Thr Val Lys Asn Gln Glu Gln Leu Val Ser Phe Leu
 145 150 155 160

Ser Gly Ser Leu Phe Lys Gly Val Val Cys Glu Pro Lys Pro
 165 170 175
 Lys Asn Phe Tyr Thr Arg Leu Arg Glu Ala Leu Lys Lys Lys Thr Pro
 180 185 190
 Ser Ile Val Phe Ile Tyr Asp Ile Asn Thr Ser Asp Tyr Pro Glu Leu
 195 200 205
 Phe Pro Phe Leu Ser Pro Tyr Tyr Ile Glu
 210 215

<210>283

<211>90

<212>PRT

<213>Chlamydia pneumoniae

<400>283

Ser Ile Phe Gly Val Ile Val Pro Asp Lys Lys Ala Gln Ile Thr Phe
 1 5 10 15
 Ser Leu Pro Glu Val Met Ser Ala Ile His Gln Gly Lys Ile Val Ala
 20 25 30
 Leu Pro Thr Asp Thr Val Tyr Gly Phe Val Leu Ser Leu Tyr Ala Ser
 35 40 45
 Glu Ala Glu Glu Arg Leu Tyr Ala Leu Lys Asp Arg Glu Pro Ser Lys
 50 55 60
 Ala Phe Ala Leu Tyr Val Asn Ser Ile Glu Glu Ser Lys Thr Phe Leu
 65 70 75 80
 Val Ile Pro Tyr Leu Leu Gln Leu Arg Asn
 85 90

<210>284

<211>243

<212>PRT

<213>Chlamydia pneumoniae

<400>284

Met Thr Asp Tyr Ser Phe Phe Arg Arg Lys Ile Gly Asn Ile Glu Ala
 1 5 10 15
 Ile Glu Cys Pro Gly Asn Pro Gln Asp Pro Ile Ile Ile Leu Cys His
 20 25 30
 Gly Tyr Gly Ser Leu Ala Asp Asn Leu Thr Phe Phe Pro Ser Ile Cys
 35 40 45
 Ser Phe Ser Lys Leu Arg Pro Thr Trp Ile Phe Pro Asn Gly Ile Leu
 50 55 60
 Pro Leu Glu Asn Asp Phe Arg Gly Ser Arg Ala Cys Phe Pro Leu Asn
 65 70 75 80
 Val Leu Leu Leu Gln Glu Leu Ser Arg Leu Tyr Ala Asn Gly Val Gly
 85 90 95
 Asn Leu Gln Glu Lys Tyr Asp Glu Leu Phe Asp Val Asp Leu Glu Thr
 100 105 110
 Pro Lys Glu Ala Leu Glu Glu Leu Ile Leu Asn Leu Asn Arg Pro Tyr
 115 120 125
 Asn Glu Ile Ile Ile Gly Gly Phe Ser Gln Gly Ala Ile Leu Ala Thr
 130 135 140
 His Leu Val Leu Thr Ser Gln Asn Pro Tyr Ala Gly Ala Leu Ile Phe
 145 150 155 160
 Ala Gly Ala Arg Leu Phe Asn Gln Gly Trp Glu Glu Gly Leu Lys Gln
 165 170 175
 Cys Ala Gln Val Pro Phe Leu Gln Ser His Gly Tyr Glu Asp Glu Ile
 180 185 190
 Leu Pro Tyr His Leu Gly Ala His Leu Asn Asp Leu Leu Thr Lys
 195 200 205
 Leu Asn Gly Gln Phe Val Ser Phe His Gly Gly His Glu Ile Pro Ser
 210 215 220
 Val Val Phe Gln Lys Met Gln Val Thr Val Pro Asn Trp Ile Asp Pro
 225 230 235 240
 Ala Arg Gly

<210>285

<211>274

<212>PRT

<213>Chlamydia pneumoniae

<400>285

Phe Asn Arg Gln Ser Asp Ala Thr Tyr Ala Thr Trp Val Met His Leu
 1 5 10 15
 Glu Glu Glu Asn Gln Gly Trp Glu Ala Leu Leu Arg Lys Val Tyr His
 20 25 30
 Gln Glu Val Pro Pro Ala Ile Leu Leu His Gly Phe Thr Leu Pro Val
 35 40 45
 Leu Gln Asp Lys Ala Glu Gln Leu Ala Ser Glu Ile Leu Leu Ser Ser
 50 55 60
 Ser Pro Gly Ser Glu His Lys Val Ser Gln Lys Ile His Pro Asp Ile
 65 70 75 80
 Tyr Gln Phe Phe Pro Glu Gly Lys Gly Arg Leu His Ser Ile Asp Leu
 85 90 95
 Pro Arg Gly Ile Lys Lys Gln Ile Tyr Ile Ser Pro Phe Glu Ala Asn
 100 105 110
 Tyr Lys Ile Tyr Ile Ile His Glu Ala Asp Arg Met Thr Leu Ala Ala
 115 120 125
 Ile Ser Ala Phe Leu Lys Val Phe Glu Glu Pro Pro Lys His Ala Val
 130 135 140
 Ile Ile Leu Thr Thr Ala Lys Val Gln Arg Leu Pro Lys Thr Ile Ile
 145 150 155 160
 Ser Arg Ser Leu Ser Ile Phe Ile Glu Arg Gly Glu Lys Ile Leu Cys
 165 170 175
 Ser Lys Glu Thr Phe Ser Tyr Leu Phe Arg Tyr Ala Gln Cys Glu Ile
 180 185 190
 Pro Val Thr Glu Val Ser Gln Ile Ile Lys Glu Ser Ser Glu Thr Asp
 195 200 205
 Lys Gln Val Leu Arg Asp Lys Val Gln Arg Phe Met Glu Val Leu Leu
 210 215 220
 Glu Leu Tyr Arg Asp Arg Tyr Thr Leu Asn Leu Gly Leu Lys Ala Ser
 225 230 235 240
 Ala Leu Asn Tyr Pro Glu His Val Lys Glu Ile Leu Gln Leu Pro Leu
 245 250 255
 Leu Pro Leu Asp Lys Val Leu Leu Ile Val Glu Ser Ala Trp Ser Val
 260 265 270
 Ile Glu

<210>286

<211>209

<212>PRT

<213>Chlamydia pneumoniae

<400>286

Gly Ser Ile Val Phe Ile Val Ile Glu Gly Gly Glu Gly Ser Gly Lys
 1 5 10 15
 Ser Ser Leu Ala Lys Ala Leu Gly Asp Gln Leu Val Ala Gln Asp Arg
 20 25 30
 Lys Val Leu Leu Thr Arg Glu Pro Gly Gly Cys Leu Ile Gly Glu Arg
 35 40 45
 Leu Arg Asp Leu Ile Leu Glu Pro Pro His Leu Glu Leu Ser Arg Cys
 50 55 60
 Cys Glu Leu Phe Leu Phe Leu Gly Ser Arg Ala Gln His Ile Gln Glu
 65 70 75 80
 Val Ile Ile Pro Ala Leu Arg Asp Gly Tyr Ile Val Ile Cys Glu Arg
 85 90 95
 Phe His Asp Ser Thr Ile Val Tyr Gln Gly Ile Ala Glu Gly Leu Gly
 100 105 110
 Ala Asp Phe Val Ala Asp Leu Cys Ser Lys Val Val Gly Pro Thr Pro
 115 120 125
 Phe Leu Pro Asn Phe Val Leu Leu Asp Ile Pro Ala Asp Ile Gly
 130 135 140
 Leu Gln Arg Lys His Arg Gln Lys Val Phe Asp Lys Phe Glu Lys Lys
 145 150 155 160

Pro Leu Ser Tyr His Asn Arg Ile Arg Glu Gly Phe Ser Leu Ala
 165 170 175
 Ser Ala Asp Pro Ser Arg Tyr Leu Val Leu Asp Ala Arg Glu Ser Leu
 180 185 190
 Ala Ser Leu Ile Asp Lys Val Met Leu His Thr Gln Leu Gly Leu Cys
 195 200 205
 Thr

<210>287

<211>834

<212>PRT

<213>Chlamydia pneumoniae

<400>287

Met Phe Asn Lys Asp Glu Ile Ile Val Pro Lys Asn Leu Glu Glu Glu
 1 5 10 15
 Met Lys Glu Ser Tyr Leu Arg Tyr Ser Met Ser Val Ile Ile Ser Arg
 20 25 30
 Ala Leu Pro Asp Ile Arg Asp Gly Leu Lys Pro Ser Gln Arg Arg Val
 35 40 45
 Leu Tyr Ala Met Lys Gln Leu Ser Leu Ser Pro Gly Ala Lys His Arg
 50 55 60
 Lys Cys Ala Lys Ile Cys Gly Asp Thr Ser Gly Asp Tyr His Pro His
 65 70 75 80
 Gly Glu Ser Val Ile Tyr Pro Thr Leu Val Arg Met Ala Gln Asn Trp
 85 90 95
 Ala Met Arg Tyr Pro Leu Val Asp Gly Gln Gly Asn Phe Gly Ser Ile
 100 105 110
 Asp Gly Asp Pro Pro Ala Ala Met Arg Tyr Thr Glu Ala Arg Leu Thr
 115 120 125
 His Ser Ala Met Tyr Leu Met Glu Asp Leu Asp Lys Asp Thr Val Asp
 130 135 140
 Ile Val Pro Asn Tyr Asp Glu Thr Lys His Glu Pro Val Val Phe Pro
 145 150 155 160
 Ser Lys Phe Pro Asn Leu Leu Cys Asn Gly Ser Ser Gly Ile Ala Val
 165 170 175
 Gly Met Ala Thr Asn Ile Pro Pro His Asn Leu Gly Glu Leu Ile Glu
 180 185 190
 Ala Thr Leu Leu Leu Leu Ala Asn Pro Gln Ala Ser Val Asp Glu Ile
 195 200 205
 Leu Gln Val Met Pro Gly Pro Asp Phe Pro Thr Gly Gly Ile Ile Cys
 210 215 220
 Gly Ser Glu Gly Ile Arg Ser Thr Tyr Thr Thr Gly Arg Gly Lys Ile
 225 230 235 240
 Lys Val Arg Ala Arg Leu His Val Glu Glu Asn Glu Asp Lys His Arg
 245 250 255
 Glu Ser Ile Ile Ile Thr Glu Met Pro Tyr Asn Val Asn Lys Ser Arg
 260 265 270
 Leu Ile Glu Gln Ile Ala Asn Leu Val Asn Glu Lys Thr Leu Ala Gly
 275 280 285
 Ile Ser Asp Val Arg Asp Glu Ser Asp Lys Asp Gly Ile Arg Val Val
 290 295 300
 Leu Glu Ile Lys Lys Gly Glu Ser Ser Glu Ile Ile Ile Asn Arg Leu
 305 310 315 320
 Tyr Lys Phe Thr Asp Val Gln Val Thr Phe Gly Ala Asn Met Leu Ala
 325 330 335
 Leu Asp Lys Asn Leu Pro Arg Thr Met Ser Ile His Arg Met Ile Ser
 340 345 350
 Ala Trp Ile Arg His Arg Lys Glu Val Ile Arg Arg Arg Thr Arg Tyr
 355 360 365
 Glu Leu Asn Lys Ala Glu Thr Arg Ala His Val Leu Glu Gly Tyr Leu
 370 375 380
 Lys Ala Leu Ser Cys Leu Asp Ala Leu Val Lys Thr Ile Arg Glu Ser
 385 390 395 400
 Gly Asn Lys Glu His Ala Lys Glu Arg Ile Ile Glu Ser Phe Gly Phe

405 410 415
 Thr Glu Pro Gln Ala Leu Ala Ile Leu Glu Leu Arg Leu Tyr Gln Leu
 420 425 430
 Thr Gly Leu Glu Ala Glu Lys Ile Gln Lys Glu Tyr Glu Glu Leu Leu
 435 440 445
 Asn Lys Ile Ala Tyr Tyr Lys Gln Val Leu Ser Asp Glu Gly Leu Val
 450 455 460
 Lys Asp Ile Ile Arg Asn Glu Leu Gln Asp Leu Leu Lys His His Lys
 465 470 475 480
 Val Ala Arg Arg Thr Thr Ile Glu Phe Asp Ala Asp Asp Ile Arg Asp
 485 490 495
 Ile Glu Asp Ile Ile Thr Asn Glu Ser Val Ile Ile Thr Ile Ser Gly
 500 505 510
 Asp Asp Tyr Val Lys Arg Met Pro Val Lys Val Phe Lys Glu Gln Arg
 515 520 525
 Arg Gly Gly His Gly Val Thr Gly Phe Asp Met Lys Lys Gly Ala Gly
 530 535 540
 Phe Leu Lys Ala Val Tyr Ser Ala Phe Thr Lys Asp Tyr Leu Leu Ile
 545 550 555 560
 Phe Thr Asn Phe Gly Gln Cys Tyr Trp Leu Lys Val Trp Gln Leu Pro
 565 570 575
 Glu Gly Glu Arg Ala Lys Gly Lys Pro Ile Ile Asn Phe Leu Glu
 580 585 590
 Gly Ile Arg Pro Gly Glu Glu Leu Ala Ala Ile Leu Asn Ile Lys Asn
 595 600 605
 Phe Asp Asn Ala Gly Phe Leu Phe Leu Ala Thr Lys Arg Gly Val Val
 610 615 620
 Lys Lys Val Ser Leu Asp Ala Phe Ser Asn Pro Arg Lys Lys Gly Ile
 625 630 635 640
 Arg Ala Leu Glu Ile Asp Glu Gly Asp Glu Leu Ile Ala Ala Cys His
 645 650 655
 Ile Val Ser Asp Glu Glu Lys Val Met Leu Phe Thr His Leu Gly Met
 660 665 670
 Ala Val Arg Phe Pro His Glu Lys Val Arg Pro Met Gly Arg Thr Ala
 675 680 685
 Arg Gly Val Arg Gly Val Ser Leu Lys Asn Glu Glu Asp Lys Val Val
 690 695 700
 Ser Cys Gln Ile Val Thr Glu Asn Gln Ser Val Leu Ile Val Cys Asp
 705 710 715 720
 Gln Gly Phe Gly Lys Arg Ser Leu Val Glu Asp Phe Arg Glu Thr Asn
 725 730 735
 Arg Gly Gly Val Gly Val Arg Ser Ile Leu Ile Asn Glu Arg Asn Gly
 740 745 750
 Asn Val Leu Gly Ala Ile Pro Val Thr Asp His Asp Ser Ile Leu Leu
 755 760 765
 Met Ser Ser Gln Gly Gln Ala Ile Arg Ile Asn Met Gln Asp Val Arg
 770 775 780
 Val Met Gly Arg Ser Thr Gln Gly Val Arg Leu Val His Leu Lys Glu
 785 790 795 800
 Gly Asp Ala Leu Val Ser Met Glu Lys Leu Ser Ser Asn Glu Asn Asp
 805 810 815
 Asp Glu Val Leu Ser Gly Ser Glu Glu Glu Cys Ser Asp Thr Val Ser
 820 825 830
 Leu Arg

<210>288

<211>789

<212>PRT

<213>Chlamydia pneumoniae

<400>288

Lys Gly Tyr Lys Leu Phe Val Ser Ala Pro Gly Cys Thr Leu Glu Ile
 1 5 10 15
 Arg Glu Ser Arg Val Phe Ile His Leu Val Tyr Glu Val Val Asp Asn
 20 25 30

Ser Ile Asp Glu Ala Met Ala Gly Tyr Cys Ser Arg Asp Val Arg
 35 40 45
 Ile Leu Glu Asp Gly Gly Ile Val Ile Val Asp Asn Gly Arg Gly Ile
 50 55 60
 Pro Ile Glu Val His Glu Arg Glu Ser Ala Lys Gln Gly Arg Glu Val
 65 70 75 80
 Ser Ala Leu Glu Val Val Leu Thr Val Leu His Ala Gly Gly Lys Phe
 85 90 95
 Asp Lys Asp Ser Tyr Lys Val Ser Gly Gly Leu His Gly Val Gly Val
 100 105 110
 Ser Cys Val Asn Ala Leu Ser Glu Lys Leu Val Ala Thr Val Phe Lys
 115 120 125
 Asp Lys Lys Cys Tyr Gln Met Glu Phe Ser Arg Gly Ile Pro Val Thr
 130 135 140
 Pro Leu Gln Tyr Val Ser Val Ser Asp Arg Gln Gly Thr Glu Ile Val
 145 150 155 160
 Phe Tyr Pro Asp Pro Lys Ile Phe Ser Thr Cys Thr Phe Asp Arg Ser
 165 170 175
 Ile Leu Met Lys Arg Leu Arg Glu Leu Ala Phe Leu Asn Arg Gly Ile
 180 185 190
 Thr Ile Val Phe Glu Asp Asp Arg Asp Val Ser Phe Asp Lys Val Thr
 195 200 205
 Phe Phe Tyr Glu Gly Gly Ile Gln Ser Phe Val Ser Tyr Leu Asn Gln
 210 215 220
 Asn Lys Glu Ser Leu Phe Ser Glu Pro Ile Tyr Ile Cys Gly Thr Arg
 225 230 235 240
 Val Gly Asp Asp Gly Glu Ile Glu Phe Glu Ala Ala Leu Gln Trp Asn
 245 250 255
 Ser Gly Tyr Ser Glu Leu Val Tyr Ser Tyr Ala Asn Asn Ile Pro Thr
 260 265 270
 Arg Gln Gly Gly Thr His Leu Thr Gly Phe Ser Thr Ala Leu Thr Arg
 275 280 285
 Val Ile Asn Thr Tyr Ile Lys Ala His Asn Leu Ala Lys Asn Asn Lys
 290 295 300
 Leu Ala Leu Thr Gly Glu Asp Ile Arg Glu Gly Leu Thr Ala Val Ile
 305 310 315 320
 Ser Val Lys Val Pro Asn Pro Gln Phe Glu Gly Gln Thr Lys Gln Lys
 325 330 335
 Leu Gly Asn Ser Asp Val Ser Ser Val Ala Gln Gln Val Val Gly Glu
 340 345 350
 Ala Leu Thr Ile Phe Phe Glu Glu Asn Pro Gln Ile Ala Arg Met Ile
 355 360 365
 Val Asp Lys Val Phe Val Ala Ala Gln Ala Arg Glu Ala Ala Lys Lys
 370 375 380
 Ala Arg Glu Leu Thr Leu Arg Lys Ser Ala Leu Asp Ser Ala Arg Leu
 385 390 395 400
 Pro Gly Lys Leu Ile Asp Cys Leu Glu Lys Asp Pro Glu Lys Cys Glu
 405 410 415
 Met Tyr Ile Val Glu Gly Asp Ser Ala Gly Gly Ser Ala Lys Gln Gly
 420 425 430
 Arg Asp Arg Arg Phe Gln Ala Ile Leu Pro Ile Arg Gly Lys Ile Leu
 435 440 445
 Asn Val Glu Lys Ala Arg Leu Gln Lys Ile Phe Gln Asn Gln Glu Ile
 450 455 460
 Gly Thr Ile Ile Ala Ala Leu Gly Cys Gly Ile Gly Ala Asp Asn Phe
 465 470 475 480
 Asn Leu Ser Lys Leu Arg Tyr Arg Arg Ile Ile Ile Met Thr Asp Ala
 485 490 495
 Asp Val Asp Gly Ser His Ile Arg Thr Leu Leu Leu Thr Phe Phe Tyr
 500 505 510
 Arg His Met Thr Ala Leu Ile Glu Asn Glu Cys Val Tyr Ile Ala Gln
 515 520 525
 Pro Pro Leu Tyr Lys Val Ser Lys Lys Lys Asp Phe Arg Tyr Ile Leu
 530 535 540

Ser Glu Lys Glu Met Asp Ser Tyr Leu Leu Met Leu Gly Thr Asn Glu
 545 550 555 560
 Ser Ser Ile Leu Phe Lys Ser Thr Glu Arg Glu Leu Arg Gly Glu Ala
 565 570 575
 Leu Glu Ser Phe Ile Asn Val Ile Leu Asp Val Glu Ser Phe Ile Asn
 580 585 590
 Thr Leu Glu Lys Lys Ala Ile Pro Phe Ser Glu Phe Leu Glu Met Tyr
 595 600 605
 Lys Glu Gly Ile Gly Tyr Pro Leu Tyr Tyr Leu Ala Pro Ala Thr Gly
 610 615 620
 Met Gln Gly Gly Arg Tyr Leu Tyr Ser Asp Glu Glu Lys Glu Glu Ala
 625 630 635 640
 Leu Ala Gln Glu Glu Thr His Lys Phe Lys Ile Ile Glu Leu Tyr Lys
 645 650 655
 Val Ala Val Phe Val Asp Ile Gln Asn Gln Leu Lys Glu Tyr Gly Leu
 660 665 670
 Asp Ile Ser Ser Tyr Leu Ile Pro Gln Lys Asn Glu Ile Val Ile Gly
 675 680 685
 Asn Glu Asp Ser Pro Ser Cys Asn Tyr Ser Cys Tyr Thr Leu Glu Glu
 690 695 700
 Val Ile Asn Tyr Leu Lys Asn Leu Gly Arg Lys Gly Ile Glu Ile Gln
 705 710 715 720
 Arg Tyr Lys Gly Leu Gly Glu Met Asn Ala Asp Gln Leu Trp Asp Thr
 725 730 735
 Thr Met Asn Pro Glu Gln Arg Thr Leu Ile His Val Ser Leu Lys Asp
 740 745 750
 Ala Val Glu Ala Asp His Ile Phe Thr Met Leu Met Gly Glu Glu Val
 755 760 765
 Pro Pro Arg Arg Glu Phe Ile Glu Ser His Ala Leu Ser Ile Arg Ile
 770 775 780
 Asn Asn Leu Asp Ile
 785

<210>289

<211>116

<212>PRT

<213>Chlamydia pneumoniae

<400>289

Asp Met Phe Leu Lys Arg Lys Lys Arg Gly Gly Ser Gln Val Gln Asn
 1 5 10 15
 Lys Gly Thr Ala Ser Pro Ile Lys His Ala Lys His Tyr Leu His Asn
 20 25 30
 Tyr Leu Gln Glu Leu Gln Lys Ile Met Ala Ala Arg Pro His Asp Ala
 35 40 45
 Ile Asp Ala Trp Asn Gln Val Phe Arg Asp Lys Tyr Lys Gly Met Ser
 50 55 60
 Gln Ala Ile Gly Phe Arg Asp His Ile Leu Leu Val Lys Val Tyr Asn
 65 70 75 80
 Ser Ser Leu Tyr Ala Leu Leu Lys Gln Thr Pro Gln Asn Asp Leu Ile
 85 90 95
 Met Ser Leu Tyr Gln Val Ala Ser His Val Gln Ile Arg Glu Ile Gln
 100 105 110
 Phe Leu Leu Gly
 115

<210>290

<211>200

<212>PRT

<213>Chlamydia pneumoniae

<400>290

Asn Ile Ser Ile Phe Tyr Pro Lys Tyr Phe Ile Glu Gly Lys Glu Val
 1 5 10 15
 Leu Ile Lys Asn Leu Pro Pro Leu Ile Phe Tyr Gly Val Ile Leu Met
 20 25 30
 Ile Ile Asn Val Arg Ala Pro Ala Phe Gly Ile Thr Ser Val Gln Gln
 35 40 45

Phe Ser Thr Asn Ile Gln Ala Ala Ile Pro Ile Leu Val Ile
 50 55 60
 Gly Cys Ser Arg Ile Ser Ser Thr Tyr Ala Glu Asp Ile Glu Glu Val
 65 70 75 80
 Ala Gln Glu Lys Leu Glu Lys Ser Thr His Ser Lys Ser Ser Thr Ser
 85 90 95
 Val Asn Leu Trp Ala His Arg Val Arg Gly Val Val Glu Ile Leu Gly
 100 105 110
 Gly Gly Ile Val Ile Leu Ala Leu Glu Ile Thr Ala Leu Val Leu Gln
 115 120 125
 Val Ile Ile Lys Leu Ile Lys Cys Leu Ile Asp Val Leu Cys Val Cys
 130 135 140
 Leu Phe Gly Leu Gly Val Cys Val Val Ala Ile Ile Gly Ala Ile Ala
 145 150 155 160
 Phe Cys Val Val Val Val Val Lys Tyr Leu Gly Phe Cys Ser Gln Gly
 165 170 175
 Glu Glu Leu Glu Pro Ile Glu Val Lys Thr Leu Ile Ser Pro Asp Lys
 180 185 190
 Pro Tyr Pro Thr Val Val Tyr Val
 195 200

<210>291

<211>275

<212>PRT

<213>Chlamydia pneumoniae

<400>291

Arg Asp Ser Met Lys Lys Lys Leu Ser Leu Leu Val Gly Leu Ile Phe
 1 5 10 15
 Val Leu Ser Ser Cys His Lys Glu Asp Ala Gln Asn Lys Ile Arg Ile
 20 25 30
 Val Ala Ser Pro Thr Pro His Ala Glu Leu Leu Glu Ser Leu Gln Glu
 35 40 45
 Glu Ala Lys Asp Leu Gly Ile Lys Leu Lys Ile Leu Pro Val Asp Asp
 50 55 60
 Tyr Arg Ile Pro Asn Arg Leu Leu Leu Asp Lys Gln Val Asp Ala Asn
 65 70 75 80
 Tyr Phe Gln His Gln Ala Phe Leu Asp Asp Glu Cys Glu Arg Tyr Asp
 85 90 95
 Cys Lys Gly Glu Leu Val Val Ile Ala Lys Val His Leu Glu Pro Gln
 100 105 110
 Ala Ile Tyr Ser Lys Lys His Ser Ser Leu Glu Arg Leu Lys Ser Gln
 115 120 125
 Lys Lys Leu Thr Ile Ala Ile Pro Val Asp Arg Thr Asn Ala Gln Arg
 130 135 140
 Ala Leu His Leu Leu Glu Glu Cys Gly Leu Ile Val Cys Lys Gly Pro
 145 150 155 160
 Ala Asn Leu Asn Met Thr Ala Lys Asp Val Cys Gly Lys Glu Asn Arg
 165 170 175
 Ser Ile Asn Ile Leu Glu Val Ser Ala Pro Leu Leu Val Gly Ser Leu
 180 185 190
 Pro Asp Val Asp Ala Ala Val Ile Pro Gly Asn Phe Ala Ile Ala Ala
 195 200 205
 Asn Leu Ser Pro Lys Lys Asp Ser Leu Cys Leu Glu Asp Leu Ser Val
 210 215 220
 Ser Lys Tyr Thr Asn Leu Val Val Ile Arg Ser Glu Asp Val Gly Ser
 225 230 235 240
 Pro Lys Met Ile Lys Leu Gln Lys Leu Phe Gln Ser Pro Ser Val Gln
 245 250 255
 His Phe Phe Asp Thr Lys Tyr His Gly Asn Ile Leu Thr Met Thr Gln
 260 265 270
 Asp Asn Gly
 275

<210>292

<211>221

<212>PRT

<213>Chlamydia pneumoniae

<400>292

Met Gln Ser Asp Leu Ile Gln Ile Leu Leu Lys Glu Thr Val Asn Thr
 1 5 10 15
 Leu Tyr Met Val Ser Thr Ala Phe Phe Phe Ser Cys Ala Ile Gly Gly
 20 25 30
 Met Leu Gly Leu Gly Leu Phe Cys Thr Ser Pro Lys Ser Leu Asn Pro
 35 40 45
 Lys Lys Ser Leu Tyr Ala Thr Ile Ser Met Ile Leu Ser Phe Leu Thr
 50 55 60
 Ala Ile Pro Phe Ala Ile Leu Ile Val Ile Leu Phe Pro Ile Thr Arg
 65 70 75 80
 Trp Ile Val Gly Thr Ser Leu Gly Pro Thr Ala Ser Ile Val Pro Leu
 85 90 95
 Thr Ile Gly Ala Ile Pro Phe Val Val Thr Ile Val Val Asp Ala Phe
 100 105 110
 Arg Asn Ser Ala Leu Asn Tyr Leu Glu Ser Ala Val Ala Leu Gly Ile
 115 120 125
 Pro Lys Arg Asn Ile Leu Phe Gly Ile Leu Leu Pro Glu Ser Tyr Pro
 130 135 140
 Gln Leu Ile Phe Ser Leu Lys Ser Leu Val Val His Leu Ile Ser Cys
 145 150 155 160
 Ser Thr Leu Ala Gly Phe Val Gly Gly Gly Leu Gly Gln Leu Leu
 165 170 175
 Leu Gln Tyr Gly Tyr Tyr Arg Phe Glu Trp Ser Val Thr Thr Ser Val
 180 185 190
 Leu Val Ile Thr Leu Val Leu Ile Glu Ser Val Arg Ile Leu Gly Asp
 195 200 205
 Phe Trp Gly Arg Arg Val Leu Lys Tyr Arg Gly Ile Leu
 210 215 220

<210>293

<211>341

<212>PRT

<213>Chlamydia pneumoniae

<400>293

Val Ser Glu Gln His Ser Pro Ile Ile Ser Val Gln Asp Val Ser Lys
 1 5 10 15
 Lys Leu Gly Asp His Ile Leu Leu Ser Lys Val Ser Phe Ser Val Tyr
 20 25 30
 Pro Gly Glu Val Phe Gly Ile Val Gly His Ser Gly Ser Gly Lys Thr
 35 40 45
 Thr Leu Leu Arg Cys Leu Asp Phe Leu Asp Met Pro Thr Ser Gly Ser
 50 55 60
 Ile Ser Val Ala Gly Phe Asp Asn Ser Leu Pro Thr Gln Lys Phe Ser
 65 70 75 80
 Arg Arg Asn Phe Ser Lys Lys Val Ala Tyr Ile Ser Gln Asn Tyr Gly
 85 90 95
 Leu Phe Ser Ser Lys Thr Val Phe Glu Asn Ile Ala Tyr Pro Leu Arg
 100 105 110
 Ile His His Ser Glu Met Ser Lys Ser Glu Val Glu Glu Gln Val Tyr
 115 120 125
 Asp Thr Leu Asn Phe Leu Asn Leu Tyr His Arg His Asp Ala Tyr Pro
 130 135 140
 Gly Asn Leu Ser Gly Gly Gln Lys Gln Glu Val Ala Ile Ala Arg Ala
 145 150 155 160
 Ile Val Cys Gln Pro Glu Val Val Leu Cys Asp Glu Ile Thr Ser Ala
 165 170 175
 Leu Asp Pro Lys Ser Thr Glu Asn Ile Ile Glu Arg Leu Leu Gln Leu
 180 185 190
 Asn Gln Glu Arg Gly Ile Thr Leu Val Leu Val Ser His Glu Ile Asp
 195 200 205
 Val Val Lys Lys Ile Cys Ser His Val Leu Val Met His Gln Gly Ala
 210 215 220
 Val Glu Glu Leu Gly Thr Thr Glu Glu Leu Phe Leu Asn Ser Glu Asn

225					230					235				240
Ser	Ile	Thr	Asn	Glu	Leu	Phe	His	Glu	Asp	Ile	Asn	Ile	Ala	Ala
				245					250				255	
Ser	Ser	Cys	Tyr	Phe	Ala	Glu	Asp	Arg	Glu	Glu	Val	Leu	Arg	Leu
			260					265					270	Asn
Phe	Ser	Lys	Glu	Leu	Ala	Ile	Gln	Gly	Ile	Ile	Ser	Lys	Val	Ile
		275					280					285		Gln
Thr	Gly	Leu	Val	Ser	Ile	Asn	Ile	Leu	Ser	Gly	Asn	Ile	Asn	Leu
	290					295				300				Phe
Arg	Lys	Ser	Pro	Met	Gly	Phe	Leu	Ile	Ile	Val	Leu	Glu	Gly	Glu
305					310				315					320
Glu	Gln	Arg	Lys	Lys	Ala	Lys	Glu	Leu	Leu	Ile	Glu	Leu	Gly	Val
			325					330					335	Val
Ile	Lys	Glu	Phe	Tyr										
			340											

<210>294

<211>357

<212>PRT

<213>Chlamydia pneumoniae

<400>294

Ile	Ser	Leu	Arg	Arg	His	Thr	Leu	Met	Leu	Asn	Ile	His	Asp	Ile	Leu
1				5					10					15	
Gly	Asn	Asp	Asp	Glu	Asn	Leu	Leu	Ser	Tyr	Gln	Cys	Lys	His	Ile	Thr
			20					25					30		
Lys	Asp	Lys	Leu	Thr	Leu	Pro	Ser	His	Asp	Phe	Val	Asp	Lys	Val	Phe
		35					40					45			
Gly	Leu	Ser	Asp	Arg	Asn	Asn	Arg	Val	Leu	Arg	Ser	Leu	Gln	Thr	Met
	50				55					60					
Phe	Ser	His	Gly	Arg	Leu	Ala	Asn	Ser	Gly	Tyr	Leu	Ser	Ile	Leu	Pro
65				70					75					80	
Val	Asp	Gln	Gly	Ile	Glu	His	Ser	Ala	Gly	Ala	Ser	Phe	Ala	Ile	Asn
			85						90					95	
Pro	Ile	Tyr	Phe	Asp	Pro	Glu	Asn	Ile	Val	Lys	Leu	Ala	Ile	Glu	Ser
		100						105					110		
Gly	Cys	Ser	Ala	Val	Ala	Ser	Thr	Tyr	Gly	Thr	Leu	Ser	Leu	Leu	Ser
		115					120					125			
Arg	Lys	Tyr	Ala	His	Lys	Ile	Pro	Phe	Met	Leu	Lys	Leu	Asn	His	Asn
	130					135					140				
Glu	Leu	Leu	Ser	Tyr	Pro	Thr	Lys	Tyr	His	Gln	Ile	Phe	Phe	Thr	Gln
145					150					155					160
Val	Glu	Ala	Ala	Tyr	Ser	Met	Gly	Ala	Val	Ala	Val	Gly	Ala	Thr	Val
				165					170					175	
Tyr	Phe	Gly	Ser	Glu	Thr	Ser	Asn	Glu	Glu	Ile	Val	Ala	Val	Ser	Asn
		180						185					190		
Ala	Phe	Ala	Lys	Ala	Arg	Ser	Leu	Gly	Leu	Ala	Thr	Val	Leu	Trp	Cys
	195						200					205			
Tyr	Leu	Arg	Asn	Pro	Ala	Phe	Val	Ala	Asn	Gly	Val	Asp	Tyr	His	Thr
	210					215					220				
Ala	Ala	Asp	Leu	Thr	Gly	Gln	Ala	Asp	His	Leu	Gly	Ala	Thr	Leu	Gly
225					230					235					240
Ala	Asp	Ile	Val	Lys	Gln	Lys	Leu	Pro	Thr	Cys	Gln	Gly	Gly	Phe	Lys
				245					250					255	
Ala	Ile	Asn	Phe	Gly	Lys	Thr	Asp	Glu	Arg	Val	Tyr	Ser	Glu	Leu	Ser
		260						265					270		
Ser	Asn	His	Pro	Ile	Asp	Leu	Cys	Arg	Tyr	Gln	Val	Leu	Asn	Ser	Tyr
		275					280					285			
Cys	Gly	Lys	Val	Gly	Leu	Ile	Asn	Ser	Gly	Gly	Pro	Ser	Gly	Lys	Asn
	290					295					300				
Asp	Phe	Thr	Glu	Ala	Ala	Arg	Thr	Ala	Val	Ile	Asn	Lys	Arg	Ala	Gly
305					310					315					320
Gly	Met	Gly	Leu	Ile	Leu	Gly	Arg	Lys	Ala	Phe	Gln	Arg	Pro	Leu	Ser
				325					330					335	
Glu	Gly	Ile	Gln	Leu	Leu	Asn	Leu	Val	Gln	Asp	Ile	Tyr	Leu	Asp	Pro
			340					345						350	

Asn Ile Thr Ile Ala

355

<210>295

<211>468

<212>PRT

<213>Chlamydia pneumoniae

<400>295

Met His Ser His Ser Lys Pro Thr Lys Pro Leu Gly Thr Phe Thr Val
 1 5 10 15
 Gly Met Leu Ser Leu Ala Val Val Ile Ser Leu Arg Asn Leu Pro Leu
 20 25 30
 Thr Ala Lys His Gly Leu Ser Thr Leu Phe Phe Tyr Gly Leu Ala Val
 35 40 45
 Ile Cys Phe Met Ile Pro Tyr Ala Leu Ile Ser Ala Glu Leu Ala Ser
 50 55 60
 Phe Lys Pro Gln Gly Ile Tyr Ile Trp Ala Arg Asp Ala Leu Gly Lys
 65 70 75 80
 Trp Trp Gly Phe Phe Ala Ile Trp Met Gln Trp Phe His Asn Met Thr
 85 90 95
 Trp Tyr Pro Ala Val Leu Ala Phe Ile Ala Ser Thr Ile Val Tyr Lys
 100 105 110
 Ile Asn Pro Glu Leu Ala His Asn Lys Val Tyr Ile Ala Thr Val Ile
 115 120 125
 Leu Ala Gly Phe Trp Ile Leu Thr Phe Phe Asn Phe Leu Gly Ile Thr
 130 135 140
 Ser Ser Ala Leu Phe Ser Ser Ile Cys Val Ile Ile Gly Thr Leu Ile
 145 150 155 160
 Pro Gly Val Ile Leu Val Ser Leu Ala Leu Phe Trp Ile Phe Ser Gly
 165 170 175
 Asn Pro Ile Ala Ile Ser Leu Ser Trp Gly Asn Leu Leu Pro Asn Phe
 180 185 190
 Ser Asn Val Ser Ser Leu Val Leu Leu Ala Gly Met Leu Leu Ala Leu
 195 200 205
 Cys Gly Leu Glu Ala Asn Ala Asn Leu Ala Ser Asp Met Val Asn Pro
 210 215 220
 Arg Lys Asn Tyr Pro Lys Ala Val Phe Ile Gly Ala Ile Ala Thr Leu
 225 230 235 240
 Thr Ile Leu Val Leu Gly Ser Leu Ser Ile Ala Ile Val Ile Pro Lys
 245 250 255
 Glu Glu Ile Ser Leu Val Ser Gly Leu Val Lys Thr Phe Thr Leu Phe
 260 265 270
 Phe Asp Lys Tyr Asn Leu Ser Trp Met Thr Gly Ile Val Val Val Met
 275 280 285
 Thr Ile Ala Gly Ser Leu Gly Glu Leu Asn Ala Trp Met Phe Ala Gly
 290 295 300
 Thr Lys Gly Leu Phe Ile Ser Thr Gln Asn Asp Cys Leu Pro Arg Leu
 305 310 315 320
 Phe Lys Lys Val Asn Ser Lys Asn Val Pro Thr Asn Leu Met Leu Phe
 325 330 335
 Gln Gly Ile Val Val Thr Ile Phe Thr Leu Leu Phe Leu Cys Leu Asp
 340 345 350
 Ser Ala Asp Leu Val Tyr Trp Ile Leu Thr Ala Leu Ser Val Gln Met
 355 360 365
 Tyr Leu Ala Met Tyr Ile Cys Leu Phe Leu Ala Gly Pro Ile Leu Arg
 370 375 380
 Ile Lys Glu Pro Arg Ala Gln Arg Leu Tyr Ser Val Pro Gly Lys Phe
 385 390 395 400
 Leu Gly Ile Cys Thr Met Ser Ile Leu Gly Ile Leu Ser Cys Ala Phe
 405 410 415
 Ala Leu Trp Val Ser Phe Leu Pro Pro Arg Glu Leu Ala Gln Ile Ser
 420 425 430
 Glu Gly Ser Lys Ile Gly Tyr Thr Phe Leu Leu Leu Ala Phe Ser
 435 440 445
 Leu Asn Cys Leu Ile Pro Phe Gly Ile Tyr Phe Thr His Lys Arg Leu

450
Ser Lys Lys Ser
465
<210>296
<211>209
<212>PRT
<213>Chlamydia pneumoniae
<400>296
Arg Gly Ala Lys Phe Cys Arg Thr Lys Lys Tyr Ile Thr Pro Phe Leu
1 5 10 15
His His Leu Phe Glu Gly Asp Glu Val Ala Leu Leu Asn Gln Leu Ser
20 25 30
Leu Arg Leu Asp Leu Ile Val Pro Asn Ala Leu Tyr Pro Glu Pro Asp
35 40 45
Pro Ser Cys Trp Gln Ser Ile Asn Ser Glu Asp Cys Ala Lys Asp Ala
50 55 60
Glu Asp Gln Gln Glu Asp Phe Asn Lys Thr Lys Glu Ala Cys Lys Glu
65 70 75 80
Gly Leu Lys Lys Leu Val Leu Pro Ala Leu Ser Ile Thr Ser Ile Pro
85 90 95
Gln Leu Leu Arg Ala Arg Arg Phe Lys Gln Gly Ala Glu Ile Leu Met
100 105 110
Ala Ile Asp Arg Lys Lys Met Lys Gln Asn Pro Phe Ile Phe Leu Glu
115 120 125
Ala Leu Leu Glu Ser Glu Glu Phe Ser Ile Ser Val Gly Lys Tyr Leu
130 135 140
Lys Leu Leu Met Pro Ile His Leu Trp Asp Lys Leu Leu His Ala Ile
145 150 155 160
Tyr Leu Gly Tyr Phe Gln Thr Gly Leu Ile Cys Gln Gly Glu Ile Glu
165 170 175
Thr Phe Cys Arg Arg Ala Asn Leu Asn Pro Glu Ala Phe Gln Ala Ala
180 185 190
Ile Gln Gln Gly Arg Leu Leu Ser Phe Leu Phe Pro Lys Met Leu Leu
195 200 205
Asp

<210>297
<211>168
<212>PRT
<213>Chlamydia pneumoniae
<400>297
Phe Leu Asp Met Asn Ile Pro Ala Pro Gln Val Pro Val Ile Asp Glu
1 5 10 15
Pro Val Val Asn Asn Thr Ser Ser Tyr Gly Leu Ser Leu Lys Ser Ser
20 25 30
Leu Arg Pro Ile Thr Tyr Leu Ile Leu Ala Ile Leu Ala Ile Ala Thr
35 40 45
Leu Met Ser Val Leu Tyr Phe Cys Gly Ile Ile Ser Val Gly Thr Phe
50 55 60
Val Leu Gly Met Leu Ile Pro Leu Ser Val Cys Ser Val Leu Cys Val
65 70 75 80
Ala Tyr Leu Phe Tyr Gln Gln Ser Ser Ile Glu Lys Thr Lys Val Phe
85 90 95
Ser Ile Thr Ser Pro Ser Val Phe Phe Ser Asp Glu Asp Leu Asn Leu
100 105 110
Leu Leu Gly Arg Glu Glu Asp Ser Val Ser Ala Ile Asp Glu Leu Leu
115 120 125
Lys Asn Phe Pro Ala Asp Asp Phe Arg Arg Pro Lys Met Leu Pro Tyr
130 135 140
Ser Asn Phe Leu Asp Glu Gln Gly Arg Pro Asn Glu Ser Arg Glu Glu
145 150 155 160
Asp Ser His Thr Ser Lys Ile Leu
165

<210>298

<211>517

<212>PRT

<213>Chlamydia pneumoniae

<400>298

Lys Glu Leu Phe Asn Leu Phe Phe Phe Thr Ala Asn Lys Glu Thr Thr
 1 5 10 15
 Ala Ser His Glu Leu Ile Tyr Arg Lys Asn Gln Ser Phe Ser Leu Ser
 20 25 30
 Pro Val Thr Ile Leu Cys Leu Leu Ala Ile Ser Val Leu Leu Leu Leu
 35 40 45
 Gly Val Val Phe Ala Leu Val Gly Cys His Val Leu Ala Ala Pro Leu
 50 55 60
 Gly Leu Leu Val Trp Gly Cys Ala Ala Ser Val Cys Ser Met Met Ala
 65 70 75 80
 Ile Val Ser Leu Met Cys Leu Tyr Lys Gly Gly Lys Pro Leu Ile Glu
 85 90 95
 Pro Ser Asn Glu Glu Lys Ile Asp Pro Thr Lys Asp Leu Glu Ile Lys
 100 105 110
 Asp Pro Glu Ser Leu Lys Pro Val Pro Val Glu Gly Gln Ser Leu Pro
 115 120 125
 Lys Glu Arg Lys Thr Val Ser Phe Lys Ala Lys Ile Pro Ser Ile Val
 130 135 140
 Glu Asp Asp Phe Lys Pro Tyr Val Ile Gln Ser Thr Phe Tyr His Gln
 145 150 155 160
 Asn Lys Val Tyr Ser Lys Pro Ile Ala Glu Arg Met Gln Ser Leu Glu
 165 170 175
 Lys Glu Ile Thr Thr Leu Ile Val Asp Phe Pro Arg Ala Leu Glu Glu
 180 185 190
 Ser Ser Lys Ser Ser Gly Ser Leu Leu Arg Gly Val Ile Ser Glu Ile
 195 200 205
 Lys Asn Leu Phe Leu Pro Arg Phe Leu Ser Arg Lys Val Lys Tyr Ser
 210 215 220
 Leu Thr Ala Cys Leu Arg Arg Leu Gly Ser Ile Val Glu Glu Tyr Ala
 225 230 235 240
 Ser Ser Asp Leu Leu Ile Leu Leu Leu Thr Lys Pro Glu Pro Leu Asn
 245 250 255
 Met Val Thr Gln Leu Ile Ala His Leu Asn Ser Leu Lys Thr Glu
 260 265 270
 Lys Arg Lys Leu Thr Pro His Met Gln Lys Leu Val Leu Ser Ile Asn
 275 280 285
 Phe Trp Phe Tyr Gly Trp Ser Leu Glu Glu Lys Cys Ile Glu Lys Ile
 290 295 300
 Val Ala Tyr Asp Pro Asn Leu Leu Thr Asp Glu Leu Lys Ala His Leu
 305 310 315 320
 Glu Ala Gly Asn Ile Val Gln Phe Leu Leu Ser Phe Gln Ser Ser Glu
 325 330 335
 Met Gln Arg Glu Phe Arg Ala Leu Phe Pro Ser Asp Ala Gln Glu Leu
 340 345 350
 Pro Ser Ala Lys Asp Gly Ser Asn Tyr Val Pro Ala Ile Asn Ser Ser
 355 360 365
 Glu Tyr Met Tyr Asp Phe Lys Asp Leu Ser Val Leu Lys Lys Ser Leu
 370 375 380
 Ser Glu Arg Leu Ala Phe Cys Glu Lys Ile Pro Ser Pro Ser Ser Trp
 385 390 395 400
 Asn Phe Thr Ser Ser Val Ala Ser His Tyr Lys Asp Phe Ser Leu Leu
 405 410 415
 Phe Thr Phe Phe Ser Asn Gln Gln Ser Val Ile Leu Gln Asn Pro Phe
 420 425 430
 Leu Leu Ile Glu Leu Leu His Glu Asn Pro Lys Cys Gln Thr Phe Leu
 435 440 445
 Lys Gly Leu Leu Glu Lys Ala Met Pro Met Ser Asn Trp Ala Ala Leu
 450 455 460
 Phe Arg Pro Met Leu Met Gly Met Leu Cys Ser Gly Ile Ala Arg Lys
 465 470 475 480

Lys Glu Leu Lys Ile Ile Ala Glu His Leu Gly Val Phe Lys Glu
 485 490 495
 Ile Thr Gln Ala Ile Gly Ser Gly Lys Ile Leu Asp Leu Leu Leu Gln
 500 505 510
 His Leu Phe Asp Phe
 515
 <210>299
 <211>500
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>299
 Ser Cys Arg Glu Ser Lys Gly Lys Ile Met Val Gly Glu Gln Asn Arg
 1 5 10 15
 Asn Glu Glu Lys Leu Asp Thr Ala Phe Ser Ser Gly Asn Leu Met Asp
 20 25 30
 Ser Arg Thr Ser His Leu Asp Asp Glu Leu Ser Phe Lys Leu Glu Lys
 35 40 45
 Ala Phe Thr Cys Leu Ser Thr Asp Ile His Ser His Asp Leu Ser Lys
 50 55 60
 Ile Val Ile Glu Tyr Asn Pro Ile Asp Leu Ala Tyr Ala Val Ser Cys
 65 70 75 80
 Leu Pro Ser Glu Ser Arg Ala Ile Leu Tyr Lys Asn Leu Ser Cys Ile
 85 90 95
 Thr Ala Lys Val Ala Phe Ile Ile Asn Thr Asp Ser Ala Ser Arg Trp
 100 105 110
 Ala Ile Phe Arg Arg Leu Ser Asp Ser Glu Val Cys Ala Leu Ile Glu
 115 120 125
 Gln Met Pro Pro Asp Glu Ala Val Trp Val Leu Asp Asp Ile Pro Asp
 130 135 140
 Arg Arg Tyr Arg Arg Ile Leu Glu Leu Ile Asp Ser Lys Lys Ala Leu
 145 150 155 160
 Lys Ile Arg Asp Leu Gln Lys His Gly Arg Asn Thr Ala Gly Arg Leu
 165 170 175
 Met Thr Asn Glu Phe Phe Ala Phe Leu Met Glu Thr Thr Val Lys Asp
 180 185 190
 Val Ser Ala Cys Ile Arg Ser Asn Pro Gly Ile Asp Leu Thr Arg Leu
 195 200 205
 Val Phe Val Leu Asp Phe Lys Gly Glu Leu Gln Gly Val Val Thr Asp
 210 215 220
 Arg Ser Leu Ile Ile Asn Pro Pro Glu Met Ser Leu Lys Gln Ile Met
 225 230 235 240
 Asn Gln Ile Glu His Lys Val Leu Pro Asp Ala Thr Arg Glu Glu Val
 245 250 255
 Val Asp Leu Val Glu Arg Tyr Lys Ile Ala Ala Leu Pro Val Val Asp
 260 265 270
 Glu Glu Asn Phe Leu Ile Gly Ala Ile Thr Tyr Glu Asp Val Val Glu
 275 280 285
 Ala Ile Glu Asp Ile Ala Asp Glu Thr Ile Ala Arg Met Ala Gly Thr
 290 295 300
 Thr Glu Asp Val Gly Tyr Gln Thr Cys His Val Val Gln Arg Phe Leu
 305 310 315 320
 Leu Arg Ala Pro Trp Leu Leu Val Thr Leu Phe Ala Gly Leu Ile Ser
 325 330 335
 Ala Ser Val Met Ala Tyr Phe Gln Lys Ile Ser Pro Ala Leu Leu Ala
 340 345 350
 Leu Ile Ile Phe Phe Ile Pro Leu Ile Asn Gly Met Ser Gly Asn Val
 355 360 365
 Gly Val Gln Cys Ser Thr Ile Leu Val Arg Ser Met Ala Thr Gly Thr
 370 375 380
 Leu Ser Phe Gly Arg Arg Arg Glu Thr Ile Phe Lys Glu Met Ser Ile
 385 390 395 400
 Gly Leu Leu Thr Gly Val Val Leu Gly Ile Leu Cys Gly Leu Val Val
 405 410 415
 Tyr Leu Met Gly Phe Leu Gly Leu Asn Ile Phe Ser Gly Gly Gly Ile

420 425 430
 Gln Leu Gly Val Thr Val Ala Thr Gly Val Leu Gly Ala Ser Leu Thr
 435 440 445
 Ala Thr Thr Leu Gly Val Leu Ser Pro Phe Phe Phe Ala Lys Leu Gly
 450 455 460
 Val Asp Pro Ala Leu Ala Ser Gly Pro Ile Val Thr Ala Leu Asn Asp
 465 470 475 480
 Ile Met Ser Met Ile Ile Phe Phe Leu Ile Ala Gly Gly Ile Asn Phe
 485 490 495
 Leu Phe Phe Asn
 500
 <210>300
 <211>714
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>300
 Arg Arg Cys Met Ile Arg Ser Pro Leu Pro Phe Ile Ser Ser Lys Arg
 1 5 10 15
 Ala Leu Asn Met Leu Gly Leu Gln Asp Glu Phe Ser Cys Pro Glu Asp
 20 25 30
 Val Val Asp Phe Leu Phe Ser Glu Ile Glu Leu Leu Ala Gln Gln Asp
 35 40 45
 Glu Pro Ser Glu Gly Tyr Leu Ala Leu Ser Arg Ser Leu Leu Met Met
 50 55 60
 Thr His Asn His Pro Lys Val Val Lys Arg Val Ile Phe Tyr Gly Val
 65 70 75 80
 Ser Tyr Gly Leu Lys His Lys Ser Met Ser Ile Phe Ile Asp Val Leu
 85 90 95
 Thr Tyr Ile Asp Phe Leu Phe Glu Lys Leu Gly Ile Ser Ala Ser Asp
 100 105 110
 Arg Leu Ser Leu Cys Ser Ala Arg Thr Cys Ile Asn Phe Glu Leu Tyr
 115 120 125
 Ser Gln Thr Gly Glu Met Lys Phe Leu Ser Glu Val Val Asp Asn Phe
 130 135 140
 Arg Leu Ile Glu Gln Leu Leu Lys Met His Pro Gln Leu Lys Asn Arg
 145 150 155 160
 Phe Gly Trp Glu His Phe Arg Ile Gly Ala Lys Gln Glu Glu Val Ser
 165 170 175
 Leu Val Ala Ser Ala Ser Val Tyr Gln Ala Val Gly Arg Ser Phe Ile
 180 185 190
 Glu Leu Tyr His Lys His Leu Glu Leu Ser Asp Leu Ala Cys Gly Met
 195 200 205
 Lys Cys Leu Ala Leu Ala Leu Asp Leu Ser Pro Asn Asn Ala His Ile
 210 215 220
 His Ala Asp Tyr Ala Lys Gly Leu Val Val Leu Gly Thr Arg Gln Gly
 225 230 235 240
 Lys Ser Leu Leu Ile Glu Arg Gly Met Glu His Phe Ser Lys Ala Ile
 245 250 255
 Phe Leu Ser Phe Ser Arg Asp Gly Asp Thr Leu Ala Tyr Gln Asn Tyr
 260 265 270
 Arg Tyr Ser Tyr Ala Leu Ala Ser Val Lys Leu Phe Asp Leu Thr Tyr
 275 280 285
 Lys Lys Glu His Phe Asp Gln Ala Met Asn Ile Leu Tyr Gln Thr Val
 290 295 300
 Gln Ala Phe Pro Asn Leu Ser Gly Leu Trp Met Val Trp Gly Glu Leu
 305 310 315 320
 Leu Ile Arg Ser Gly Trp Leu Asn Ser Asn Met Lys Tyr Ile Glu Val
 325 330 335
 Gly Leu Glu Lys Leu Ala Ser Leu Gln Lys Lys Thr Asn Asp Pro Ile
 340 345 350
 Ala Leu Ser Gly Leu Leu Ala Thr Gly Ile Ala Ile Leu Gly Leu Tyr
 355 360 365
 Leu Glu Glu Pro Asn Leu Phe Lys Asp Ser Arg His Arg Leu Ile Ser
 370 375 380

Ala Met Arg Met Phe Pro Gly Asn Ser Ala Leu Val Phe Ala Leu Gly
385 390 395 400
Val Val Gln Leu Cys Ser Ala Leu Tyr Phe Asn Glu Asp Ser His Phe
405 410 415
Ala Ser Ala Ile Ser Cys Phe Gln Ser Cys Leu Glu Trp Asp Leu Asp
420 425 430
Ala Thr Gly Met Trp Gln Lys Leu Phe Asp Ala Tyr Phe Ser Trp Gly
435 440 445
Ile Lys Lys Lys Ser Ala Arg Leu Leu Arg Lys Ala Val Asp Val Ala
450 455 460
Ser Arg Leu Cys Ser Leu Arg Pro Glu Ala Phe Leu Phe Trp Ser Asp
465 470 475 480
Arg Gly Leu Ala Leu Lys Cys Leu Ala Glu Ala Thr Ile Asp Glu Ala
485 490 495
Tyr Lys Glu Ile Phe Leu Ser Glu Ser Leu Leu His Tyr Gln Arg Ala
500 505 510
Trp Asp Leu Ser Gly Arg Leu Glu Ile Leu Glu Leu Trp Gly Gln Ser
515 520 525
His Tyr Leu Leu Ala Glu Leu Gln Gln Ser Leu Phe His Tyr Asp Glu
530 535 540
Ala Tyr Thr Leu Leu Thr Lys Val Asp Leu Thr Leu Ser Ser Ser Arg
545 550 555 560
Val Lys Leu Ile Leu Ala Ala Val Leu Leu Gly Lys Gly Arg Leu Leu
565 570 575
Gln Asp Thr Asp Pro Ala Glu Glu Ala Arg Glu Ile Leu Glu Pro Leu
580 585 590
Val Glu Val Tyr Leu Glu Asp Glu Asn Phe Leu Leu Leu Leu Gly Lys
595 600 605
Val Tyr Leu Phe Leu Phe Trp Lys Asn Lys Asn Val Cys Leu Gly Lys
610 615 620
Leu Ala Arg Thr Tyr Leu Glu Lys Ala Thr Ser Leu Gly Cys Pro Glu
625 630 635 640
Ala Tyr Tyr Thr Leu Gly Lys Phe Tyr Ala Val Ile Lys Asp Val Asn
645 650 655
Lys Ala Trp Gly Met Val Ile Arg Ser Ala Gln Tyr Gly Val Arg Ile
660 665 670
Thr Glu Ala Lys Trp Leu Asn Asp Pro Tyr Leu Ala Asn Leu Arg Glu
675 680 685
Ile His Ala Phe Arg Glu Val Val Glu Asn Gln Lys Gly Arg Leu Trp
690 695 700
Leu Gly Asn Lys Thr Glu Met Lys Arg Asn
705 710

<210>301

<211>405

<212>PRT

<213>Chlamydia pneumoniae

<400>301

Ile Ser Ile Thr Ile Arg Glu Phe Leu Phe Phe Gly Phe Glu Cys Arg
1 5 10 15
Ala Lys Phe Tyr Asn Val Ile Met Ser Cys Phe Asn Leu Thr Ser Thr
20 25 30
Asn Glu Ser Leu Arg Pro Ile Ser Pro Lys Ala Ser Phe Pro Lys Gln
35 40 45
Gly Trp Gln Ser Tyr Phe Arg Ser Ala Leu Arg Lys His Arg Ser Asp
50 55 60
Thr Leu Ser Val Ser Val Cys Lys Val Asn Lys Tyr Asp Ala Asn Leu
65 70 75 80
Phe Val Arg Leu Thr Val Ile Ala Leu Ala Val Val Gly Val Leu Ile
85 90 95
Leu Phe Ser Ile Met Leu Ala Ser Ile Gln Gly Thr Leu Val Ile Thr
100 105 110
Ser Trp Pro Leu Val Thr Ala Ala Ile Leu Ile Pro Thr Ile Leu Leu
115 120 125
Thr Gly Gly Met Tyr Ile Leu His Arg Leu Gly Lys Lys Val Asp Val

130 135 140
 Ile Ser Gly Val Cys Ile Pro Pro Phe Ser Arg Arg Cys Trp Val Pro
 145 150 155 160
 Ile Ser Ser Ser His Thr Leu Glu Lys Phe Asp Glu Lys His Val Ser
 165 170 175
 Ala Cys Ser Tyr Leu Asp Ile Ser Thr Leu Ser Ala Asp Gly Ser Gly
 180 185 190
 Ile Ala Ala Val Tyr Gln Cys Pro Pro Leu Leu Phe Arg Ala Phe Pro
 195 200 205
 Cys Phe Gly Ile Pro Cys Ala Met Pro Phe Val Ala Leu Leu Arg Met
 210 215 220
 Ile Tyr Asn Leu Ile Arg Phe Leu Val Val Pro Phe Tyr Ile Ile Phe
 225 230 235 240
 Arg Met Ile Tyr Glu His Phe Phe Cys Lys His Leu Pro Glu Asp Asp
 245 250 255
 Arg Phe Ile Tyr Lys Asp Val Ala Arg Glu Met Gly Arg Ser Leu Ala
 260 265 270
 Ala Phe Leu Lys Ala Pro Phe Tyr Ala Ser Ala Cys Met Ile Gly Ala
 275 280 285
 Phe Tyr Ser Leu Leu Asp Pro Leu Ala Gly Arg Val Leu Met Gly Ser
 290 295 300
 Val Glu Arg Asp Trp Asn Asp Asn Val Ile Leu Ala Arg Ser Val Ser
 305 310 315 320
 Leu Ala Asn Glu Ala His Ser Leu Phe Arg Phe Glu Gly Gly Gly Gly
 325 330 335
 Arg Lys Gly Leu Gly Gln His Ala Phe Tyr Leu Met Leu Cys Cys Gln
 340 345 350
 Pro Gln Ser Val Phe Leu Phe Asp Lys Gly Glu Ile Val Ser Gly Ala
 355 360 365
 His Pro Ser Ile Gln Leu Pro Glu Arg Arg Gly Leu Asp Thr Ser Gly
 370 375 380
 Arg Tyr Pro His Ile Ser Val Ile Pro Asp Ser Gly Asn Asp Ser Ala
 385 390 395 400
 Lys Asn Phe Ile Val
 405

<210>302

<211>400

<212>PRT

<213>Chlamydia pneumoniae

<400>302

Asn Phe Asn Arg Leu Met Lys Lys Gln Arg Ser His Tyr Thr Lys Asn
 1 5 10 15
 Asn Leu Leu Leu Leu Leu Ser Ile Leu Val Gly Leu Gly Leu Gly Ser
 20 25 30
 Val Gln Ser Pro Trp Ile Val Tyr Ser Ala Glu Cys Ile Ala Asn Thr
 35 40 45
 Phe Leu Lys Phe Leu Arg Leu Leu Ser Ile Pro Leu Val Phe Cys Ala
 50 55 60
 Leu Gly Ser Thr Ile Thr Ser Ile Gln Asn Phe Asn Thr Met Val Thr
 65 70 75 80
 Leu Gly Lys Arg Ile Leu Tyr Tyr Thr Leu Leu Thr Thr Val Ile Ala
 85 90 95
 Ala Ser Ile Gly Leu Leu Leu Phe Phe Leu Leu Arg Pro Gln Met Ile
 100 105 110
 Thr Gln Asp Ala Leu Ala Thr Thr Thr Lys Cys Asn Pro Leu Gly Tyr
 115 120 125
 Leu Asp Val Leu Ser Asp Thr Leu Pro Glu Asn Ile Phe Lys Pro Phe
 130 135 140
 Leu Gln Gly Asn Val Ile Ser Ala Ala Cys Leu Ala Val Leu Leu Gly
 145 150 155 160
 Thr Ala Ser Leu Phe Leu Gln Glu Lys Glu Lys His Phe Val Asn Gln
 165 170 175
 Phe Phe Asn Ser Phe Phe Ser Ile Phe Leu Asn Leu Ala Arg Gly Gly
 180 185 190

Leu Lys Leu Leu Pro Ile Ala Met Leu Gly Phe Ser Val Ile Leu Phe
 195 200 205
 Lys Glu Leu Lys Asp Gln Ser Asn Leu Thr Met Phe Ala Glu Tyr Leu
 210 215 220
 Leu Cys Val Ile Gly Ala Asn Leu Ala Gln Gly Phe Ile Val Leu Pro
 225 230 235 240
 Ile Leu Leu Lys Ile Asn Lys Val Ser Pro Leu Lys Val Ala Lys Ala
 245 250 255
 Met Ser Pro Ala Leu Val Thr Ala Phe Ser Lys Ser Ser Ala Ala
 260 265 270
 Thr Leu Pro Leu Thr Met Glu Leu Ala Glu Asp Asp Leu Lys Ile Asn
 275 280 285
 Lys Asn Leu Ser Arg Phe Ser Phe Pro Leu Cys Ser Val Ile Asn Met
 290 295 300
 Asn Gly Cys Ala Ala Phe Ile Leu Ile Thr Val Leu Phe Val Ala Thr
 305 310 315 320
 Ser Asn Gly Met Ile Ile Ser Pro Leu Met Ser Leu Gly Trp Ile Phe
 325 330 335
 Ile Ala Thr Leu Ala Ala Ile Gly Asn Ala Gly Val Pro Met Gly Cys
 340 345 350
 Tyr Phe Leu Thr Leu Ser Leu Leu Thr Ser Met Asn Val Pro Leu Ser
 355 360 365
 Ile Leu Gly Leu Ile Leu Pro Phe Tyr Thr Val Ile Asp Met Ile Glu
 370 375 380
 Thr Ser Leu Asn Val Trp Ser Asp Cys Cys Val Val Ser Leu Ala Asn
 385 390 395 400

<210>303

<211>234

<212>PRT

<213>Chlamydia pneumoniae

<400>303

Ser Trp Gly Ile Ile Ile Phe Ser Thr Cys Ala Ser Leu Asp Ile Leu
 1 5 10 15
 Gly Thr Thr Gln Leu Gln Asp Gly Ala Gly Ala Ser Ser Ile Gly Ile
 20 25 30
 Thr Phe Ile Tyr Leu Pro Glu Leu Phe Thr Arg Leu Pro Gly Gly Ile
 35 40 45
 Tyr Leu Thr Thr Leu Phe Ser Ser Ile Phe Phe Leu Ala Phe Ser Met
 50 55 60
 Ala Ala Leu Ser Ser Met Ile Ser Met Leu Phe Leu Leu Ser Gln Thr
 65 70 75 80
 Leu Ala Glu Phe Gly Ile Lys Pro Tyr Ile Ser Glu Thr Leu Ala Thr
 85 90 95
 Ile Ile Ala Phe Val Leu Gly Ile Pro Ser Ala Leu Ser Leu Thr Phe
 100 105 110
 Phe Ser Asn Gln Asp Thr Val Trp Gly Val Ala Leu Ile Val Asn Gly
 115 120 125
 Leu Ile Phe Ile Tyr Ala Ala Leu Val Tyr Gly Phe Pro Lys Leu Lys
 130 135 140
 Lys Glu Val Ile Asn Ala Ala Pro Gly Asp Leu Arg Leu Asn Lys Ala
 145 150 155 160
 Phe Asp Tyr Ile Ile Lys Tyr Leu Leu Leu Ile Glu Gly Ile Leu Leu
 165 170 175
 Leu Gly Trp Tyr Phe Tyr Glu Gly Leu Phe Pro Glu Asn Gly Gln Trp
 180 185 190
 Trp Asn Pro Ile Ser Leu Tyr Ser Leu Gly Ser Leu Val Leu Gln Trp
 195 200 205
 Ser Leu Gly Leu Ile Ile Leu Trp Lys Phe Asn Lys Gln Leu Tyr Leu
 210 215 220
 Arg Phe Ser Arg Tyr Asn His Glu Ile Leu
 225 230

<210>304

<211>179

<212>PRT

<213>Chlamydia pneumoniae

<400>304

Glu Lys His Met Ser Ala Pro Ile Pro Thr Pro Gln Glu Leu Ser Asp
 1 5 10 15
 Gln Ile Thr Cys Leu Asn Val Gln Tyr Gln Gln Val Ser Glu Leu Ala
 20 25 30
 Arg Glu Asn Lys Gly Asp Ile Glu Gly Leu Lys Thr Leu Thr Ala Ala
 35 40 45
 Leu Thr Ala Asp Ala Gly Ile Gln Pro Ser Ala Asp Glu Ile Tyr Ser
 50 55 60
 Leu Gln Thr Ala Ala Ala Leu Ile Leu Ser Ala Ser Glu Lys Pro Gly
 65 70 75 80
 Ser Gly Pro Ser Gly Ser Thr Glu Gly Ser Val Thr Val Gln Ser Pro
 85 90 95
 Cys Lys Phe Lys Lys Val Leu Ala Val Val Leu Thr Ile Ile Ala Leu
 100 105 110
 Ile Ala Ile Ala Val Leu Ile Ala Cys Ile Ile Ala Ala Cys Gly Gly
 115 120 125
 Phe Pro Leu Leu Leu Ser Ala Leu Asn Leu Tyr Thr Ile Gly Ala Cys
 130 135 140
 Val Ser Leu Pro Ile Ile Ala Ser Thr Ser Val Ala Leu Ile Cys Leu
 145 150 155 160
 Cys Thr Phe Val Ala Asn Ser Leu Ile Lys Pro Val Ile Thr Val Arg
 165 170 175
 Thr Thr Arg

<210>305

<211>212

<212>PRT

<213>Chlamydia pneumoniae

<400>305

Val Lys Asn Thr Lys Asn Ser Asp Phe Met Thr Ser Pro Ile Pro Phe
 1 5 10 15
 Gln Ser Ser Gly Asp Ala Ser Phe Leu Ala Glu Gln Pro Gln Gln Leu
 20 25 30
 Pro Ser Thr Ser Glu Ser Gln Leu Val Thr Gln Leu Leu Thr Met Met
 35 40 45
 Lys His Thr Gln Ala Leu Ser Glu Thr Val Leu Gln Gln Gln Arg Asp
 50 55 60
 Arg Leu Xaa Thr Ala Ser Ile Ile Leu Gln Val Gly Gly Ala Pro Thr
 65 70 75 80
 Gly Gly Ala Gly Ala Pro Phe Gln Pro Gly Pro Ala Asp Asp His His
 85 90 95
 His Pro Ile Pro Pro Pro Val Val Pro Ala Gln Ile Glu Thr Glu Ile
 100 105 110
 Thr Thr Ile Arg Ser Glu Leu Gln Leu Met Arg Ser Thr Leu Gln Gln
 115 120 125
 Ser Thr Lys Gly Ala Arg Thr Gly Val Leu Val Val Thr Ala Ile Leu
 130 135 140
 Met Thr Ile Ser Leu Leu Ala Ile Ile Ile Ile Ile Leu Ala Val Leu
 145 150 155 160
 Gly Phe Thr Gly Val Leu Pro Gln Val Ala Leu Leu Met Gln Gly Glu
 165 170 175
 Thr Asn Leu Ile Trp Ala Met Val Ser Gly Ser Ile Ile Cys Phe Ile
 180 185 190
 Ala Leu Ile Gly Thr Leu Gly Leu Ile Leu Thr Asn Lys Asn Thr Pro
 195 200 205
 Leu Pro Ala Ser

210

<210>306

<211>907

<212>PRT

<213>Chlamydia pneumoniae

<400>306

Val	Trp	Ser	Met	Gln	Arg	Val	Leu	Arg	Leu	Leu	Phe	Leu	His	His
1				5					10				15	
Gly	Glu	Glu	Lys	Arg	Ala	Phe	Leu	Phe	Phe	Leu	Leu	Gly	Leu	Val
			20					25					30	Trp
Gly	Ile	Gly	Cys	Tyr	Gly	Thr	Leu	Ser	Leu	Ala	Glu	Gly	Leu	Phe
		35					40					45		Ile
Glu	Lys	Leu	Gly	Ser	Ala	Glu	Leu	Pro	Lys	Ile	Tyr	Leu	Gly	Ser
	50						55				60			Ser
Leu	Ile	Leu	Cys	Val	Leu	Ser	Ser	Leu	Ile	Leu	Tyr	Asn	Leu	Phe
	65				70					75				Lys
Lys	His	Ile	Ser	Ala	Thr	Ala	Leu	Phe	Leu	Ile	Pro	Val	Ser	Leu
				85					90					Ser
Ile	Leu	Cys	Asn	Phe	Tyr	Leu	Ile	Leu	Ser	Ser	Ile	Phe	Ala	Ile
			100					105					110	Asp
Pro	Pro	Arg	Ser	Pro	Leu	Phe	Phe	Tyr	Arg	Ile	Val	Ile	Trp	Ser
		115					120					125		Leu
Thr	Ile	Leu	Ser	Tyr	Thr	Ser	Phe	Trp	Gly	Phe	Val	Asp	Gln	Phe
	130					135					140			Phe
Asn	Leu	Gln	Asp	Gly	Lys	Arg	His	Phe	Cys	Ile	Phe	Asn	Ala	Ile
	145				150					155				Ile
Phe	Leu	Gly	Asp	Ala	Ile	Gly	Ser	Gly	Ile	Ile	Ala	Ser	Leu	Val
			165					170						His
Thr	Ile	Gly	Ile	Gln	Gly	Ile	Leu	Ile	Leu	Phe	Thr	Ala	Ala	Leu
		180						185					190	Val
Leu	Thr	Phe	Pro	Ile	Val	Phe	Tyr	Val	Ser	Lys	Ser	Leu	Lys	Ser
	195						200					205		Leu
Ser	Asp	Asp	His	Asp	Leu	Phe	Ile	Asp	Thr	Gly	His	Pro	Pro	Pro
	210					215					220			Leu
Ser	Lys	Ala	Leu	Lys	Leu	Cys	Phe	Tyr	Asp	Lys	Tyr	Thr	Phe	Tyr
	225				230					235				Leu
Leu	Cys	Phe	Tyr	Phe	Leu	Met	Gln	Leu	Leu	Ala	Ile	Ala	Thr	Glu
			245						250					Phe
Asn	Tyr	Leu	Lys	Ile	Phe	Glu	Ile	Gln	Phe	Ala	Ser	Lys	Glu	Glu
		260						265					270	Phe
Glu	Leu	Val	Ala	His	Ile	Gly	Lys	Cys	Ser	Leu	Trp	Ile	Ser	Leu
		275					280					285		Gly
Asn	Met	Cys	Phe	Ala	Leu	Phe	Ala	Tyr	Ser	Arg	Ile	Val	Lys	Arg
	290					295					300			Leu
Gly	Val	Asn	Asn	Ile	Ile	Leu	Phe	Ala	Pro	Leu	Cys	Phe	Leu	Ser
	305				310					315				Leu
Phe	Leu	Phe	Trp	Thr	Phe	Lys	Thr	Thr	Leu	Ser	Ile	Ala	Val	Leu
				325					330					Ala
Met	Val	Val	Arg	Glu	Gly	Val	Thr	Tyr	Ala	Leu	Asp	Asp	Asn	Asn
			340					345					350	Leu
Gln	Leu	Leu	Ile	Tyr	Gly	Val	Pro	Asn	Lys	Ile	Arg	Asn	Gln	Ile
		355					360					365		Arg
Ile	Val	Val	Glu	Ser	Phe	Ile	Glu	Pro	Ile	Gly	Met	Leu	Val	Trp
	370					375					380			Ser
Leu	Val	Cys	Phe	Leu	Ser	Ser	Gln	Gln	Tyr	Val	Phe	Cys	Leu	Ile
	385				390					395				Ile
Ser	Leu	Ile	Ala	Thr	Ile	Leu	Val	Cys	Leu	Val	Arg	Ser	Tyr	Tyr
			405						410					Ala
Lys	Ala	Ile	Leu	Lys	Asn	Leu	Ser	Ala	Gln	Ala	Leu	Gln	Leu	Thr
			420					425					430	Arg
Ser	Met	Gln	Asp	Trp	Ile	Lys	Ser	Met	Thr	Val	Lys	Gln	Lys	Arg
		435					440					445		Gln
Val	Glu	Leu	Phe	Leu	Leu	Ala	His	Leu	Lys	His	Pro	Ser	Glu	Arg
	450					455					460			His
Gln	Thr	Phe	Ala	Phe	Gln	His	Leu	Leu	Asn	Leu	Ala	Ser	Arg	Ser
	465				470					475				Val
Leu	Pro	Ser	Leu	Leu	Ala	His	Met	Asn	Lys	Leu	Ser	Leu	Pro	Asn
			485						490					Lys
Leu	Lys	Thr	Ile	Glu	Met	Val	Lys	Ser	Ser	Leu	Trp	Ala	Lys	Asp
			500					505					510	Phe

Leu Thr Leu Glu Leu Lys Arg Trp Thr Ser Ile Phe Phe His Pro
 515 520 525
 Ala Ile Ala Ser Ala Ile His Leu Tyr Phe Ala Glu His Asp Leu Leu
 530 535 540
 His Ile Thr His Ile Ala Glu Asp Leu Tyr Asp Thr Val Gly Asp Arg
 545 550 555 560
 Leu Leu Ala Ala Ile Leu Thr Val Arg Arg Gln Glu Ala Tyr Gly Pro
 565 570 575
 Tyr Arg Asp Leu Ala Asp Lys Arg Leu Lys Glu Leu Leu Asn Ser Asp
 580 585 590
 Gln Pro Glu Asp Ile Val Met Gly Leu Thr Ile Leu Lys Leu Glu Lys
 595 600 605
 Asn Pro Gln Asn Phe Pro Ile Leu Leu Asp Phe Leu Asn Thr Lys Asn
 610 615 620
 Glu Asp Ile Leu Ile Val Thr Cys Lys Ala Leu His Thr Ser Val Arg
 625 630 635 640
 Ala Asn His Lys Pro Tyr Cys Pro Glu Leu Leu Lys Arg Leu Arg Gln
 645 650 655
 Cys Ser His Asn Asp Glu Ala Ser Gln Tyr Leu Leu Lys Thr Ile Ser
 660 665 670
 Ile Ala Leu Asp Ile Ser Phe Val Lys Asp Leu Leu Met Thr Thr Ser
 675 680 685
 Gln Leu Lys Asn Thr Ser Arg Lys Tyr Ala Glu Ala Met Ile Gly Glu
 690 695 700
 Leu Asp Lys Glu Val Ala Pro Ala Phe Leu Gln Val Leu Thr Asp Glu
 705 710 715 720
 Gly Thr His Asn Arg Cys Arg Ile Leu Ala Ala Lys Ala Leu Cys Lys
 725 730 735
 Ile Asp Asn Trp Leu Leu Lys Lys His Ala Tyr Lys Ile Val Lys Ser
 740 745 750
 Lys Ala Ser Lys Ala Leu Phe Tyr Ser Tyr His Gly His Tyr Ile Gln
 755 760 765
 Lys Lys Tyr Pro Thr Tyr Asn Leu Ser Leu Leu Ala Asn Thr Leu Asn
 770 775 780
 Ser Asn Tyr Tyr Ala Glu Val Asn Phe Met Leu Ser Leu Leu Gly Ile
 785 790 795 800
 Leu Gly Ser Met Glu His Ser Gly Val Leu Ile Arg Ala Leu Thr Ser
 805 810 815
 Lys Asn Gln Lys Ile Lys Ala Gln Ala Leu Glu Ser Leu Glu Lys Asn
 820 825 830
 Cys Asp Ser His Leu Phe Ser Leu Leu Glu Pro Phe Val Asn Gln Pro
 835 840 845
 Gly Met Cys Tyr Ser Glu Lys Tyr Tyr Phe Lys Cys Gly Val Ile Pro
 850 855 860
 Leu Thr Leu Lys Glu Leu Leu Asn Met Met Glu Asn Ser Pro Ser Ser
 865 870 875 880
 Leu Asn Lys Leu Thr Ala Gln Gln Leu Lys Glu Glu Leu Ser Tyr Cys
 885 890 895
 Asp Pro Asp Phe Pro Ile Cys Lys Tyr Asn Leu
 900 905

<210>307

<211>142

<212>PRT

<213>Chlamydia pneumoniae

<400>307

Ile Arg Asn Phe Phe Met Asn Leu Ile Asp Arg Ala Phe Leu Leu Lys
 1 5 10 15
 Lys Thr Ile Ile Phe Gln Ser Leu Asp Met Asp Leu Leu Leu Thr Ile
 20 25 30
 Ala Asp Lys Thr Glu Thr Ile Ile Phe Lys Pro Gly Ser Asn Val Phe
 35 40 45
 Ser Ile Gly Gln Pro Gly Phe Ser Phe Tyr Ile Ile Val Glu Gly Tyr
 50 55 60
 Ile Thr Ile Ser Lys Glu Lys Leu Glu Ser Pro Leu Asn Leu Lys Pro

65 70 75 80
 Leu Asp Cys Phe Gly Glu Glu Ser Leu Phe Asn Asn Lys Pro Arg Glu
 85 90 95
 Tyr Asn Ala Ser Ala Asn Thr Gln Val Arg Met Leu Val Leu Ser Lys
 100 105 110
 Gly Gln Ile Leu Asn Ile Val Glu Cys Pro Ser Val Ala Leu Ser
 115 120 125
 Phe Leu Glu Leu Tyr Ala Lys Gln Ile Lys Phe Arg Glu Pro
 130 135 140

<210>308

<211>79

<212>PRT

<213>Chlamydia pneumoniae

<400>308

Met Ser Leu Glu Asp Asp Val Ile Ala Ile Ile Val Glu Gln Leu Gly
 1 5 10 15
 Val Asp Pro Lys Glu Val Asn Glu Asn Ser Ser Phe Ile Glu Asp Leu
 20 25 30
 Asn Ala Asp Ser Leu Asp Leu Thr Glu Leu Ile Met Thr Leu Glu Glu
 35 40 45
 Lys Phe Ala Phe Glu Ile Ser Glu Glu Asp Ala Glu Lys Leu Arg Thr
 50 55 60
 Val Gly Asp Val Phe Thr Tyr Ile Lys Lys Arg Gln Ala Glu Gln
 65 70 75

<210>309

<211>251

<212>PRT

<213>Chlamydia pneumoniae

<400>309

Met Ile Cys Met Asp Ile Thr Leu Val Gly Lys Lys Val Ile Val Thr
 1 5 10 15
 Gly Gly Ser Arg Gly Ile Gly Leu Gly Ile Val Lys Leu Phe Leu Glu
 20 25 30
 Asn Gly Ala Asp Val Glu Ile Trp Gly Leu Asn Glu Glu Arg Gly Gln
 35 40 45
 Ala Val Ile Glu Ser Leu Thr Gly Leu Gly Gly Glu Val Ser Phe Ala
 50 55 60
 Arg Val Asp Val Ser His Asn Gly Gly Val Lys Asp Cys Val Gln Lys
 65 70 75 80
 Phe Leu Asp Lys His Asn Lys Ile Asp Ile Leu Val Asn Asn Ala Gly
 85 90 95
 Ile Thr Arg Asp Asn Leu Leu Met Arg Met Ser Glu Asp Asp Trp Gln
 100 105 110
 Ser Val Ile Ser Thr Asn Leu Thr Ser Leu Tyr Tyr Thr Cys Ser Ser
 115 120 125
 Val Ile Arg His Met Ile Lys Ala Arg Ser Gly Ser Ile Ile Asn Val
 130 135 140
 Ala Ser Ile Val Ala Lys Ile Gly Ser Ala Gly Gln Thr Asn Tyr Ala
 145 150 155 160
 Ala Ala Lys Ala Gly Ile Ile Ala Phe Thr Lys Ser Leu Ala Lys Glu
 165 170 175
 Val Ala Ala Arg Asn Ile Arg Val Asn Cys Leu Ala Pro Gly Phe Ile
 180 185 190
 Glu Thr Asp Met Thr Ser Val Leu Asn Asp Asn Leu Lys Ala Glu Trp
 195 200 205
 Leu Lys Ser Ile Pro Leu Gly Arg Ala Gly Thr Pro Glu Asp Val Ala
 210 215 220
 Arg Val Ala Leu Phe Leu Ala Ser Gln Leu Ser Ser Tyr Met Thr Ala
 225 230 235 240
 Gln Thr Leu Val Val Asp Gly Gly Leu Thr Tyr
 245 250

<210>310

<211>308

<212>PRT

<213>Chlamydia pneumoniae

<400>310

Met Lys Lys Arg Tyr Ala Phe Leu Phe Pro Gly Gln Gly Ser Gln Tyr
 1 5 10 15
 Val Gly Met Gly Gln Asp Leu Tyr Met Glu Tyr Pro Glu Val Arg Glu
 20 25 30
 Leu Phe Asp Phe Ala Asn Glu Arg Leu Gly Phe Ser Leu Thr Ser Ile
 35 40 45
 Met Phe Glu Gly Pro Glu Asp Leu Leu Met Glu Thr Val His Ser Gln
 50 55 60
 Leu Ala Ile Tyr Leu His Ser Met Ala Val Val Lys Val Leu Ser Gln
 65 70 75 80
 Arg Ser Ser Ile Gln Pro Ser Leu Val Ser Gly Leu Ser Leu Gly Glu
 85 90 95
 Tyr Thr Ala Leu Val Ala Ser Asp Arg Ile Ser Val Leu Asp Gly Leu
 100 105 110
 Glu Leu Val Arg Lys Arg Gly Gln Leu Met Asn Glu Ala Cys Asn Gln
 115 120 125
 Ser Pro Gly Ala Met Ala Ala Leu Leu Gly Leu Pro Ser Glu Val Ile
 130 135 140
 Glu Glu Asn Ile Thr Ser Leu Gly Gln Gly Ile Trp Ile Ala Asn Tyr
 145 150 155 160
 Asn Ala Pro Lys Gln Leu Val Val Ala Gly Ile Ala Glu Lys Val Asp
 165 170 175
 Gln Ala Ile Glu Leu Phe Arg Asp Leu Gly Cys Lys Lys Ala Val Arg
 180 185 190
 Leu Lys Val Ser Gly Ala Phe His Thr Pro Leu Met Gln Val Ala Gln
 195 200 205
 Asp Gly Leu Ala Pro Asp Ile Tyr Ala Leu Cys Met Lys Asp Ser Ser
 210 215 220
 Leu Pro Leu Val Ser His Val Val Gly Lys Ser Leu Val Asn Thr Glu
 225 230 235 240
 Glu Met Arg Glu Cys Leu Ala Arg Gln Met Thr Ser Pro Thr Leu Trp
 245 250 255
 Tyr Gln Ser Cys Tyr His Ile Glu Ser Glu Val Asp Glu Phe Leu Glu
 260 265 270
 Leu Gly Pro Gly Lys Val Leu Ala Gly Leu Asn Arg Ser Ile Gly Ile
 275 280 285
 Ser Lys Pro Ile Thr Ser Leu Gly Thr Phe Ala Gln Ile Glu Lys Phe
 290 295 300
 Leu Ser Glu Val
 305

<210>311

<211>116

<212>PRT

<213>Chlamydia pneumoniae

<400>311

Leu Tyr His Phe Leu Asp Ser Ser Thr Arg Leu Tyr Phe Pro Ile Lys
 1 5 10 15
 Arg Ser Leu Ala Gln Ala His Leu Gly Ile Glu Asp Val Pro Thr Phe
 20 25 30
 Asp Cys Gln Ala Ala Cys Thr Gly Tyr Leu Tyr Gly Leu Ser Val Ala
 35 40 45
 Lys Ala Tyr Val Glu Ser Gly Thr Tyr Asn His Val Leu Leu Ile Ala
 50 55 60
 Ala Asp Lys Leu Ser Ser Phe Val Asp Tyr Thr Asp Arg Asn Thr Cys
 65 70 75 80
 Val Leu Phe Gly Asp Gly Gly Ala Ala Cys Val Ile Gly Glu Ser Arg
 85 90 95
 Pro Gly Ser Leu Glu Ile Asn Arg Leu Ser Leu Gly Ala Asp Gly Lys
 100 105 110
 Leu Gly Glu Tyr
 115

<210>312

<211>105
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>312
 Met Trp Phe Ser Val Asn Lys Asn Lys Lys Ala Ala Ile Trp Ala Thr
 1 5 10 15
 Gly Ser Tyr Leu Pro Glu Lys Val Leu Ser Asn Ala Asp Leu Glu Lys
 20 25 30
 Met Val Asp Thr Ser Asp Glu Trp Ile Val Thr Arg Thr Gly Ile Lys
 35 40 45
 Glu Arg Arg Ile Ala Gly Pro Gln Glu Tyr Thr Ser Leu Met Gly Ala
 50 55 60
 Ile Ala Ala Glu Lys Ala Ile Ala Asn Ala Gly Leu Ser Lys Asp Gln
 65 70 75 80
 Ile Asp Cys Ile Ile Phe Ser Thr Ala Ala Pro Asp Tyr Ile Phe Pro
 85 90 95
 Ser Ser Gly Val Leu Leu Lys His Ile
 100 105

<210>313
 <211>230
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>313
 Arg Lys Lys Leu Val Tyr Tyr Ser Glu Ser Leu Tyr Ser Asn Leu Asn
 1 5 10 15
 Leu Gly Pro Arg Pro Glu Cys Lys Asn Lys Ile His Ile Thr Met Thr
 20 25 30
 Arg Tyr Pro Asp Tyr Leu Ser Lys Leu Ile Phe Phe Leu Arg Lys Leu
 35 40 45
 Pro Gly Ile Gly Phe Lys Thr Ala Glu Lys Leu Ala Phe Glu Leu Ile
 50 55 60
 Ser Trp Asp Ser Glu Gln Leu Lys Ile Leu Gly Asn Ala Phe His Asn
 65 70 75 80
 Val Ala Ser Glu Arg Ser His Cys Pro Leu Cys Phe Thr Leu Lys Glu
 85 90 95
 Ser Lys Glu Ala Asp Cys His Phe Cys Arg Glu Glu Arg Asp Asn Gln
 100 105 110
 Ser Leu Cys Ile Val Ala Ser Pro Lys Asp Val Phe Phe Leu Glu Arg
 115 120 125
 Ser Lys Val Phe Lys Gly Arg Tyr His Val Leu Gly Ser Leu Leu Ser
 130 135 140
 Pro Ile Thr Gly Lys His Ile Glu Asn Glu Arg Leu Ser Ile Leu Lys
 145 150 155 160
 Ser Arg Ile Glu Thr Leu Cys Pro Lys Glu Ile Ile Leu Ala Ile Asp
 165 170 175
 Ala Thr Leu Glu Gly Asp Ala Thr Ala Leu Phe Leu Lys Gln Glu Leu
 180 185 190
 Gln His Phe Ser Val Asn Ile Ser Arg Leu Ala Leu Gly Leu Pro Ile
 195 200 205
 Gly Leu Ser Phe Asp Tyr Val Asp Ser Gly Thr Leu Ala Arg Ala Phe
 210 215 220
 Ser Gly Arg His Ser Tyr
 225 230

<210>314
 <211>795
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>314
 Gly Arg Leu Leu Gly Met Leu Ile Met Arg Asn Lys Val Ile Leu Gln
 1 5 10 15
 Ile Ser Ile Leu Ala Leu Ile Gln Thr Pro Leu Thr Leu Phe Ser Thr
 20 25 30
 Glu Lys Val Lys Glu Gly His Val Val Val Asp Ser Ile Thr Ile Ile
 35 40 45

Thr Glu Gly Glu Asn Ser Asn Lys His Pro Leu Pro Lys Leu Lys
 50 55 60
 Thr Arg Ser Gly Ala Leu Phe Ser Gln Leu Asp Phe Asp Glu Asp Leu
 65 70 75 80
 Arg Ile Leu Ala Lys Glu Tyr Asp Ser Val Glu Pro Lys Val Glu Phe
 85 90 95
 Ser Glu Gly Lys Thr Asn Ile Ala Leu His Leu Ile Ala Lys Pro Ser
 100 105 110
 Ile Arg Asn Ile His Ile Ser Gly Asn Gln Val Val Pro Glu His Lys
 115 120 125
 Ile Leu Lys Thr Leu Gln Ile Tyr Arg Asn Asp Leu Phe Glu Arg Glu
 130 135 140
 Lys Phe Leu Lys Gly Leu Asp Asp Leu Arg Thr Tyr Tyr Leu Lys Arg
 145 150 155 160
 Gly Tyr Phe Ala Ser Ser Val Asp Tyr Ser Leu Glu His Asn Gln Glu
 165 170 175
 Lys Gly His Ile Asp Val Leu Ile Lys Ile Asn Glu Gly Pro Cys Gly
 180 185 190
 Lys Ile Lys Gln Leu Thr Phe Ser Gly Ile Ser Arg Ser Glu Lys Ser
 195 200 205
 Asp Ile Gln Glu Phe Ile Gln Thr Lys Gln His Ser Thr Thr Thr Ser
 210 215 220
 Trp Phe Thr Gly Ala Gly Leu Tyr His Pro Asp Ile Val Glu Gln Asp
 225 230 235 240
 Ser Leu Ala Ile Thr Asn Tyr Leu His Asn Asn Gly Tyr Ala Asp Ala
 245 250 255
 Ile Val Asn Ser His Tyr Asp Leu Asp Asp Lys Gly Asn Ile Leu Leu
 260 265 270
 Tyr Met Asp Ile Asp Arg Gly Ser Arg Tyr Thr Leu Gly His Val His
 275 280 285
 Ile Gln Gly Phe Glu Val Leu Pro Lys Arg Leu Ile Glu Lys Gln Ser
 290 295 300
 Gln Val Gly Pro Asn Asp Leu Tyr Cys Pro Asp Lys Ile Trp Asp Gly
 305 310 315 320
 Ala His Lys Ile Lys Gln Thr Tyr Ala Lys Tyr Gly Tyr Ile Asn Thr
 325 330 335
 Asn Val Asp Val Leu Phe Ile Pro His Ala Thr Arg Pro Ile Tyr Asp
 340 345 350
 Val Thr Tyr Glu Val Ser Glu Gly Ser Pro Tyr Lys Val Gly Leu Ile
 355 360 365
 Lys Ile Thr Gly Asn Thr His Thr Lys Ser Asp Val Ile Leu His Glu
 370 375 380
 Thr Ser Leu Phe Pro Gly Asp Thr Phe Asn Arg Leu Lys Leu Glu Asp
 385 390 395 400
 Thr Glu Gln Arg Leu Arg Asn Thr Gly Tyr Phe Gln Ser Val Ser Val
 405 410 415
 Tyr Thr Val Arg Ser Gln Leu Asp Pro Met Gly Asn Ala Asp Gln Tyr
 420 425 430
 Arg Asp Ile Phe Val Glu Val Lys Glu Thr Thr Thr Gly Asn Leu Gly
 435 440 445
 Leu Phe Leu Gly Phe Ser Ser Leu Asp Asn Leu Phe Gly Gly Ile Glu
 450 455 460
 Leu Ser Glu Ser Asn Phe Asp Leu Phe Gly Ala Arg Asn Ile Phe Ser
 465 470 475 480
 Lys Gly Phe Arg Cys Leu Arg Gly Gly Gly Glu His Leu Phe Leu Lys
 485 490 495
 Ala Asn Phe Gly Asp Lys Val Thr Asp Tyr Thr Leu Lys Trp Thr Lys
 500 505 510
 Pro His Phe Leu Asn Thr Pro Trp Ile Leu Gly Ile Glu Leu Asp Lys
 515 520 525
 Ser Ile Asn Arg Ala Leu Ser Lys Asp Tyr Ala Val Gln Thr Tyr Gly
 530 535 540
 Gly Asn Val Ser Thr Thr Tyr Ile Leu Asn Glu His Leu Lys Tyr Gly
 545 550 555 560

Leu Phe Tyr Arg Gly Ser Gln Thr Ser Leu His Glu Arg Lys Phe
 565 570 575
 Leu Leu Gly Pro Asn Ile Asp Ser Asn Lys Gly Phe Val Ser Ala Ala
 580 585 590
 Gly Val Asn Leu Asn Tyr Asp Ser Val Asp Ser Pro Arg Thr Pro Thr
 595 600 605
 Thr Gly Ile Arg Gly Gly Val Thr Phe Glu Val Ser Gly Leu Gly Gly
 610 615 620
 Thr Tyr His Phe Thr Lys Leu Ser Leu Asn Ser Ser Ile Tyr Arg Lys
 625 630 635 640
 Leu Thr Arg Lys Gly Ile Leu Lys Ile Lys Gly Glu Ala Gln Phe Ile
 645 650 655
 Lys Pro Tyr Ser Asn Thr Thr Ala Glu Gly Val Pro Val Ser Glu Arg
 660 665 670
 Phe Phe Leu Gly Gly Glu Thr Thr Val Arg Gly Tyr Lys Ser Phe Ile
 675 680 685
 Ile Gly Pro Lys Tyr Ser Ala Thr Glu Pro Gln Gly Gly Leu Ser Ser
 690 695 700
 Leu Leu Ile Ser Glu Glu Phe Gln Tyr Pro Leu Ile Arg Gln Pro Asn
 705 710 715 720
 Ile Ser Ala Phe Val Phe Leu Asp Ser Gly Phe Val Gly Leu Gln Glu
 725 730 735
 Tyr Lys Ile Ser Leu Lys Asp Leu Arg Ser Ser Ala Gly Phe Gly Leu
 740 745 750
 Arg Phe Asp Val Met Asn Asn Val Pro Val Met Leu Gly Phe Gly Trp
 755 760 765
 Pro Phe Arg Pro Thr Glu Thr Leu Asn Gly Glu Lys Ile Asp Val Ser
 770 775 780
 Gln Arg Phe Phe Phe Ala Leu Gly Gly Met Phe
 785 790 795

<210>315

<211>158

<212>PRT

<213>Chlamydia pneumoniae

<400>315

Asp Gln Gln Ala Gln Leu Asn Ala Asn Leu Gly Tyr Val Asn Leu Lys
 1 5 10 15
 Arg Cys Leu Glu Glu Ser Asp Leu Gly Lys Lys Glu Thr Glu Glu Leu
 20 25 30
 Glu Ala Xaa Lys Gln Gln Phe Val Lys Asn Ala Glu Lys Ile Glu Glu
 35 40 45
 Glu Leu Thr Ser Ile Tyr Asn Lys Leu Gln Asp Glu Asp Tyr Met Glu
 50 55 60
 Ser Leu Ser Asp Ser Ala Ser Glu Glu Leu Arg Lys Lys Phe Glu Asp
 65 70 75 80
 Leu Ser Gly Glu Tyr Asn Ala Tyr Gln Ser Gln Tyr Tyr Gln Ser Ile
 85 90 95
 Asn Gln Ser Asn Val Lys Arg Ile Gln Lys Leu Ile Gln Glu Val Lys
 100 105 110
 Ile Ala Ala Glu Ser Val Arg Ser Lys Glu Lys Leu Glu Ala Ile Leu
 115 120 125
 Asn Glu Glu Ala Val Leu Ala Ile Ala Pro Gly Thr Asp Lys Thr Thr
 130 135 140
 Glu Ile Ile Ala Ile Leu Asn Glu Ser Phe Lys Lys Gln Asn
 145 150 155

<210>316

<211>367

<212>PRT

<213>Chlamydia pneumoniae

<400>316

Ser Lys Phe Lys Glu Phe Ser Met Ser Glu Ala Pro Val Tyr Thr Leu
 1 5 10 15
 Lys Gln Leu Ala Glu Leu Leu Gln Val Glu Val Gln Gly Asn Ile Glu
 20 25 30

Thr Pro Ile Ser Gly Val Glu Asp Ile Ser Gln Ala Gln Phe His His
 35 40 45
 Ile Ala Phe Leu Asp Asn Glu Lys Tyr Ser Ser Phe Leu Lys Asn Thr
 50 55 60
 Lys Ala Gly Ala Ile Ile Leu Ser Arg Ser Gln Ala Met Gln His Ala
 65 70 75 80
 His Leu Lys Lys Asn Phe Leu Ile Thr Asn Glu Ser Pro Ser Leu Thr
 85 90 95
 Phe Gln Lys Cys Ile Glu Leu Phe Ile Glu Pro Val Thr Ser Gly Phe
 100 105 110
 Pro Gly Ile His Pro Thr Ala Val Ile His Pro Thr Ala Arg Ile Glu
 115 120 125
 Lys Asn Val Thr Ile Glu Pro Tyr Val Val Ile Ser Gln His Ala His
 130 135 140
 Ile Gly Ser Asp Thr Tyr Ile Gly Ala Gly Ser Val Ile Gly Ala His
 145 150 155 160
 Ser Val Leu Gly Ala Asn Cys Leu Ile His Pro Lys Val Val Ile Arg
 165 170 175
 Glu Arg Val Leu Met Gly Asn Arg Val Val Val Gln Pro Gly Ala Val
 180 185 190
 Leu Gly Ser Cys Gly Phe Gly Tyr Ile Thr Asn Ala Phe Gly His His
 195 200 205
 Lys Pro Leu Lys His Leu Gly Tyr Val Ile Val Gly Asp Asp Val Glu
 210 215 220
 Ile Gly Ala Asn Thr Thr Ile Asp Arg Gly Arg Phe Lys Asn Thr Val
 225 230 235 240
 Ile His Glu Gly Thr Lys Ile Asp Asn Gln Val Gln Val Ala His His
 245 250 255
 Val Glu Ile Gly Lys His Ser Ile Ile Val Ala Gln Ala Gly Ile Ala
 260 265 270
 Gly Ser Thr Lys Ile Gly Glu His Val Ile Ile Gly Gly Gln Thr Gly
 275 280 285
 Ile Thr Gly His Ile Ser Ile Ala Asp His Val Ile Met Ile Ala Gln
 290 295 300
 Thr Gly Val Thr Lys Ser Ile Thr Ser Pro Gly Ile Tyr Gly Gly Ala
 305 310 315 320
 Pro Ala Arg Pro Tyr Gln Glu Thr His Arg Leu Ile Ala Lys Ile Arg
 325 330 335
 Asn Leu Pro Lys Thr Glu Glu Arg Leu Ser Lys Leu Glu Lys Gln Val
 340 345 350
 Arg Asp Leu Ser Thr Pro Ser Leu Ala Glu Ile Pro Ser Glu Ile
 355 360 365

<210>317

<211>354

<212>PRT

<213>Chlamydia pneumoniae

<400>317

Arg Glu Gln Lys Gly Leu His His Met Asp Val Ser Arg Lys Ile Asn
 1 5 10 15
 Arg His Thr Gln Phe Tyr Val Asp Ser Ile Asp Gly Val Ile Lys Asn
 20 25 30
 Phe Asp His Lys Pro Ser Glu Asp Lys Ser Arg Asp His Glu Glu Leu
 35 40 45
 Glu Glu Lys Leu Leu Thr Ile Thr Lys Arg Ile Val Ala Ser Ala Gln
 50 55 60
 Glu Phe Gln Asn Arg Lys Thr Asp Ser Lys Asn Tyr Tyr Leu Lys Lys
 65 70 75 80
 Thr Gln Trp Leu Pro Phe Lys Asn Glu Glu Leu Glu Gln Thr Lys Glu
 85 90 95
 Leu Phe Ala Met Leu Thr Ser Met Asp Lys Lys Ile Ala Gln Leu Phe
 100 105 110
 Phe Tyr Ser Pro Gly Cys Ser Ser Asp Trp Val Glu Phe Thr Glu Val
 115 120 125
 Ile Cys His Leu Asn Asp Ser Ile Gly Leu Gly Gly Val Leu Leu Cys

130 135 140
 Cys Gly Leu Phe Glu Gln Gln Cys Glu His Val Val Thr Val Asn Lys
 145 150 155 160
 Lys Leu Asp Leu Pro Leu Leu Leu Gly Thr Thr Val Val Asn Ser Leu
 165 170 175
 Arg Tyr Tyr Leu Thr Tyr Arg Asn Ile Ser Leu Leu Asn Cys Gln Ser
 180 185 190
 Met Ser Glu Leu Gly Lys Glu Leu Gly Asp Val Leu Lys Gln His Gly
 195 200 205
 Val Ala Phe Thr Leu Ile Phe Lys Glu Ile Val Asp Ile Asp Leu Leu
 210 215 220
 Asn Tyr Val Lys Leu Ile Gln Gly Leu Lys Arg Ser Gly Asn Ile Gln
 225 230 235 240
 Ala Arg Ile Tyr Asp Asn Asp Val Pro Thr Leu Pro Ser Val Ser Ser
 245 250 255
 Ser Pro Ile Ala Leu Arg Tyr Ser Leu Ala Asn Thr Ile Arg Gly Leu
 260 265 270
 Ala Leu His Val Asp Phe Ser Ser Leu Lys Phe Ile Ser Pro Ser Ile
 275 280 285
 Leu Ser Asn Thr Glu His Thr Ala Lys Ala Leu Asn Ser Gly Gly Glu
 290 295 300
 Cys Phe Ile Phe Ser Asn Leu Asp Glu Phe Asn Leu Gly Met Lys Ile
 305 310 315 320
 Val Met Gln Leu Leu Arg Thr Gly Lys Ile Ser Pro Glu Ile Leu Asn
 325 330 335
 Lys Asn Ile Met Lys Ile Leu Met Ile Lys Arg Arg Val Arg Ser Leu
 340 345 350
 Tyr Ile

<210>318

<211>342

<212>PRT

<213>Chlamydia pneumoniae

<400>318

Met Asp Ser Ser Ala Pro Tyr Asn Ile Ala Ser Gln Gly Thr Glu Lys
 1 5 10 15
 Ser Thr Val Glu Arg Ile Leu Asp Leu Tyr Gly Pro Ala Ser Cys Ile
 20 25 30
 Lys Phe Leu Lys Gln Met Val Leu Ile Arg Glu Phe Glu Ala Arg Gly
 35 40 45
 Glu Glu Ala Tyr Leu Glu Gly Leu Val Gly Gly Phe Tyr His Ser Tyr
 50 55 60
 Ala Gly Gln Glu Ala Val Ala Thr Ala Ala Ile Ala Asn Thr Gly Leu
 65 70 75 80
 Asp Pro Trp Val Phe Ser Ser Tyr Arg Cys His Ala Leu Ala Ile Leu
 85 90 95
 Leu Asn Ile Pro Leu Gln Glu Ile Ala Ala Glu Leu Leu Gly Lys Glu
 100 105 110
 Thr Gly Cys Ala Leu Gly Arg Gly Gly Ser Met His Met Cys Gly Pro
 115 120 125
 Asn Phe Pro Gly Gly Phe Gly Ile Val Gly Gly Gln Ile Pro Leu Ala
 130 135 140
 Ala Gly Ala Ala Phe Thr Ile Lys Tyr Gln Glu Gln Lys Asn Arg Val
 145 150 155 160
 Ser Leu Cys Phe Ile Gly Asp Gly Ala Val Ala Gln Gly Val Phe His
 165 170 175
 Glu Thr Leu Asn Phe Val Ser Leu His Gln Leu Pro Leu Met Leu Ile
 180 185 190
 Ile Glu Asn Asn Gly Trp Ser Met Gly Thr Ser Leu Asn Arg Ala Val
 195 200 205
 Ala Lys Gln Pro Ile Ala Glu Ser Gln Gly Ser Ser Tyr Asp Ile Arg
 210 215 220
 Ala Val Thr Val Asn Gly Phe Asp Leu Phe Asn Ser Leu Leu Gly Phe
 225 230 235 240

Arg Glu Ala Tyr Arg Met Val Asp Thr Glu Ser Pro Val Leu Val
 245 250 255
 Glu Cys Leu Cys Ser Arg Phe Arg Gly His Ser Ile Ser Asp Pro Asn
 260 265 270
 Leu Tyr Arg Ser Lys Glu Glu Met Gln Cys Leu Phe Lys Lys Asp Pro
 275 280 285
 Ile Val Leu Ala Lys Asp Trp Leu Ile Arg Leu Glu Val Leu Thr Glu
 290 295 300
 Glu Glu Phe Gln Asn Ile Arg Gln Glu Cys Lys Thr Ala Val Leu Glu
 305 310 315 320
 Ala Phe Ser Asn Ala Lys Leu Ser Ser Asp Pro Ser Val Thr Thr Leu
 325 330 335
 Glu Glu Gly Val Tyr Ala
 340

<210>319

<211>161

<212>PRT

<213>Chlamydia pneumoniae

<400>319

Arg Lys Glu Ser Met Pro Lys His Lys Thr Leu Glu Ile Arg Glu Ala
 1 5 10 15
 Leu Arg Glu Ala Ile Asp Glu Glu Met Ser Arg Asp Pro Asn Val Cys
 20 25 30
 Ile Leu Gly Glu Glu Val Gly Asp Tyr Asn Gly Ala Tyr Lys Val Thr
 35 40 45
 Lys Gly Leu Leu Asp Lys Trp Gly Pro Lys Arg Val Ile Asp Ala Pro
 50 55 60
 Ile Ser Glu Ala Ala Phe Ser Gly Ile Gly Ile Gly Ala Ala Leu Ser
 65 70 75 80
 Gly Leu Arg Pro Ile Ile Glu Phe Met Ser Trp Asn Phe Ser Phe Val
 85 90 95
 Ala Leu Asp Gln Ile Ile Ser His Ala Ala Lys Met His Phe Met Thr
 100 105 110
 Gly Gly Lys Phe Ser Val Pro Ile Val Phe Arg Gly Pro Asn Gly Ala
 115 120 125
 Ala Ala Gln Val Ser Cys Gln His Ser His Cys Val Glu Ser Leu Tyr
 130 135 140
 Ala Asn Ile Pro Gly Leu Asn Tyr Tyr Ser Pro Phe Glu Pro Leu Arg
 145 150 155 160
 Arg

<210>320

<211>150

<212>PRT

<213>Chlamydia pneumoniae

<400>320

Asn Ile Thr Leu Lys Gly Glu Val Pro Thr Glu Glu Tyr Leu Val Pro
 1 5 10 15
 Ile Gly Lys Ala His Arg Val Gln Glu Gly Asn Asp Leu Thr Ile Ile
 20 25 30
 Thr Tyr Ser Arg Met Val Ser Ile Thr Lys Glu Ala Cys Ser Leu Ala
 35 40 45
 Lys Lys Arg Trp Gly Leu Ser Ile Glu Ile Ile Asp Leu Arg Thr Ile
 50 55 60
 Lys Pro Leu Asp Ile Ser Thr Ile Leu Ser Ser Val Arg Lys Thr Ser
 65 70 75 80
 Arg Cys Ile Val Ile Glu Glu Gly His Tyr Phe Ala Gly Ile Ser Ser
 85 90 95
 Glu Ile Ile Ala Leu Ile Thr Glu His Val Phe Asp Ser Leu Asp Ala
 100 105 110
 Pro Pro Leu Arg Val Cys Gln Lys Glu Thr Pro Met Pro Tyr Ser Lys
 115 120 125
 Ile Leu Glu Gln Ala Thr Leu Pro Asn Val Asn Arg Ile Leu Asp Thr
 130 135 140

Ile Glu Lys Val Met Arg

145 150

<210>321

<211>432

<212>PRT

<213>Chlamydia pneumoniae

<400>321

Gly Lys Phe Val Ile Ser Leu Leu Lys Met Pro Lys Leu Ser Pro Thr

1 5 10 15

Met Glu Val Gly Thr Ile Val Lys Trp His Lys Lys Ser Asn Asp Gln

20 25 30

Val Ser Phe Gly Asp Val Ile Val Glu Ile Ser Thr Asp Lys Ala Ile

35 40 45

Leu Glu His Thr Ala Asn Glu Asp Gly Trp Ile Arg Glu Ile Leu Arg

50 55 60

His Glu Gly Glu Lys Ile Val Ile Gly Thr Pro Ile Ala Val Leu Ser

65 70 75 80

Thr Glu Ala Asn Glu Pro Phe Asn Leu Glu Glu Leu Leu Pro Lys Thr

85 90 95

Glu Pro Ser Asn Leu Glu Ala Ser Pro Lys Gly Ser Ser Glu Glu Val

100 105 110

Ser Pro Ala Thr Thr Pro Gln Ala Ala Ser Ala Thr Phe Thr Ala Val

115 120 125

Thr Phe Lys Pro Glu Pro Pro Leu Ser Ser Pro Leu Val Phe Lys His

130 135 140

Val Gly Thr Thr Asn Asn Leu Ser Pro Leu Ala Arg Gln Leu Ala Lys

145 150 155 160

Glu Lys Asn Ile Asp Val Ser Ser Ile Gln Gly Ser Gly Pro Gly Gly

165 170 175

Arg Ile Val Lys Lys Asp Leu Glu Lys Ala Pro Pro Lys Ser Ile Ala

180 185 190

Gly Phe Gly Tyr Pro Glu Ser Pro Glu Val Pro Pro Gly Ser Tyr His

195 200 205

Glu Glu Asn Leu Ser Pro Ile Arg Glu Val Ile Ala Ala Arg Leu Gln

210 215 220

Ala Ala Lys Ile Ser Ile Pro His Phe Tyr Val Arg Gln Gln Val Tyr

225 230 235 240

Ala Ser Pro Leu Leu Asn Leu Leu Lys Glu Leu Gln Ala Gln Gly Ile

245 250 255

Lys Leu Ser Ile Asn Asp Cys Ile Val Arg Ala Cys Ala Leu Ala Leu

260 265 270

Lys Glu Phe Pro Ser Ile Asn Ser Gly Phe Asn Ser Val Asp Asn Lys

275 280 285

Ile Val Arg Phe Asp Thr Ile Asp Ile Ser Ile Ala Val Ala Ile Pro

290 295 300

Asp Gly Ile Ile Thr Pro Ile Ile Arg Cys Ala Asp Arg Lys Asn Leu

305 310 315 320

Gly Met Ile Ser Ala Glu Ile Lys Ser Leu Ala Leu Lys Ala Arg Asn

325 330 335

Gln Ser Leu Gln Asp Thr Glu Tyr Lys Gly Gly Ser Phe Cys Val Ser

340 345 350

Asn Leu Gly Met Thr Gly Ile Thr Glu Phe Thr Ala Ile Val Asn Pro

355 360 365

Pro Gln Ala Ala Ile Leu Ala Val Gly Ser Val Thr Glu Gln Ala Leu

370 375 380

Val Leu Asp Gly Glu Ile Thr Ile Gly Ser Thr Cys Asn Leu Thr Leu

385 390 395 400

Ser Val Asp His Arg Val Ile Asp Gly Tyr Pro Ala Ala Met Phe Met

405 410 415

Lys Arg Leu Gln Lys Ile Leu Glu Ala Pro Ala Val Leu Leu Leu Asn

420 425 430

<210>322

<211>104

<212>PRT

<213>Chlamydia pneumoniae

<400>322

Ile Asp Glu Thr Ser Met Phe Phe Ser Phe Ala Ser Cys Leu Ala Asn
 1 5 10 15
 Gly Glu Arg Leu Phe Val Val Pro Thr Cys Leu Lys Thr Lys Gly Glu
 20 25 30
 Glu Arg Gly Gly Ser Gly Leu Lys Val Thr Ala Val Asn Val Ala Glu
 35 40 45
 Ala Ala Cys Gly Val Val Ala Gly Glu Thr Ser Ser Glu Glu Pro Phe
 50 55 60
 Gly Asp Ala Ser Arg Leu Glu Gly Ser Val Leu Gly Arg Ser Ser Ser
 65 70 75 80
 Arg Leu Lys Gly Ser Leu Ala Ser Val Glu Ser Thr Ala Ile Gly Val
 85 90 95
 Pro Ile Thr Ile Phe Ser Pro Ser
 100

<210>323

<211>828

<212>PRT

<213>Chlamydia pneumoniae

<400>323

Asn Gly Cys Ile Val Glu Asp Phe Ser Ser Phe Asp Lys Asn Lys Val
 1 5 10 15
 Ser Val Asp Ser Met Lys Arg Ala Ile Leu Asp Arg Leu Tyr Leu Ser
 20 25 30
 Val Val Gln Ser Pro Glu Ser Ala Ser Pro Arg Asp Ile Phe Thr Ala
 35 40 45
 Val Ala Lys Thr Val Met Glu Trp Leu Ala Lys Gly Trp Leu Lys Thr
 50 55 60
 Gln Asn Gly Tyr Tyr Lys Asn Asp Val Lys Arg Val Tyr Tyr Leu Ser
 65 70 75 80
 Met Glu Phe Leu Leu Gly Arg Ser Leu Thr Ser Asn Leu Leu Asn Leu
 85 90 95
 Gly Ile Leu Asp Leu Val Arg Lys Ala Leu Lys Thr Leu Asn Tyr Asp
 100 105 110
 Phe Asp His Leu Val Glu Met Glu Ser Asp Ala Gly Leu Gly Asn Gly
 115 120 125
 Gly Leu Gly Arg Leu Ala Ala Cys Tyr Leu Asp Ser Met Ala Thr Leu
 130 135 140
 Ala Val Pro Ala Tyr Gly Tyr Gly Ile Arg Tyr Asp Tyr Gly Ile Phe
 145 150 155 160
 Asp Gln Arg Ile Val Asn Gly Tyr Gln Glu Glu Ala Pro Asp Glu Trp
 165 170 175
 Leu Arg Tyr Gly Asn Pro Trp Glu Ile Cys Arg Gly Glu Tyr Leu Tyr
 180 185 190
 Pro Val Arg Phe Tyr Gly Arg Val Ile His Tyr Thr Asp Ser Arg Gly
 195 200 205
 Lys Gln Val Ala Asp Leu Val Asp Thr Gln Glu Val Leu Ala Met Ala
 210 215 220
 Tyr Asp Ile Pro Ile Pro Gly Tyr Gly Asn Asp Thr Val Asn Ser Leu
 225 230 235 240
 Arg Leu Trp Gln Ala Gln Ser Pro Arg Gly Phe Glu Phe Ser Tyr Phe
 245 250 255
 Asn His Gly Asn Tyr Ile Gln Ala Ile Glu Asp Ile Ala Leu Ile Glu
 260 265 270
 Asn Ile Ser Arg Val Leu Tyr Pro Asn Asp Ser Ile Thr Glu Gly Gln
 275 280 285
 Glu Leu Arg Leu Lys Gln Glu Tyr Phe Leu Val Ser Ala Thr Ile Gln
 290 295 300
 Asp Ile Ile Arg Arg Tyr Thr Lys Thr His Ile Cys Leu Asp Asn Leu
 305 310 315 320
 Ala Asp Lys Val Val Gln Leu Asn Asp Thr His Pro Ala Leu Gly
 325 330 335
 Ile Ala Glu Met Met His Ile Leu Val Asp Arg Glu Glu Leu Pro Trp

340 345 350
 Asp Lys Ala Trp Glu Met Thr Thr Val Ile Phe Asn Tyr Thr Asn His
 355 360 365
 Thr Ile Leu Pro Glu Ala Leu Glu Arg Trp Pro Leu Asp Leu Phe Ser
 370 375 380
 Lys Leu Leu Pro Arg His Leu Glu Ile Ile Tyr Glu Ile Asn Ser Arg
 385 390 395 400
 Trp Leu Glu Lys Val Gly Ser Arg Tyr Pro Lys Asn Asp Asp Lys Arg
 405 410 415
 Arg Ser Leu Ser Ile Val Glu Glu Gly Tyr Gln Lys Arg Ile Asn Met
 420 425 430
 Ala Asn Leu Ala Val Val Gly Ser Ala Lys Val Asn Gly Val Ser Ser
 435 440 445
 Phe His Ser Gln Leu Ile Lys Asp Thr Leu Phe Lys Glu Phe Tyr Glu
 450 455 460
 Phe Phe Pro Glu Lys Phe Ile Asn Val Thr Asn Gly Val Thr Pro Arg
 465 470 475 480
 Arg Trp Ile Ala Leu Cys Asn Pro Arg Leu Ser Lys Leu Leu Asn Glu
 485 490 495
 Thr Ile Gly Asp Arg Tyr Ile Ile Asp Leu Ser His Leu Ser Leu Ile
 500 505 510
 Arg Ser Phe Ala Glu Asp Ser Gly Phe Arg Asp His Trp Lys Gly Val
 515 520 525
 Lys Leu Lys Asn Lys Gln Asp Leu Thr Ser Arg Ile Tyr Asn Glu Val
 530 535 540
 Gly Glu Ile Val Asp Pro Asn Ser Leu Phe Asp Cys His Ile Lys Arg
 545 550 555 560
 Ile His Glu Tyr Lys Arg Gln Leu Met Asn Ile Leu Arg Val Ile Tyr
 565 570 575
 Val Tyr Asn Asp Leu Lys Glu Asn Pro Asn Gln Asp Val Val Pro Thr
 580 585 590
 Thr Val Ile Phe Ser Gly Lys Ala Ala Pro Gly Tyr Val Met Ala Lys
 595 600 605
 Leu Ile Ile Lys Leu Ile Asn Ser Val Ala Asp Val Val Asn Gln Asp
 610 615 620
 Ser Arg Val Asn Asp Lys Leu Lys Val Leu Phe Leu Pro Asn Tyr Arg
 625 630 635 640
 Val Ser Met Ala Glu His Ile Ile Pro Gly Thr Asp Leu Ser Glu Gln
 645 650 655
 Ile Ser Thr Ala Gly Met Glu Ala Ser Gly Thr Gly Asn Met Lys Phe
 660 665 670
 Ala Leu Asn Gly Ala Leu Thr Ile Gly Thr Met Asp Gly Ala Asn Ile
 675 680 685
 Glu Met Ala Glu His Ile Gly Lys Glu Asn Met Phe Ile Phe Gly Leu
 690 695 700
 Leu Glu Glu Gln Ile Val Gln Leu Arg Arg Glu Tyr Cys Pro Gln Thr
 705 710 715 720
 Ile Cys Asp Lys Asn Pro Lys Ile Arg Gln Val Leu Asp Leu Leu Glu
 725 730 735
 Gln Gly Phe Phe Asn Ser Asn Asp Lys Asp Leu Phe Lys Pro Ile Val
 740 745 750
 His Arg Leu His Glu Gly Asp Pro Phe Phe Val Leu Ala Asp Leu
 755 760 765
 Glu Ser Tyr Ile Ala Ala His Glu Asn Val Asn Lys Leu Phe Lys Glu
 770 775 780
 Pro Asp Ser Trp Thr Lys Ile Ser Ile Tyr Asn Thr Ala Gly Met Gly
 785 790 795 800
 Phe Phe Ser Ser Asp Arg Ala Ile Gln Asp Tyr Ala Arg Asp Ile Trp
 805 810 815
 His Val Pro Thr Lys Ser Cys Ser Gly Glu Gly Asn
 820 825

<210>324
 <211>86
 <212>PRT

<213>Chlamydia pneumoniae

<400>324

Val Phe Ser His Pro Leu Ala Asn His Ser Ile Thr Val Phe Ala Thr
 1 5 10 15
 Ala Val Lys Ile Ser Leu Gly Asp Ala Asp Ser Gly Asp Cys Thr Thr
 20 25 30
 Leu Lys Tyr Arg Arg Ser Lys Ile Ala Arg Phe Ile Glu Ser Thr Leu
 35 40 45
 Thr Leu Phe Leu Ser Lys Leu Glu Lys Ser Ser Thr Met Gln Pro Phe
 50 55 60
 Gln Ile Pro Ser Arg Thr Leu His Met Arg Asn Leu Lys Lys Lys Lys
 65 70 75 80
 Glu Leu Arg Leu Gly Lys
 85

<210>325

<211>128

<212>PRT

<213>Chlamydia pneumoniae

<400>325

Phe Phe Thr Gln Glu Asn Asn Met Ala Thr Val Ala Gln Thr Pro Gln
 1 5 10 15
 Thr Thr Gln Pro Gln Pro Ser Val Ser His Lys Ala Thr His Arg Tyr
 20 25 30
 Cys Ser Trp Val Phe Phe Lys Pro Ile Leu Val Ser Leu Gly Leu Leu
 35 40 45
 Leu Ala Ser Leu Thr Thr Leu Gly Leu Val Ile Ala Ser Gly Val Thr
 50 55 60
 Leu Ser Leu Gly Ile Gly His Cys Ser Cys Tyr Thr Asp Ser Thr Ala
 65 70 75 80
 Gly Ile Ala Leu Val Leu Ala Phe Asn His Ile Arg Gln Phe Lys Gln
 85 90 95
 Ala Arg Thr Ala Glu Leu Asn Ser Met Lys Met Ile Ser Ala Pro Ala
 100 105 110
 Ala Ala Thr Val Gln Lys Gln Lys Leu Glu Asp Arg Tyr Ser Ser Lys
 115 120 125

<210>326

<211>448

<212>PRT

<213>Chlamydia pneumoniae

<400>326

Phe Met Arg Ala Trp Glu Glu Phe Leu Leu Leu Gln Glu Lys Glu Ile
 1 5 10 15
 Gly Thr Asn Thr Val Asp Lys Trp Leu Arg Ser Leu Lys Val Leu Cys
 20 25 30
 Phe Asp Ala Cys Asn Leu Tyr Leu Glu Ala Gln Asp Ser Phe Gln Ile
 35 40 45
 Thr Trp Phe Glu Glu His Ile Arg His Lys Val Lys Ser Gly Leu Val
 50 55 60
 Asn Asn Asn Asn Lys Pro Ile Arg Val His Val Thr Ser Val Asp Lys
 65 70 75 80
 Ala Ala Pro Phe Tyr Lys Glu Lys Gln Met Gln Gln Glu Lys Thr Ala
 85 90 95
 Tyr Phe Thr Met His Tyr Gly Ser Val Asn Pro Glu Met Thr Phe Ser
 100 105 110
 Asn Phe Leu Val Thr Pro Glu Asn Asp Leu Pro Phe Arg Val Leu Gln
 115 120 125
 Glu Phe Thr Lys Ser Pro Asp Glu Asn Gly Gly Val Thr Phe Asn Pro
 130 135 140
 Ile Tyr Leu Phe Gly Pro Glu Gly Ser Gly Lys Thr His Leu Met Gln
 145 150 155 160
 Ser Ala Ile Ser Val Leu Arg Glu Ser Gly Gly Lys Ile Leu Tyr Val
 165 170 175
 Ser Ser Asp Leu Phe Thr Glu His Leu Val Ser Ala Ile Arg Ser Gly
 180 185 190

Glu Met	Gln Lys	Phe Arg	Ser Phe	Tyr Arg	Asn Ile	Ala Leu	Phe	
	195		200		205			
Ile Glu	Asp Ile	Glu Val	Phe Ser	Gly Lys	Ser Ala	Thr Gln	Glu Glu	
	210		215		220			
Phe Phe	His Thr	Phe Asn	Ser Leu	His Ser	Glu Gly	Lys Leu	Ile Val	
	225		230		235		240	
Val Ser	Ser Ser	Tyr Ala	Pro Val	Asp Leu	Val Ala	Val Glu	Asp Arg	
		245		250		255		
Leu Ile	Ser Arg	Phe Glu	Trp Gly	Val Ala	Ile Pro	Ile His	Pro Leu	
	260		265		270			
Val Gln	Glu Gly	Leu Arg	Ser Phe	Leu Met	Arg Gln	Val Glu	Arg Leu	
	275		280		285			
Ser Ile	Arg Ile	Gln Glu	Thr Ala	Leu Asp	Phe Leu	Ile Tyr	Ala Leu	
	290		295		300			
Ser Ser	Asn Val	Lys Thr	Leu Leu	His Ala	Leu Asn	Leu Leu	Ala Lys	
	305		310		315		320	
Arg Val	Met Tyr	Lys Lys	Leu Ser	His Gln	Leu Leu	Tyr Glu	Asp Asp	
		325		330		335		
Val Lys	Thr Leu	Leu Lys	Asp Val	Leu Glu	Ala Ala	Gly Ser	Val Arg	
	340		345		350			
Leu Thr	Pro Leu	Lys Ile	Ile Arg	Asn Val	Ala Gln	Tyr Tyr	Gly Val	
	355		360		365			
Ser Gln	Glu Ser	Ile Leu	Gly Arg	Ser Gln	Ser Arg	Glu Tyr	Val Leu	
	370		375		380			
Pro Arg	Gln Val	Ala Met	Tyr Phe	Cys Arg	Gln Lys	Leu Ser	Leu Ser	
	385		390		395		400	
Tyr Val	Arg Ile	Gly Asp	Val Phe	Ser Arg	Asp His	Ser Thr	Val Ile	
		405		410		415		
Ser Ser	Ile Arg	Leu Ile	Glu Gln	Lys Ile	Glu Glu	Asn Ser	His Asp	
	420		425		430			
Ile His	Met Ala	Ile Gln	Asp Ile	Ser Xaa	Glu Phe	Lys Phe	Leu Ala	
	435		440		445			

<210>327

<211>808

<212>PRT

<213>Chlamydia pneumoniae

<400>327

Tyr Phe	Asp Leu	Leu Ser	Leu Ile	Phe Arg	Val Tyr	Gln Met	Asn Lys	
1		5		10		15		
Arg Thr	Leu Leu	Phe Val	Ser Leu	Ile Gly	Ile Ala	Phe Val	Gly Cys	
	20		25		30			
Gln Ile	Phe Phe	Gly Tyr	Asn Glu	Phe Arg	Ser Cys	Lys Asn	Leu Ala	
	35		40		45			
Glu Lys	Gln Arg	Lys Ile	Ser Glu	Gln Thr	Leu Ala	Ala Val	Glu Ser	
	50		55		60			
Val Gly	Leu Ser	Val Ala	Ser Trp	Asp Thr	Asp Val	Asn Gly	Glu Glu	
	65		70		75		80	
His Lys	Asn Asn	Tyr Ala	Val Arg	Val Gly	Asp Lys	Leu Phe	Leu Leu	
	85		90		95			
His Asn	Gly Glu	Ala Ala	Gln Ser	Val Tyr	Ser Ser	Gly Glu	Ser Trp	
	100		105		110			
Ser Phe	Val Asp	His Lys	Cys Gly	Phe Asp	Asn Ile	His Leu	Ala Leu	
	115		120		125			
Tyr Arg	Gln Gln	Gly Ser	Ser Phe	Asn Pro	Thr Asn	Thr Gly	Lys Val	
	130		135		140			
Phe Leu	Pro Thr	Asn His	Glu Gly	Leu Pro	Val Leu	Val Val	Glu Phe	
	145		150		155		160	
Arg Asn	Asn Lys	Glu Pro	Leu Val	Phe Leu	Gly Glu	Tyr Ala	Gln Gly	
	165		170		175			
Arg Ile	Ser Asn	Lys Asp	Ser Thr	Ile Phe	Gly Thr	Ala Leu	Val Phe	
	180		185		190			
Trp Arg	Ser Gly	Ser Asp	Tyr Ile	Pro Leu	Gly Leu	Tyr Asp	Ser Arg	
	195		200		205			
Glu Glu	Lys Leu	Val Ser	Leu Asp	Leu Pro	Ile Thr	Arg Ala	Val Ile	

210 215 220
 Phe Gly Asn Asp Gln Asp Ser Ala Lys Ser Ser Asp Thr Ala Asn His
 225 230 235 240
 Tyr Val Leu Phe Asn Asp Tyr Met Gln Ile Ile Val Ser Glu Glu Ser
 245 250 255
 Gly Ser Ile Glu Gly Ile Asn Leu Pro Phe Ala Ser Thr Asn Asn Lys
 260 265 270
 Ser Ile Val Asn Glu Ile Gly Phe Asp Arg Asp Leu Ala Ser Glu Lys
 275 280 285
 Ser Pro Glu Ala Leu Phe Pro Gly Leu Ser Ser Lys Leu Pro Asp Gly
 290 295 300
 Gln Gln Ala Lys Asn Ser Ile Gly Gly Tyr Tyr Pro Leu Leu Arg Arg
 305 310 315 320
 Gly Leu Leu Ser Asp Ser Lys Lys Leu Leu Pro Leu Glu Tyr His Ala
 325 330 335
 Leu Asn Val Val Ser Gly Arg Glu Leu Ala Thr Pro Val Ala Leu Arg
 340 345 350
 Tyr Arg Val Leu Ser Tyr Thr Pro His Ser Ile Gln Leu Glu Ser Leu
 355 360 365
 Asp Arg Ser Val Gln Lys Val Tyr Lys Leu Pro Glu Asn Pro Glu Glu
 370 375 380
 Lys Pro Tyr Val Phe Glu Thr Ala Ile Thr Leu Thr Lys Glu Thr Glu
 385 390 395 400
 Asp Val Trp Val Thr Ser Gly Val Pro Glu Val Glu Ile Met Ser Asn
 405 410 415
 Ala Ser Ala Pro Thr Ile Lys Tyr Arg Val Ile Lys Lys Asn Lys Gly
 420 425 430
 Ser Leu Asp Lys Val Lys Leu Pro Lys Val Lys Glu Pro Leu Ala Val
 435 440 445
 Arg Arg Gly Val Tyr Pro Gln Trp Ile Leu Asn Ser Asn Gly Tyr Phe
 450 455 460
 Gly Ile Ile Leu Thr Pro Leu Ser Glu Ile Ala Ser Gly Tyr Gly Ser
 465 470 475 480
 Leu Tyr Ile Ser Gly Ser Thr Ala Pro Thr Arg Leu Ser Ala Ile Ser
 485 490 495
 Pro Lys Asn Gln Leu Tyr Pro Val Ser Lys Tyr Pro Gly Tyr Glu Thr
 500 505 510
 Leu Leu Pro Leu Pro Lys Asp Ala Gly Thr His Arg Phe Leu Val Tyr
 515 520 525
 Ala Gly Pro Leu Ala Glu Pro Thr Leu Lys Val Leu Asp Lys Thr Ile
 530 535 540
 Thr Gln Glu Lys Gly Glu Asn Pro Glu Tyr Leu Asp Ser Ile Ser Phe
 545 550 555 560
 Arg Gly Val Phe Ala Phe Ile Thr Ala Pro Phe Ala Ala Leu Leu Phe
 565 570 575
 Ile Ile Met Lys Phe Phe Lys Leu Val Thr Gly Ser Trp Gly Ile Ser
 580 585 590
 Ile Ile Leu Leu Thr Val Phe Leu Lys Leu Leu Leu Tyr Pro Leu Ser
 595 600 605
 Ala Trp Ser Ile Arg Ser Xaa Arg Arg Met Xaa Ile Leu Ser Pro Tyr
 610 615 620
 Ile Gln Gln Ile Gln Gln Lys Tyr Lys Asn Glu Pro Lys Arg Ala Gln
 625 630 635 640
 Met Glu Ile Met Gly Leu Tyr Lys Thr Asn Lys Val Asn Pro Ile Thr
 645 650 655
 Gly Cys Leu Pro Leu Leu Ile Gln Leu Pro Phe Leu Ile Ala Met Phe
 660 665 670
 Asp Leu Leu Lys Ser Ser Phe Leu Leu Arg Gly Ala Ser Phe Ile Pro
 675 680 685
 Gly Trp Ile Asp Asn Leu Thr Ala Pro Asp Val Leu Phe Ser Trp Gln
 690 695 700
 Thr Ser Ile Trp Phe Ile Gly Asn Glu Phe His Leu Leu Pro Ile Leu
 705 710 715 720
 Leu Gly Ile Val Met Phe Leu Gln Gln Lys Val Thr Ser Leu His Lys

725 730 735
 Lys Gly Pro Val Thr Asp Gln Gln Lys Gln Gln Gln Val Met Gly Asn
 740 745 750
 Met Met Ala Ile Leu Phe Thr Ala Met Phe Tyr Asn Phe Pro Ser Gly
 755 760 765
 Leu Asn Ile Tyr Trp Leu Ser Ser Met Ile Leu Gly Val Val Gln Gln
 770 775 780
 Trp Ile Thr Asn Lys Ile Leu Asp Ser Lys His Leu Lys Asn Glu Val
 785 790 795 800
 Val Leu Asn Asn Lys Lys His Arg
 805

<210>328

<211>203

<212>PRT

<213>Chlamydia pneumoniae

<400>328

Phe Phe Met Asp Gly Val Phe Thr Tyr Asn Ile Leu Lys Arg Ser Phe
 1 5 10 15
 Lys Tyr Gly Thr Glu Ala Cys Arg Val Met Glu Ala Phe Phe Gly Phe
 20 25 30
 Leu Leu Trp Ala Ala Ile Phe Ser Trp Ile Tyr Lys Lys Lys Ile Ser
 35 40 45
 Lys Leu Thr Phe Leu Phe Leu Thr Asp Leu Cys Gly Ser Val Phe Gly
 50 55 60
 Ile Ala Ala Phe Phe Ile Arg Leu Gly Asn Phe Trp Asn Gln Glu Ile
 65 70 75 80
 Val Gly Thr Pro Thr Ser Leu Pro Trp Gly Val Val Phe Ser Asp Pro
 85 90 95
 Met Gln Gly Val Gln Gly Val Pro Val His Pro Val Gln Leu Tyr Glu
 100 105 110
 Gly Ile Ser Tyr Leu Val Val Ser Gly Ile Leu Tyr Phe Leu Ser Tyr
 115 120 125
 Lys Arg Tyr Leu His Leu Gly Lys Gly Tyr Val Thr Ser Ile Ala Cys
 130 135 140
 Ile Ser Val Ala Phe Ile Arg Phe Phe Ala Glu Tyr Val Lys Ser His
 145 150 155 160
 Gln Gly Lys Val Leu Ala Glu Asp Cys Leu Leu Thr Ile Gly Gln Ile
 165 170 175
 Leu Ser Ile Pro Leu Phe Leu Phe Gly Val Ala Leu Leu Ile Ile Cys
 180 185 190
 Ser Leu Lys Ala Arg Arg His Arg Ser His Ile
 195 200

<210>329

<211>153

<212>PRT

<213>Chlamydia pneumoniae

<400>329

Cys Thr Met Ala Arg Asn Ile Lys Tyr Phe Leu Ile Leu Phe Pro Gly
 1 5 10 15
 Ile Leu Trp Ile Ser Ala Gly Met Lys Leu Leu Leu Lys Ala Thr Ala
 20 25 30
 Ile Ala Leu Asp Pro Leu Ser Ser Phe Phe Thr Tyr Cys Leu Leu Ser
 35 40 45
 Met Val Ser Trp Gly Leu Ala Ser Leu Lys His Arg Tyr Leu Leu Ser
 50 55 60
 Lys Thr Ile Arg Lys Lys Gln Leu Ser Leu Ser Ser Glu Phe Phe Ser Gln
 65 70 75 80
 Lys Ile Thr Trp Ile Ala Tyr Ile Lys Gln Thr Phe Ile Ser Arg Arg
 85 90 95
 Phe Leu Ile Met Val Ile Met Ile Ala Phe Ser Leu Val Leu Arg Arg
 100 105 110
 Tyr Ile Ser Asn Pro Gln Ala Leu Phe Val Ile Arg Ala Thr Val Gly
 115 120 125
 Tyr Ala Leu Ile Lys Thr Ala Ile Ala Tyr Phe Ser Lys Leu Gln Asn

130 135 140
 Ala Leu Met Glu Asn Pro Glu Gly Asn
 145 150
 <210>330
 <211>122
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>330
 Met Glu Ile Ile His Ile Gly Thr Asp Ile Ile Glu Ile Ser Arg Ile
 1 5 10 15
 Arg Glu Ala Ile Ala Thr His Gly Asn Arg Leu Leu Asn Arg Ile Phe
 20 25 30
 Thr Glu Ala Glu Gln Lys Tyr Cys Leu Glu Lys Thr Asp Pro Ile Pro
 35 40 45
 Ser Phe Ala Gly Arg Phe Ala Gly Lys Glu Ala Val Ala Lys Ala Leu
 50 55 60
 Gly Thr Gly Ile Gly Ser Val Val Ala Trp Lys Asp Ile Glu Val Phe
 65 70 75 80
 Lys Val Ser His Gly Pro Glu Val Leu Leu Pro Ser His Val Tyr Ala
 85 90 95
 Lys Ile Gly Ile Ser Lys Val Ile Leu Ser Ile Ser His Cys Lys Glu
 100 105 110
 Tyr Ala Thr Ala Thr Ala Ile Ala Leu Ala
 115 120
 <210>331
 <211>311
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>331
 Met Ile His Ser Arg Leu Ile Ile Ile Gly Ser Gly Pro Ser Gly Tyr
 1 5 10 15
 Thr Ala Ala Ile Tyr Ala Ser Arg Ala Leu Leu His Pro Leu Leu Phe
 20 25 30
 Glu Gly Phe Phe Ser Gly Ile Ser Gly Gly Gln Leu Met Thr Thr Thr
 35 40 45
 Glu Val Glu Asn Phe Pro Gly Phe Pro Glu Gly Ile Leu Gly Pro Lys
 50 55 60
 Leu Met Asn Asn Met Lys Glu Gln Ala Val Arg Phe Gly Thr Lys Thr
 65 70 75 80
 Leu Ala Gln Asp Ile Ile Ser Val Asp Phe Ser Val Arg Pro Phe Ile
 85 90 95
 Leu Lys Ser Lys Glu Glu Thr Tyr Ser Cys Asp Ala Cys Ile Ile Ala
 100 105 110
 Thr Gly Ala Ser Ala Lys Arg Leu Glu Ile Pro Gly Ala Gly Asn Asp
 115 120 125
 Glu Phe Trp Gln Lys Gly Val Thr Ala Cys Ala Val Cys Asp Gly Ala
 130 135 140
 Ser Pro Ile Phe Lys Asn Lys Asp Leu Tyr Val Ile Gly Gly Gly Asp
 145 150 155 160
 Ser Ala Leu Glu Glu Ala Leu Tyr Leu Thr Arg Tyr Gly Ser His Val
 165 170 175
 Tyr Val Val His Arg Arg Asp Lys Leu Arg Ala Ser Lys Ala Met Glu
 180 185 190
 Ala Arg Ala Gln Asn Asn Glu Lys Ile Thr Phe Leu Trp Asn Ser Glu
 195 200 205
 Ile Val Lys Ile Ser Gly Asp Ser Ile Val Arg Ser Val Asp Ile Lys
 210 215 220
 Asn Val Gln Thr Gln Glu Ile Thr Thr Arg Glu Ala Ala Gly Val Phe
 225 230 235 240
 Phe Ala Ile Gly His Lys Pro Asn Thr Asp Phe Leu Gly Gly Gln Leu
 245 250 255
 Thr Leu Asp Glu Ser Gly Tyr Ile Val Thr Glu Lys Gly Thr Ser Lys
 260 265 270
 Thr Ser Val Pro Gly Val Phe Ala Gly Asp Val Gln Asp Lys Tyr

275 280
 Tyr Arg Gln Ala Val Thr Ser Ala Gly Gly Gly Cys Ile Ala Ala Leu
 290 295 300
 Asp Ala Glu Arg Phe Leu Gly
 305 310
 <210>332
 <211>580
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>332
 Met Pro Lys Gln Ala Glu Tyr Thr Trp Gly Ser Lys Lys Ile Leu Asp
 1 5 10 15
 Asn Ile Glu Cys Leu Thr Glu Asp Val Ala Glu Phe Lys Asp Leu Leu
 20 25 30
 Tyr Thr Ala His Arg Ile Thr Ser Ser Glu Glu Glu Ser Asp Asn Glu
 35 40 45
 Ile Gln Pro Gly Ala Ile Leu Lys Gly Thr Val Val Asp Ile Asn Lys
 50 55 60
 Asp Phe Val Val Val Asp Val Gly Leu Lys Ser Glu Gly Val Ile Pro
 65 70 75 80
 Met Ser Glu Phe Ile Asp Ser Ser Glu Gly Leu Val Leu Gly Ala Glu
 85 90 95
 Val Glu Val Tyr Leu Asp Gln Ala Glu Asp Glu Glu Gly Lys Val Val
 100 105 110
 Leu Ser Arg Glu Lys Ala Thr Arg Gln Arg Gln Trp Glu Tyr Ile Leu
 115 120 125
 Ala His Cys Glu Glu Gly Ser Ile Val Lys Gly Gln Ile Thr Arg Lys
 130 135 140
 Val Lys Gly Gly Leu Ile Val Asp Ile Gly Met Glu Ala Phe Leu Pro
 145 150 155 160
 Gly Ser Gln Ile Asp Asn Lys Lys Ile Lys Asn Leu Asp Asp Tyr Val
 165 170 175
 Gly Lys Val Cys Glu Phe Lys Ile Leu Lys Ile Asn Val Glu Arg Arg
 180 185 190
 Asn Ile Val Val Ser Arg Arg Glu Leu Leu Glu Ala Glu Arg Ile Ser
 195 200 205
 Lys Lys Ala Glu Leu Ile Glu Gln Ile Ser Ile Gly Glu Tyr Arg Lys
 210 215 220
 Gly Val Val Lys Asn Ile Thr Asp Phe Gly Val Phe Leu Asp Leu Asp
 225 230 235 240
 Gly Ile Asp Gly Leu Leu His Ile Thr Asp Met Thr Trp Lys Arg Ile
 245 250 255
 Arg His Pro Ser Glu Met Val Glu Leu Asn Gln Glu Leu Glu Val Ile
 260 265 270
 Ile Leu Ser Val Asp Lys Glu Lys Gly Arg Val Ala Leu Gly Leu Lys
 275 280 285
 Gln Lys Glu His Asn Pro Trp Glu Asp Ile Glu Lys Lys Tyr Pro Pro
 290 295 300
 Gly Lys Arg Val Leu Gly Lys Ile Val Lys Leu Leu Pro Tyr Gly Ala
 305 310 315 320
 Phe Ile Glu Ile Glu Gly Ile Glu Gly Leu Ile His Ile Ser Glu
 325 330 335
 Met Ser Trp Val Lys Asn Ile Val Asp Pro Ser Glu Val Val Asn Lys
 340 345 350
 Gly Asp Glu Val Glu Ala Ile Val Leu Ser Ile Gln Lys Asp Glu Gly
 355 360 365
 Lys Ile Ser Leu Gly Leu Lys Gln Thr Glu Arg Asn Pro Trp Asp Asn
 370 375 380
 Ile Glu Glu Lys Tyr Pro Ile Gly Leu His Val Asn Ala Glu Ile Lys
 385 390 395 400
 Asn Leu Thr Asn Tyr Gly Ala Phe Val Glu Leu Glu Pro Gly Ile Glu
 405 410 415
 Gly Leu Ile His Ile Ser Asp Met Ser Trp Ile Lys Lys Val Ser His
 420 425 430

Pro Ser Glu Leu Phe Lys Lys Gly Asn Ser Val Glu Ala Val Ile Leu
 435 440 445
 Ser Val Asp Lys Glu Ser Lys Lys Ile Thr Leu Gly Val Lys Gln Leu
 450 455 460
 Ser Ser Asn Pro Trp Asn Glu Ile Glu Ala Met Phe Pro Ala Gly Thr
 465 470 475 480
 Val Ile Ser Gly Val Val Thr Lys Ile Thr Ala Phe Gly Ala Phe Val
 485 490 495
 Glu Leu Gln Asn Gly Ile Glu Gly Leu Ile His Val Ser Glu Leu Ser
 500 505 510
 Asp Lys Pro Phe Ala Lys Ile Glu Asp Ile Ile Ser Ile Gly Glu Asn
 515 520 525
 Val Ser Ala Lys Val Ile Lys Leu Asp Pro Asp His Lys Lys Val Ser
 530 535 540
 Leu Ser Val Lys Glu Tyr Leu Ala Asp Asn Ala Tyr Asp Gln Asp Ser
 545 550 555 560
 Arg Thr Glu Leu Asp Phe Lys Asp Ser Gln Gly Pro Lys Glu Arg Lys
 565 570 575
 Lys Lys Gly Lys
 580

<210>333

<211>225

<212>PRT

<213>Chlamydia pneumoniae

<400>333

Met Asn Lys Asn Leu Val Ala Ile Phe Asp Tyr Met Glu Lys Glu Lys
 1 5 10 15
 Gly Ile Gln Arg Ser Thr Ile Ile Gly Ala Ile Glu Ser Ala Leu Lys
 20 25 30
 Ile Ala Ala Lys Lys Thr Leu Arg Asp Asp Ala Asn Ile Ser Val Asn
 35 40 45
 Ile Asn Ser Arg Thr Gly Asp Ile Glu Val Phe Cys Glu Lys Glu Ile
 50 55 60
 Val Glu Ile Cys Gln Asn Pro Ser Lys Glu Ile Pro Leu Asp Lys Ala
 65 70 75 80
 Arg Glu Tyr Asp Pro Asp Cys Gln Ile Gly Gln Tyr Met Asp Val Pro
 85 90 95
 Phe Val Ser Asp Asn Phe Gly Arg Ile Ala Ala His Ala Ala Arg Gln
 100 105 110
 Ile Ile Gly Gln Lys Leu Arg His Ala Glu Arg Asp Val Ile Tyr Glu
 115 120 125
 Glu Tyr Arg His Arg Val Asn Glu Thr Leu Ser Gly Val Val Lys Arg
 130 135 140
 Phe Ala Lys Gly Ser Asn Leu Ile Ile Asp Leu Gly Lys Val Glu Ala
 145 150 155 160
 Ile Leu Pro Thr Arg Phe Tyr Pro Lys Thr Glu Lys His Lys Ile Gly
 165 170 175
 Asp Lys Ile Tyr Ala Leu Leu Tyr Glu Val Gln Glu Ser Glu Asn Gly
 180 185 190
 Gly Ala Glu Val Ile Leu Ser Arg Ser His Ala Glu Phe Val Lys Gln
 195 200 205
 Leu Phe Ile Ser Arg Ser Pro Arg Thr Arg Arg Arg Phe Cys Gly Asp
 210 215 220

Cys

225

<210>334

<211>174

<212>PRT

<213>Chlamydia pneumoniae

<400>334

Lys Ile Ser Phe Arg Glu Leu Asn Asp Glu Lys Ile Asp Ile Val Asn
 1 5 10 15
 Tyr Ser Pro Val Ser Thr Glu Leu Leu Gln Asn Leu Leu Tyr Pro Ile
 20 25 30

Glu Ile Gln Lys Ile Ala Ile Leu Glu Asp Asp Lys Val Ile Ala Ile
 35 40 45
 Val Val Asn Asp Ala Asp Tyr Ala Thr Val Ile Gly Lys Arg Gly Ile
 50 55 60
 Asn Ala Arg Leu Ile Ser His Ile Leu Asp Tyr Glu Leu Glu Val Gln
 65 70 75 80
 Arg Met Ser Glu Tyr Asn Lys Leu Leu Glu Ile Gln Arg Leu Gln Leu
 85 90 95
 Ala Glu Phe Asp Ser Pro His Leu Asp Gln Pro Leu Glu Met Glu Gly
 100 105 110
 Ile Ser Lys Leu Val Ile Gln Asn Leu Glu His Ala Gly Tyr Asp Thr
 115 120 125
 Ile Arg Arg Val Leu Leu Ala Ser Ala Asn Asp Leu Ala Ser Val Pro
 130 135 140
 Gly Ile Ser Leu Glu Leu Ala Tyr Lys Ile Leu Glu Gln Val Ser Lys
 145 150 155 160
 Tyr Gly Glu Ser Lys Val Asp Glu Lys Pro Glu Ile Glu Asp
 165 170

<210>335

<211>761

<212>PRT

<213>Chlamydia pneumoniae

<400>335

Leu Leu Ile Arg Ser Leu Ser Lys Ser Ala Asn Met Glu Lys Val Lys
 1 5 10 15
 Leu Thr Lys Asn Leu Lys Leu Lys Ile Lys Asn Ala Gln Leu Thr Lys
 20 25 30
 Ala Ala Gly Leu Asp Lys Leu Lys Gln Lys Leu Ala Gln Ala Gly Ser
 35 40 45
 Ser Glu Ala Lys Ser Ser Ser Glu Lys Pro Ser Ala Lys Glu Lys Ser
 50 55 60
 Val Lys Val Ala Leu Ala Ala Thr Ser Thr Pro Thr Ala Ser Ala Glu
 65 70 75 80
 Gln Ala Ser Pro Glu Ser Thr Ser Arg Arg Ile Arg Ala Lys Asn Arg
 85 90 95
 Ser Ser Phe Ser Ser Ser Glu Glu Glu Ser Ser Ala His Ile Pro Val
 100 105 110
 Asp Thr Ser Glu Pro Ala Pro Val Ser Ile Ala Asp Pro Glu Pro Glu
 115 120 125
 Leu Glu Val Val Asp Glu Val Cys Asp Glu Ser Pro Glu Val His Pro
 130 135 140
 Val Ala Glu Val Leu Pro Glu Gln Pro Val Leu Pro Glu Thr Pro Pro
 145 150 155 160
 Gln Glu Lys Glu Leu Glu Pro Lys Pro Val Lys Pro Ala Glu Pro Lys
 165 170 175
 Ser Val Val Met Ile Lys Ser Lys Phe Gly Pro Thr Gly Lys His Ile
 180 185 190
 Asn His Leu Leu Ala Lys Thr Phe Lys Ala Pro Ala Lys Glu Glu Lys
 195 200 205
 Val Val Ala Gly Ser Lys Ser Thr Lys Pro Val Ala Ser Asp Lys Thr
 210 215 220
 Gly Lys Pro Gly Thr Ser Glu Gly Gly Glu Gln Asn Asn Arg Glu Lys
 225 230 235 240
 Gln Phe Asn Pro Ala Asn Arg Ser Pro Ala Ser Gly Pro Lys Arg Asp
 245 250 255
 Ala Gly Lys Lys Asn Leu Thr Asp Phe Arg Asp Arg Ser Lys Lys Ser
 260 265 270
 Asp Glu Ser Leu Lys Ala Phe Thr Gly Arg Asp Arg Tyr Gly Leu Asn
 275 280 285
 Glu Gly Gly Glu Glu Asp Arg Trp Arg Lys Lys Arg Val Tyr Lys Pro
 290 295 300
 Lys Lys His Tyr Asp Glu Ala Ser Ile Gln Arg Pro Thr His Ile Lys
 305 310 315 320
 Ile Ser Leu Pro Ile Thr Val Lys Asp Leu Ala Thr Glu Met Lys Leu

325 330 335
 Lys Ala Ser Glu Val Ile Gln Lys Leu Phe Ile His Gly Met Thr Tyr
 340 345 350
 Val Val Asn Asp Ile Leu Asp Ser Glu Thr Ala Val Gln Phe Ile Gly
 355 360 365
 Leu Glu Phe Gly Cys Thr Ile Asp Ile Asp Tyr Ser Glu Gln Asp Lys
 370 375 380
 Leu Cys Leu Ser Asn Asp Thr Val Arg Asp Glu Ile Gln Ser Thr Asp
 385 390 395 400
 Pro Ser Lys Leu Val Ile Arg Ser Pro Ile Val Ala Phe Met Gly His
 405 410 415
 Val Asp His Gly Lys Thr Thr Leu Ile Asp Ser Leu Arg Lys Ser Asn
 420 425 430
 Val Ala Ala Thr Glu Ala Gly Ala Ile Thr Gln His Met Gly Ala Phe
 435 440 445
 Cys Cys Ser Thr Pro Val Gly Asp Ile Thr Ile Leu Asp Thr Pro Gly
 450 455 460
 His Glu Ala Phe Ser Ala Met Arg Ala Arg Gly Ala Glu Val Cys Asp
 465 470 475 480
 Ile Val Val Leu Val Val Ala Gly Asp Glu Gly Ile Lys Xaa Gln Thr
 485 490 495
 Leu Glu Ala Ile Glu His Ala Lys Ala Ala Asp Ile Ala Ile Val Val
 500 505 510
 Ala Ile Asn Lys Cys Asp Lys Pro Asn Phe Asn Ser Glu Thr Ile Tyr
 515 520 525
 Arg Gln Leu Ser Glu Ile Asn Leu Leu Pro Glu Ala Trp Gly Gly Ser
 530 535 540
 Thr Val Thr Val Asn Thr Ser Ala Lys Thr Gly Glu Gly Leu Ser Glu
 545 550 555 560
 Leu Leu Glu Met Leu Ala Leu Gln Ala Glu Val Leu Glu Leu Lys Ala
 565 570 575
 Asp Pro Ser Ala Arg Ala Arg Gly Leu Val Ile Glu Ser Glu Leu His
 580 585 590
 Lys Gly Leu Gly Pro Val Ala Thr Val Leu Ile Gln Asn Gly Ser Leu
 595 600 605
 Lys Leu Gly Glu Ala Leu Val Phe Asn Asp Cys Tyr Gly Lys Val Lys
 610 615 620
 Thr Met His Asn Glu His Asn Glu Leu Met Lys Glu Ala Gly Pro Ser
 625 630 635 640
 Ile Pro Val Leu Ile Thr Gly Leu Ser Asp Ile Pro Lys Ala Gly Asp
 645 650 655
 Pro Phe Phe Val Val Lys Asn Glu Lys Thr Ala Arg Asp Ile Ile Glu
 660 665 670
 Ala Arg Ser Ala Gly Gln Gln Arg Phe Ala Leu Gln Gln Lys Lys Arg
 675 680 685
 Pro Asn Phe Asp Ser Met Leu Gln Asn Lys Lys Thr Leu Lys Leu Met
 690 695 700
 Ile Lys Ala Asp Val Gln Gly Ser Ile Glu Ala Leu Val Ser Ser Ile
 705 710 715 720
 Ser Lys Ile Lys Ser Glu Lys Val Asp Val Glu Ile Leu Thr Asn Ser
 725 730 735
 Val Gly Glu Ile Ser Glu Ser Asp Ile Arg Leu Leu Pro Pro Leu Lys
 740 745 750
 Gln Phe Ser Ser Val Ser Ile Gln Glu
 755 760
 <210>336
 <211>170
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>336
 Asn Phe Asn Lys Gln Cys Arg Arg Asn Phe Arg Ile Arg His Ser Phe
 1 5 10 15
 Thr Ala Ala Ser Lys Ala Val Leu Ile Gly Phe His Thr Gly Ile Glu
 20 25 30

Ser His Ala Glu Pro Leu Ile Lys Ser Leu Gly Val Arg Val Glu Leu
35 40 45
Phe Thr Val Ile Tyr His Ala Ile Asp Ala Ile Lys Glu Ile Met Thr
50 55 60
Ser Leu Leu Asp Pro Ile Ala Glu Glu Lys Asp Glu Gly Ser Ala Glu
65 70 75 80
Ile Lys Glu Ile Phe Arg Ser Ser Gln Val Gly Ser Ile Tyr Gly Cys
85 90 95
Ile Val Thr Glu Gly Ile Met Thr Arg Asn His Lys Val Arg Val Leu
100 105 110
Arg Asn Lys Glu Ile Leu Trp Lys Gly Thr Leu Ser Ser Leu Lys Arg
115 120 125
Val Lys Glu Asp Val Lys Glu Val Arg Lys Gly Leu Glu Cys Gly Ile
130 135 140
Leu Leu Glu Gly Tyr Gln Gln Ala Gln Ile Gly Asp Val Leu Gln Cys
145 150 155 160
Tyr Glu Val Ile Tyr His Pro Gln Lys Leu
165 170

<210>337

<211>141

<212>PRT

<213>Chlamydia pneumoniae

<400>337

Val Met Ser Tyr Asn Val Met Lys Leu Ser Ile Ile His Lys Asn Tyr
1 5 10 15
Asn Leu Lys Tyr Cys Met Thr Glu Asn Arg Arg Ile Lys Arg Val Asn
20 25 30
Ala Leu Leu Gln Glu Ala Ile Ala Lys Val Ile Leu Lys Asp Val Lys
35 40 45
His Pro Lys Ile Ser Asn Leu Trp Ile Thr Val Thr Arg Val Ser Leu
50 55 60
Ser Lys Asp Leu His Ser Ala Arg Val Tyr Val Ser Val Met Pro His
65 70 75 80
Glu Asn Thr Lys Glu Glu Ala Leu Glu Ala Leu Lys Val Ser Ala Gly
85 90 95
Phe Ile Ala His Arg Ala Ser Lys Asn Val Val Leu Lys Tyr Phe Pro
100 105 110
Glu Leu His Phe Tyr Leu Asp Asp Ile Phe Ser Pro Gln Asp Tyr Ile
115 120 125
Glu Asn Leu Leu Trp Gln Ile Gln Glu Lys Glu Lys Ser
130 135 140

<210>338

<211>243

<212>PRT

<213>Chlamydia pneumoniae

<400>338

Leu Asn Thr Ile Lys Asp Met Thr Met Asp Leu Ala Val Glu Leu Lys
1 5 10 15
Glu Gly Ile Leu Leu Val Asp Lys Pro Gln Gly Arg Thr Ser Phe Ser
20 25 30
Leu Ile Arg Ala Leu Thr Lys Leu Ile Gly Val Lys Lys Ile Gly His
35 40 45
Ala Gly Thr Leu Asp Pro Phe Ala Thr Gly Val Met Val Met Leu Ile
50 55 60
Gly Arg Lys Phe Thr Arg Leu Ser Asp Ile Leu Leu Phe Glu Asp Lys
65 70 75 80
Glu Tyr Glu Ala Ile Ala His Leu Gly Thr Thr Thr Asp Ser Tyr Asp
85 90 95
Cys Asp Gly Lys Val Val Gly Arg Ser Lys Lys Ile Pro Ser Leu Glu
100 105 110
Glu Val Leu Ser Ala Ala Glu Tyr Phe Gln Gly Glu Ile Gln Gln Leu
115 120 125
Pro Pro Met Phe Ser Ala Lys Lys Val Gln Gly Lys Lys Leu Tyr Glu
130 135 140

Tyr Ala Arg Lys Gly Ser Ile Glu Arg His His Ser Thr Val Gln
 145 150 155 160
 Val His Leu Gln Ile Thr Lys Tyr Glu Tyr Pro Leu Leu His Phe Val
 165 170 175
 Val Ser Cys Ser Lys Gly Thr Tyr Ile Arg Ser Ile Ala His Glu Leu
 180 185 190
 Gly Thr Met Leu Gly Cys Gly Ala Tyr Leu Glu Gln Leu Arg Arg Leu
 195 200 205
 Arg Ser Gly Arg Phe Ser Ile Asp Glu Cys Ile Asp Gly Asn Leu Leu
 210 215 220
 Asp His Pro Asp Phe Asp Ile Ser Pro Tyr Leu Arg Asp Ala His Gly
 225 230 235 240
 Asn Ser Leu

<210>339

<211>308

<212>PRT

<213>Chlamydia pneumoniae

<400>339

Met Pro Met Glu Ile Ala Tyr Ser Leu Thr Ser Ser Phe Ser Val Asp
 1 5 10 15
 Ser Val Thr Val Gly Phe Phe Asp Gly Cys His Leu Gly His Ser Asn
 20 25 30
 Leu Leu Ser Ile Leu Thr Ser Tyr Ser Gly Ser Ser Gly Val Ile Thr
 35 40 45
 Phe Asp Ser His Pro Gln Thr Val Leu Ser Leu Asn His Thr Lys Leu
 50 55 60
 Ile Asn Thr Lys Glu Glu Arg Leu Gln Leu Leu Gln Thr Phe Pro Ile
 65 70 75 80
 Asp Trp Leu Gly Val Leu Thr Phe Asp Leu Asn Phe Ala Asn Gln Ser
 85 90 95
 Ala Glu Glu Phe Leu Thr Leu Leu His Arg Asn Leu Lys Cys Lys Arg
 100 105 110
 Leu Ile Leu Gly Tyr Asp Ser Cys Ile Gly Lys Glu Gln Gln Ser Asn
 115 120 125
 Thr Glu Ala Leu Asp Thr Ile Gly Lys Pro Leu Gly Ile Glu Val Ile
 130 135 140
 Lys Ile Pro Pro Tyr Arg Met Asp Asn Ile Val Val Ser Ser Lys Ala
 145 150 155 160
 Ile Arg Gln Phe Leu Ser Ala Gly Asn Leu Glu Cys Ala His Arg Phe
 165 170 175
 Leu Gly His Pro Tyr Ala Ile Ser Gly Lys Ile Thr Glu Gly Ser Gly
 180 185 190
 Ile Gly Gly Ser Leu Gly Phe Ala Thr Ile Asn Leu Pro Arg Glu Glu
 195 200 205
 Ser Leu Ile Pro Leu Gly Val Tyr Ala Cys Glu Ile Arg Tyr Asp Ser
 210 215 220
 Thr Thr Cys Gln Gly Val Met Asn Leu Gly Thr Ala Pro Thr Phe Gly
 225 230 235 240
 Arg Glu Ser Leu Tyr Ala Glu Ala His Ile Phe Ser Phe Ala Glu Asn
 245 250 255
 Leu Tyr Gly Lys Glu Val Ser Ile Ile Pro Arg Lys Phe Leu Arg Glu
 260 265 270
 Glu Lys Lys Phe Gln Ser Lys Glu Thr Leu Ile Arg Ala Ile Glu Lys
 275 280 285
 Asp Ile Leu Asp Ala Gln Asp Trp Phe Ala Lys Gly Ser Phe Asn Tyr
 290 295 300
 Glu Gly Thr Ala
 305

<210>340

<211>198

<212>PRT

<213>Chlamydia pneumoniae

<400>340

Tyr Asn Tyr Cys Ser Leu Arg Lys Gly Leu Pro Leu Asn Thr Leu Glu
 1 5 10 15
 Leu Thr Pro Glu Gln Ile Val Ala Leu Lys Pro Tyr Pro Phe Leu Thr
 20 25 30
 Met Lys Pro Met Phe Tyr Ile Ala Asn Val Asp Glu Ser Ser Leu Pro
 35 40 45
 Asp Met Asp Asn Asp Tyr Val Ala Ala Val Arg Glu Val Ala Ala Lys
 50 55 60
 Glu Asn Ser Lys Val Val Pro Ile Cys Val Arg Ile Glu Glu Glu Ile
 65 70 75 80
 Val Ser Leu Pro Ile Glu Glu Arg Leu Glu Phe Leu Met Ser Leu Gly
 85 90 95
 Leu Glu Lys Ser Gly Leu His Arg Leu Val Arg Ala Ala Tyr Asp Thr
 100 105 110
 Leu Gly Leu Ile Ser Tyr Phe Thr Thr Gly Pro Gln Glu Ser Arg Ala
 115 120 125
 Trp Thr Val Val Arg Gly Ser Ser Ala Trp Glu Ala Ala Gly Glu Ile
 130 135 140
 His Thr Asp Ile Gln Lys Gly Phe Ile Arg Ala Glu Val Ile Thr Phe
 145 150 155 160
 Glu Asp Met Ile Glu Cys Gln Gly Arg Ala Ala Arg Glu Leu Gly
 165 170 175
 Lys Leu His Ile Glu Gly Arg Asp Tyr Ile Val Gln Asp Gly Asp Thr
 180 185 190
 Met Leu Phe Leu His Asn
 195

<210>341

<211>180

<212>PRT

<213>Chlamydia pneumoniae

<400>341

Met Ser His Thr Glu Cys Gly Ile Val Gly Leu Pro Asn Val Gly Lys
 1 5 10 15
 Ser Gly Leu Phe Asn Ala Leu Thr Gly Ala Gln Val Ala Ser Cys Asn
 20 25 30
 Tyr Pro Phe Cys Thr Ile Asp Pro Asn Val Gly Ile Val Pro Val Ile
 35 40 45
 Asp Glu Arg Leu Glu Ala Leu Ala Lys Ile Ser Asn Ser Gln Lys Ile
 50 55 60
 Ile Tyr Ala Asp Met Lys Phe Val Asp Ile Ala Gly Leu Val Lys Gly
 65 70 75 80
 Ala Ser Asp Gly Ala Gly Leu Gly Asn Arg Phe Leu Ser His Ile Arg
 85 90 95
 Glu Thr His Ala Ile Ala His Val Val Arg Cys Phe Asp Asp Pro Asp
 100 105 110
 Val Thr His Val Ser Gly Lys Val Asn Pro Val Glu Asp Ile Glu Val
 115 120 125
 Ile Asn Leu Glu Leu Ile Phe Ser Asp Phe Ser Ser Ala Lys Asn Ile
 130 135 140
 His Ser Lys Leu Glu Lys Leu Ala Lys Gly Lys Arg Glu Val Gly Ala
 145 150 155 160
 Leu Leu Pro Leu Phe Asp Thr Ile Ile Ala His Leu Glu Lys Gly Cys
 165 170 175
 Arg Tyr Val Leu
 180

<210>342

<211>360

<212>PRT

<213>Chlamydia pneumoniae

<400>342

Met Gly Glu Lys Thr Glu Lys Ala Thr Pro Lys Arg Leu Arg Asp Ala
 1 5 10 15
 Arg Lys Lys Gly Gln Val Ala Lys Ser Gln Asp Phe Pro Ser Ala Val
 20 25 30

Thr Phe Ile Val Ser Phe Thr Ala Phe Ser Leu Ser Thr Phe Phe
 35 40 45
 Phe Lys His Leu Gly Gly Phe Leu Val Ser Met Leu Ser Gln Ala Pro
 50 55 60
 Thr Arg His Asp Pro Val Ile Thr Leu Phe Tyr Leu Lys Asn Cys Leu
 65 70 75 80
 Met Leu Ile Leu Thr Ala Ser Leu Pro Leu Leu Gly Ala Val Ala Val
 85 90 95
 Val Gly Val Ile Val Gly Phe Leu Ile Val Gly Pro Thr Phe Ser Thr
 100 105 110
 Glu Val Phe Lys Pro Asp Ile Lys Lys Phe Asn Pro Ile Glu Asn Ile
 115 120 125
 Lys Gln Lys Phe Lys Ile Lys Thr Leu Ile Glu Leu Ile Lys Ser Ile
 130 135 140
 Leu Lys Ile Phe Gly Ala Ala Leu Ile Leu Tyr Ile Thr Leu Lys Ser
 145 150 155 160
 Lys Val Ser Leu Ile Ile Glu Thr Ala Gly Val Ser Pro Ile Ile Thr
 165 170 175
 Ala Gln Ile Phe Lys Glu Ile Phe Tyr Lys Ala Val Thr Ser Ile Gly
 180 185 190
 Ile Phe Phe Leu Ile Val Ala Ile Leu Asp Leu Val Tyr Gln Arg His
 195 200 205
 Asn Phe Ala Lys Glu Leu Lys Met Glu Lys Phe Glu Val Lys Gln Glu
 210 215 220
 Phe Lys Asp Thr Glu Gly Asn Pro Glu Ile Lys Gly Arg Arg Arg Gln
 225 230 235 240
 Ile Ala Gln Glu Ile Ala Tyr Glu Asp Ser Ser Ser Gln Val Lys His
 245 250 255
 Ala Ser Thr Val Val Ser Asn Pro Lys Asp Ile Ala Val Ala Ile Gly
 260 265 270
 Tyr Met Pro Glu Lys Tyr Lys Ala Pro Trp Ile Ile Ala Met Gly Ile
 275 280 285
 Asn Leu Arg Ala Lys Arg Ile Leu Asp Glu Ala Glu Lys Tyr Gly Ile
 290 295 300
 Pro Ile Met Arg Asn Val Pro Leu Ala His Gln Leu Leu Asp Glu Gly
 305 310 315 320
 Lys Glu Leu Lys Phe Ile Pro Glu Ser Thr Tyr Glu Ala Ile Gly Glu
 325 330 335
 Ile Leu Leu Tyr Ile Thr Ser Leu Asn Ala Gln Asn Pro Asn Asn Lys
 340 345 350
 Asn Thr Asn Gln Pro Asp His Leu
 355 360

<210>343

<211>606

<212>PRT

<213>Chlamydia pneumoniae

<400>343

Ser Val Cys Gly Ser Cys His Ser Gly Phe Gly Asp Phe Val Val Gly
 1 5 10 15
 Gly Asn Tyr Val Val Gly Phe Ile Ile Phe Leu Ile Ile Thr Ile Ile
 20 25 30
 Gln Phe Ile Val Val Thr Lys Gly Ala Glu Arg Val Ala Glu Val Ala
 35 40 45
 Ala Arg Phe Arg Leu Asp Ala Met Pro Gly Lys Gln Met Ala Ile Asp
 50 55 60
 Ala Asp Leu Arg Ala Gly Met Ile Asp Ala Thr Gln Ala Arg Asp Lys
 65 70 75 80
 Arg Ala Gln Ile Gln Lys Glu Ser Glu Leu Tyr Gly Ala Met Asp Gly
 85 90 95
 Ala Met Lys Phe Ile Lys Gly Asp Val Ile Ala Gly Ile Val Ile Ser
 100 105 110
 Leu Ile Asn Ile Val Gly Gly Leu Thr Ile Gly Val Ala Met His Gly
 115 120 125
 Met Asp Leu Ala Gln Ala Ala His Val Tyr Thr Leu Leu Ser Ile Gly

130	135	140																	
Asp Gly Leu Val Ser Gln Ile Pro Ser Leu Leu Ile Ala Leu Thr Ala																			
145	150	155																	160
Gly Ile Val Thr Thr Arg Val Ser Ser Asp Lys Asn Thr Asn Leu Gly																			
	165	170																	175
Lys Glu Ile Ser Thr Gln Leu Val Lys Glu Pro Arg Ala Leu Leu Leu																			
	180	185																	190
Ala Gly Ala Ala Thr Leu Gly Val Gly Phe Phe Lys Gly Phe Pro Leu																			
	195	200																	205
Trp Ser Phe Ser Ile Leu Ala Leu Ile Phe Val Ala Leu Gly Ile Leu																			
	210	215																	220
Leu Leu Thr Lys Lys Ser Ala Ala Gly Lys Lys Gly Gly Gly Ser Gly																			
	225	230																	240
Ala Ser Thr Thr Val Gly Ala Ala Gly Asp Gly Ala Ala Thr Val Gly																			
	245	250																	255
Asp Asn Pro Asp Asp Tyr Ser Leu Thr Leu Pro Val Ile Leu Glu Leu																			
	260	265																	270
Gly Lys Asp Leu Ser Lys Leu Ile Gln His Lys Thr Lys Ser Gly Gln																			
	275	280																	285
Ser Phe Val Asp Asp Met Ile Pro Lys Met Arg Gln Ala Leu Tyr Gln																			
	290	295																	300
Asp Ile Gly Ile Arg Tyr Pro Gly Ile His Val Arg Thr Asp Ser Pro																			
	305	310																	320
Ser Leu Glu Gly Tyr Asp Tyr Met Ile Leu Leu Asn Glu Val Pro Tyr																			
	325	330																	335
Val Arg Gly Lys Ile Pro Pro His His Val Leu Thr Asn Glu Val Glu																			
	340	345																	350
Asp Asn Leu Ser Arg Tyr Asn Leu Pro Phe Ile Thr Tyr Lys Asn Ala																			
	355	360																	365
Ala Gly Leu Pro Ser Ala Trp Val Ser Glu Asp Ala Lys Ala Ile Leu																			
	370	375																	380
Glu Lys Ala Ala Ile Lys Tyr Trp Thr Pro Leu Glu Val Ile Ile Leu																			
	385	390																	400
His Leu Ser Tyr Phe Phe His Lys Ser Ser Gln Glu Phe Leu Gly Ile																			
	405	410																	415
Gln Glu Val Arg Ser Met Ile Glu Phe Met Glu Arg Ser Phe Pro Asp																			
	420	425																	430
Leu Val Lys Glu Val Thr Arg Leu Ile Pro Leu Gln Lys Leu Thr Glu																			
	435	440																	445
Ile Phe Lys Arg Leu Val Gln Glu Gln Ile Ser Ile Lys Asp Leu Arg																			
	450	455																	460
Thr Ile Leu Glu Ser Leu Ser Glu Trp Ala Gln Thr Glu Lys Asp Thr																			
	465	470																	480
Val Leu Leu Thr Glu Tyr Val Arg Ser Ser Leu Lys Leu Tyr Ile Ser																			
	485	490																	495
Phe Lys Phe Ser Gln Gly Gln Ser Ala Ile Ser Val Tyr Leu Leu Asp																			
	500	505																	510
Pro Glu Ile Glu Glu Met Ile Arg Gly Ala Ile Lys Gln Thr Ser Ala																			
	515	520																	525
Gly Ser Tyr Leu Ala Leu Asp Pro Asp Ser Val Asn Leu Ile Leu Lys																			
	530	535																	540
Ser Met Arg Asn Thr Ile Thr Pro Thr Pro Ala Gly Gly Gln Pro Pro																			
	545	550																	560
Val Leu Leu Thr Ala Ile Asp Val Arg Arg Tyr Val Arg Lys Leu Ile																			
	565	570																	575
Glu Thr Glu Phe Pro Asp Ile Ala Val Ile Ser Tyr Gln Glu Ile Leu																			
	580	585																	590
Pro Glu Ile Arg Ile Gln Pro Leu Gly Arg Ile Gln Ile Phe																			
	595	600																	605

<210>344

<211>215

<212>PRT

<213>Chlamydia pneumoniae

<400>344

Tyr Val Val Ala His Arg Arg His Met Ala Ala Ser Gly Gln Thr Gly
 1 5 10 15
 Gly Leu Gly Gly Thr Gln Gly Val Asn Leu Ala Ala Val Glu Ala Ala
 20 25 30
 Ala Ala Lys Ala Asp Ala Ala Glu Val Val Ala Ser Gln Glu Gly Ser
 35 40 45
 Glu Met Asn Met Ile Gln Gln Ser Gln Asp Leu Thr Asn Pro Ala Ala
 50 55 60
 Ala Thr Arg Thr Lys Lys Lys Glu Glu Lys Phe Gln Thr Leu Glu Ser
 65 70 75 80
 Arg Lys Lys Gly Glu Ala Gly Lys Ala Glu Lys Lys Ser Glu Ser Thr
 85 90 95
 Glu Glu Lys Pro Asp Thr Asp Leu Ala Asp Lys Tyr Ala Ser Gly Asn
 100 105 110
 Ser Glu Ile Ser Gly Gln Glu Leu Arg Gly Leu Arg Asp Ala Ile Gly
 115 120 125
 Asp Asp Ala Ser Pro Glu Asp Ile Leu Ala Leu Val Gln Glu Lys Ile
 130 135 140
 Lys Asp Pro Ala Leu Gln Ser Thr Ala Leu Asp Tyr Leu Val Gln Thr
 145 150 155 160
 Thr Pro Pro Ser Gln Gly Lys Leu Lys Glu Ala Leu Ile Gln Ala Arg
 165 170 175
 Asn Thr His Thr Glu Gln Phe Gly Arg Thr Ala Ile Gly Ala Lys Asn
 180 185 190
 Ile Leu Phe Ala Ser Gln Glu Tyr Ala Asp Gln Leu Asn Val Ser Pro
 195 200 205
 Ser Gly Phe Ala Leu Cys Thr
 210 215
 <210>345
 <211>240
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>345
 Ile Lys Arg Ser Ala Tyr Pro Ser Lys Glu Tyr Ser Tyr Gly Ala Ile
 1 5 10 15
 Arg Thr Asn Cys Tyr Trp Cys Glu Lys His Leu Ile Cys Leu Ser Arg
 20 25 30
 Ile Cys Arg Pro Thr Glu Cys Phe Ser Phe Arg Xaa Arg Ser Leu Tyr
 35 40 45
 Leu Glu Val Thr Gly Asp Thr His Thr Cys Asp Gln Leu Leu Ser Met
 50 55 60
 Leu Gln Asp Arg Tyr Thr Tyr Gln Asp Met Ala Ile Val Ser Ser Phe
 65 70 75 80
 Leu Met Lys Gly Met Ala Thr Glu Leu Lys Arg Gln Gly Pro Tyr Val
 85 90 95
 Pro Ser Ala Gln Leu Gln Val Leu Met Thr Glu Thr Arg Asn Leu Gln
 100 105 110
 Ala Val Leu Thr Ser Tyr Asp Tyr Phe Glu Ser Arg Val Pro Ile Leu
 115 120 125
 Leu Asp Ser Leu Lys Ala Glu Gly Ile Gln Thr Pro Ser Asp Leu Asn
 130 135 140
 Phe Val Lys Ile Ala Glu Ser Tyr His Lys Ile Ile Asn Asp Lys Phe
 145 150 155 160
 Pro Thr Ala Ser Lys Val Glu Arg Glu Val Arg Asn Leu Ile Gly Asp
 165 170 175
 Asp Val Asp Ser Val Thr Gly Val Leu Asn Leu Phe Phe Ser Ala Leu
 180 185 190
 Arg Gln Thr Ser Ser Arg Leu Phe Ser Ser Ala Asp Lys Arg Gln Gln
 195 200 205
 Leu Gly Ala Met Ile Ala Asn Ala Leu Asp Ala Val Asn Ile Asn Asn
 210 215 220
 Glu Asp Tyr Pro Lys Ala Ser Asp Phe Pro Lys Pro Tyr Pro Trp Ser
 225 230 235 240
 <210>346

<211>151

<212>PRT

<213>Chlamydia pneumoniae

<400>346

Lys Arg Ile Ala Met Gln Asn Gln Tyr Glu Gln Leu Leu Glu Ser Leu
1 5 10 15
Ala Pro Leu Leu Asn Thr Thr Leu Ala Pro Asp Lys Asn Asn Ser Cys
20 25 30
Leu Ile Arg Phe Ser Asp Thr His Val Pro Val Gln Ile Glu Glu Asp
35 40 45
Gly Asn Ser Gly Asp Leu Ala Val Ser Thr Leu Leu Gly Thr Leu Pro
50 55 60
Glu Asn Val Phe Arg Glu Arg Ile Phe Lys Ala Ala Leu Ser Val Asn
65 70 75 80
Gly Ser Phe Gln Ser Ser Ile Lys Gly Ile Leu Gly Tyr Gly Glu Val
85 90 95
Thr Gln Gln Leu Tyr Leu Ser Asp Ile Leu Ser Met Asn Tyr Leu Asn
100 105 110
Gly Glu Lys Leu Phe Glu Tyr Leu Lys Leu Phe Ser Leu His Ala Lys
115 120 125
Ile Trp Met Glu Ser Leu Arg Thr Gly Asn Leu Pro Asp Leu His Val
130 135 140
Leu Gly Ile Tyr Tyr Val Ala
145 150

<210>347

<211>526

<212>PRT

<213>Chlamydia pneumoniae

<400>347

Val Asn Val Leu Lys Tyr Thr Lys His Ser Pro Ser Ala His Ala Trp
1 5 10 15
Lys Leu Ile Gly Thr Ser Pro Lys His Gly Ile Tyr Leu Pro Leu Phe
20 25 30
Ser Ile His Thr Lys Asn Ser Cys Gly Ile Gly Glu Phe Leu Asp Leu
35 40 45
Ile Pro Leu Ile Ser Trp Cys Gln Lys Gln Gly Phe Ser Val Ile Gln
50 55 60
Leu Leu Pro Leu Asn Asp Thr Gly Glu Asp Thr Ser Pro Tyr Asn Ser
65 70 75 80
Ile Ser Ser Val Ala Leu Asn Pro Leu Phe Leu Ser Leu Ser Ser Leu
85 90 95
Pro Asn Ile Asp Thr Ile Pro Glu Val Ala Lys Lys Leu Gln Asp Met
100 105 110
His Glu Leu Cys Ser Thr Pro Ser Val Ser Tyr Thr Gln Val Lys Glu
115 120 125
Lys Lys Trp Ala Phe Leu Arg Glu Tyr Tyr Gln Lys Cys Cys Lys Ser
130 135 140
Ser Leu Glu Gly Asn Ser Asn Phe Ser Glu Phe Leu Glu Ser Glu Arg
145 150 155 160
Tyr Trp Leu Tyr Pro Tyr Gly Thr Phe Arg Ala Ile Lys His His Met
165 170 175
His Gly Glu Pro Ile Asn Asn Trp Pro Lys Ser Leu Thr Asp Gln Glu
180 185 190
Asn Phe Pro Asp Leu Thr Lys Lys Phe His Asp Glu Val Leu Phe Phe
195 200 205
Ser Tyr Leu Gln Phe Leu Cys Tyr Gln Gln Leu Cys Glu Val Lys Ala
210 215 220
Tyr Ala Asp Gln His His Val Leu Leu Lys Gly Asp Leu Pro Ile Leu
225 230 235 240
Ile Ser Lys Asp Ser Cys Asp Val Trp Tyr Phe Arg Asp Tyr Phe Ser
245 250 255
Ser Ser Arg Ser Val Gly Ala Pro Pro Asp Leu Tyr Asn Ser Glu Gly
260 265 270
Gln Asn Trp His Leu Pro Ile Tyr Asn Phe Ser Gln Leu Ala Lys Asp

275 280 285
 Asp Tyr Ile Trp Trp Lys Glu Arg Leu Arg Tyr Ala Gln Asn Phe Tyr
 290 295 300
 Ser Val Tyr Arg Leu Asp His Ile Ile Gly Phe Phe Arg Leu Trp Ile
 305 310 315 320
 Trp Asp Ser Ser Gly Arg Gly Arg Phe Ile Pro Asp Asn Pro Lys Asp
 325 330 335
 Tyr Ile Lys Gln Gly Thr Glu Ile Leu Ser Thr Met Leu Gly Ala Ser
 340 345 350
 Ser Met Leu Pro Ile Gly Glu Asp Leu Gly Ile Ile Pro Gln Asp Val
 355 360 365
 Lys Thr Thr Leu Thr His Leu Gly Ile Cys Gly Thr Arg Ile Pro Arg
 370 375 380
 Trp Glu Arg Asn Trp Glu Ser Asp Ser Ala Phe Ile Pro Leu Lys Asp
 385 390 395 400
 Tyr Asn Pro Leu Ser Val Thr Thr Leu Ser Thr His Asp Ser Asp Thr
 405 410 415
 Phe Ala Gln Trp Trp Leu Asn Ser Pro Lys Glu Ala Lys Gln Phe Ala
 420 425 430
 Lys Phe Leu His Leu Pro Phe Gln Lys Thr Leu Thr Thr Glu Thr Gln
 435 440 445
 Ile Asp Ile Leu Lys Leu Ser His Glu Ser Ala Ser Ile Phe His Ile
 450 455 460
 Asn Leu Phe Asn Asp Tyr Leu Ala Leu Cys Pro Asp Leu Val Ser Lys
 465 470 475 480
 Asn Leu Gln Arg Glu Arg Ile Asn Thr Pro Gly Thr Ile Ser Lys Lys
 485 490 495
 Asn Trp Ser Tyr Arg Val Arg Pro Ser Leu Glu Glu Leu Ala Ile His
 500 505 510
 Lys Lys Phe Asn Gly Tyr Ile Glu Lys Ile Leu Thr Gly Leu
 515 520 525

<210>348

<211>89

<212>PRT

<213>Chlamydia pneumoniae

<400>348

Met Ser Arg Lys Cys Pro Leu Thr Gly Lys Arg Pro Arg Arg Gly Tyr
 1 5 10 15
 Ser Tyr Thr Leu Arg Gly Ile Ala Lys Lys Lys Lys Gly Ile Gly Leu
 20 25 30
 Lys Val Thr Gly Lys Thr Lys Arg Arg Phe Phe Pro Asn Met Leu Thr
 35 40 45
 Lys Arg Leu Trp Ser Thr Glu Glu Asn Arg Phe Leu Lys Leu Lys Ile
 50 55 60
 Ser Ala Ser Ala Leu Arg His Ile Asp Lys Leu Gly Leu Glu Lys Val
 65 70 75 80
 Leu Glu Arg Ala Lys Ser Lys Asn Phe
 85

<210>349

<211>584

<212>PRT

<213>Chlamydia pneumoniae

<400>349

Met Ser Phe Leu Arg Arg His Ile Ser Leu Phe Arg Ser Gln Lys Gln
 1 5 10 15
 Leu Ile Asp Val Phe Ala Pro Val Ser Pro Asn Leu Glu Leu Ala Glu
 20 25 30
 Ile His Arg Arg Val Ile Glu Asp Gln Gly Pro Ala Leu Leu Phe His
 35 40 45
 Asn Val Ile Gly Ser Ser Phe Pro Val Leu Thr Asn Leu Phe Gly Thr
 50 55 60
 Lys His Arg Val Asp Gln Leu Phe Ser Gln Ala Pro Asp Asn Leu Ile
 65 70 75 80
 Ala Arg Val Ala His Leu Ile Ser Ser Thr Pro Lys Leu Ser Ser Leu

<211>354

<212>PRT

<213>Chlamydia pneumoniae

<400>350

Lys Met Asn Lys Arg Gln Lys Asp Lys Leu Lys Ile Cys Val Ile Ile
 1 5 10 15
 Ser Thr Leu Ile Leu Val Gly Ile Phe Ala Arg Ala Pro Arg Gly Asp
 20 25 30
 Thr Phe Lys Thr Phe Leu Lys Ser Glu Glu Ala Ile Ile Tyr Ser Asn
 35 40 45
 Gln Cys Asn Glu Asp Met Arg Lys Ile Leu Cys Asp Ala Ile Glu His
 50 55 60
 Ala Asp Glu Glu Ile Phe Leu Arg Ile Tyr Asn Leu Ser Glu Pro Lys
 65 70 75 80
 Ile Gln Gln Ser Leu Thr Arg Gln Ala Gln Ala Lys Asn Lys Val Thr
 85 90 95
 Ile Tyr Tyr Gln Lys Phe Lys Ile Pro Gln Ile Leu Lys Gln Ala Ser
 100 105 110
 Asn Val Thr Leu Val Glu Gln Pro Pro Ala Gly Arg Lys Leu Met His
 115 120 125
 Gln Lys Ala Leu Ser Ile Asp Lys Lys Asp Ala Trp Leu Gly Ser Ala
 130 135 140
 Asn Tyr Thr Asn Leu Ser Leu Arg Leu Asp Asn Asn Leu Ile Leu Gly
 145 150 155 160
 Met His Ser Ser Glu Leu Cys Asp Leu Ile Ile Thr Asn Thr Ser Gly
 165 170 175
 Asp Phe Ser Ile Lys Asp Gln Thr Gly Lys Tyr Phe Val Leu Pro Gln
 180 185 190
 Asp Arg Lys Ile Ala Ile Gln Ala Val Leu Glu Lys Ile Gln Thr Ala
 195 200 205
 Gln Lys Thr Ile Gln Val Ala Met Phe Ala Leu Thr His Ser Glu Ile
 210 215 220
 Ile Gln Ala Leu His Gln Ala Lys Gln Arg Gly Ile His Val Asp Ile
 225 230 235 240
 Ile Ile Asp Arg Ser His Ser Lys Leu Thr Phe Lys Gln Leu Arg Gln
 245 250 255
 Leu Asn Ile Asn Lys Asp Phe Val Ser Ile Asn Thr Ala Pro Cys Thr
 260 265 270
 Leu His His Lys Phe Ala Val Ile Asp Asn Lys Thr Leu Leu Ala Gly
 275 280 285
 Ser Ile Asn Trp Ser Lys Gly Arg Phe Ser Leu Asn Asp Glu Ser Leu
 290 295 300
 Ile Ile Leu Glu Asn Leu Thr Lys Gln Gln Asn Gln Lys Leu Arg Met
 305 310 315 320
 Ile Trp Lys Asp Leu Ala Lys His Ser Glu His Pro Thr Val Asp Asp
 325 330 335
 Glu Glu Lys Glu Ile Ile Glu Lys Ser Leu Pro Val Glu Glu Gln Glu
 340 345 350
 Ala Ala

<210>351

<211>243

<212>PRT

<213>Chlamydia pneumoniae

<400>351

Phe Ile Ser Ile Glu Met Leu Leu Leu Ser Arg Gln Leu Phe Ser Val
 1 5 10 15
 Leu Pro Ser Arg Phe Gln Asp Leu His Val Tyr Arg Phe Lys Glu Ser
 20 25 30
 Leu Lys Leu Leu Gln Phe Met Thr Met Val Gly Gly Glu Ile Val Val
 35 40 45
 Val Leu Ala Glu Ile Lys Glu Asp Leu Arg Ala Arg Lys Leu Pro
 50 55 60
 Val Arg Lys Arg Arg Glu Lys Asn Tyr Leu Arg Ile Phe Arg Val Leu

65	70	75	80
Ser Arg Phe Asp Val Met Arg Ile Ile Arg Phe Asp Pro Tyr Gly Ala			
	85	90	95
Leu Ser Ala Gln Ser Ile Ala Lys Asp Ser Arg Gln Asn Ser Pro Leu			
	100	105	110
Val Glu Lys Ile Ser Glu Glu Ile Ala Thr Asn Glu Ala Ile Arg Leu			
	115	120	125
Ala Leu Leu Ala Ile Gly Asp Arg Glu Gln Glu Glu Lys Lys Gln Arg			
	130	135	140
His Arg Tyr Lys Leu Leu Gly Gln Lys Gln Ala Lys Val Leu Leu Ser			
	145	150	155
Gln Leu Arg His Val His Leu Asp Phe Lys Lys Leu Tyr Cys Asp Ser			
	165	170	175
Lys Lys Lys Glu Asp Gln Glu Lys Asp Glu Lys Asn Lys Gln Lys Arg			
	180	185	190
Ser Ile Lys Val Thr Lys Lys Lys Lys Gly Ile Ser Leu Gly Ala Ala			
	195	200	205
Ala Ser Gln Ala Ile Ala Ala Ala Glu Ala Trp Val Ile Ala Arg			
	210	215	220
Asn Lys Gly Val Leu Glu Thr Ala Ser Thr Leu Phe Tyr Gln Lys Asp			
	225	230	235
Glu Glu Ala			240

<210>352

<211>584

<212>PRT

<213>Chlamydia pneumoniae

<400>352

Ile Gln Arg Ile Ile Met Ala Val Ser Gly Gly Gly Gly Val Gln Pro			
1	5	10	15
Ser Ser Asp Pro Gly Lys Trp Asn Pro Ala Leu Gln Gly Glu Gln Ala			
	20	25	30
Glu Gly Pro Ser Pro Leu Lys Glu Ser Ile Phe Ser Glu Thr Lys Gln			
	35	40	45
Ala Ser Ser Ala Ala Lys Gln Glu Ser Leu Val Arg Ser Gly Ser Thr			
	50	55	60
Gly Met Tyr Ala Thr Glu Ser Gln Ile Asn Lys Ala Lys Tyr Arg Lys			
	65	70	75
Ala Gln Asp Arg Ser Ser Thr Ser Pro Lys Ser Lys Leu Lys Gly Thr			
	85	90	95
Phe Ser Lys Met Arg Ala Ser Val Gln Gly Phe Met Ser Gly Phe Gly			
	100	105	110
Ser Arg Ala Ser Arg Val Ser Ala Lys Arg Ala Ser Asp Ser Gly Glu			
	115	120	125
Gly Thr Ser Leu Leu Pro Thr Glu Met Asp Val Ala Leu Lys Lys Gly			
	130	135	140
Asn Arg Ile Ser Pro Glu Met Gln Gly Phe Phe Leu Asp Ala Ser Gly			
	145	150	155
Met Gly Gly Ser Ser Asp Ile Ser Gln Leu Ser Leu Glu Ala Leu			
	165	170	175
Lys Ser Ser Ala Phe Ser Gly Ala Arg Ser Leu Ser Leu Ser Ser Ser			
	180	185	190
Glu Ser Ser Ser Val Ala Ser Phe Gly Ser Phe Gln Lys Ala Ile Glu			
	195	200	205
Pro Met Ser Glu Glu Lys Val Asn Ala Trp Thr Val Ala Arg Leu Gly			
	210	215	220
Gly Glu Met Val Ser Ser Leu Leu Asp Pro Asn Val Glu Thr Ser Ser			
	225	230	235
Leu Val Arg Arg Ala Met Ala Thr Gly Asn Glu Gly Met Ile Asp Leu			
	245	250	255
Ser Asp Leu Gly Gln Glu Glu Xaa Ser Thr Ala Met Thr Ser Pro Arg			
	260	265	270
Ala Val Glu Gly Lys Val Lys Val Ser Ser Ser Asp Ser Pro Glu Ala			
	275	280	285

Asn Pro Thr Gly Ile Asn Ser Asn Thr Leu Glu Arg Asn Glu Lys
 290 295 300
 Glu Ala Glu Lys Gln Glu Ser Arg Glu Gln Leu Ser Glu Asp Gln Met
 305 310 315 320
 Met Leu Ala Arg Ala Met Ala Gly Leu Leu Thr Gly Ala Ala Pro Gln
 325 330 335
 Glu Val Leu Ser Asn Ser Val Trp Ser Gly Pro Ser Thr Val Phe Pro
 340 345 350
 Pro Pro Lys Phe Ser Gly Thr Leu Pro Thr Gln Arg Ser Gly Asp Lys
 355 360 365
 Ser Lys His Lys Ser Pro Gly Ile Glu Lys Ser Thr Asn His Thr Asn
 370 375 380
 Phe Ser Pro Leu Arg Glu Gly Thr Val Lys Ser Ala Glu Val Lys Ser
 385 390 395 400
 Leu Pro His Pro Glu Ser Met Tyr Arg Phe Pro Lys Asp Ser Ile Val
 405 410 415
 Ser Arg Glu Glu Pro Glu Ala Val Val Lys Glu Ser Thr Ala Phe Lys
 420 425 430
 Asn Pro Glu Asn Ser Ser Gln Asn Phe Leu Pro Ile Ala Val Glu Ser
 435 440 445
 Val Phe Pro Lys Glu Ser Gly Thr Gly Gly Ala Leu Gly Ser Asp Ala
 450 455 460
 Val Ser Ser Ser Tyr His Phe Leu Ala Gln Arg Gly Val Ser Leu Leu
 465 470 475 480
 Ala Pro Leu Pro Arg Ala Thr Asp Asp Tyr Lys Glu Lys Leu Glu Ala
 485 490 495
 His Lys Gly Pro Gly Gly Pro Pro Asp Pro Leu Ile Tyr Gln Tyr Arg
 500 505 510
 Asn Val Ala Val Glu Pro Pro Ile Val Leu Arg Ser Pro Gln Pro Phe
 515 520 525
 Ser Gly Ser Ser Arg Leu Ser Val Gln Gly Lys Pro Glu Ala Ala Ser
 530 535 540
 Val His Asp Asp Gly Gly Gly Asn Ser Gly Gly Phe Ser Gly Asp
 545 550 555 560
 Gln Arg Arg Gly Ser Ser Gly Gln Lys Ala Ser Arg Gln Glu Lys Lys
 565 570 575
 Gly Lys Lys Leu Ser Thr Asp Ile
 580

<210>353

<211>271

<212>PRT

<213>Chlamydia pneumoniae

<400>353

Glu Ile Gly Met Leu Leu Arg Gly Ile Pro Ala Ala Glu Lys Ile Leu
 1 5 10 15
 Gln Arg Leu Lys Glu Glu Ile Ser Gln Ser Pro Thr Ser Pro Gly Leu
 20 25 30
 Ala Val Val Leu Ile Gly Asn Asp Pro Ala Ser Glu Val Tyr Val Gly
 35 40 45
 Met Lys Val Lys Lys Ala Thr Glu Ile Gly Ile Ile Ser Lys Ala His
 50 55 60
 Lys Leu Pro Ser Asp Ser Thr Leu Ser Ser Val Leu Lys Leu Ile Glu
 65 70 75 80
 Arg Leu Asn Gln Asp Pro Ser Ile His Gly Ile Leu Val Gln Leu Pro
 85 90 95
 Leu Pro Lys His Leu Asp Ser Glu Val Ile Leu Gln Ala Ile Ser Pro
 100 105 110
 Asp Lys Asp Val Asp Gly Leu His Pro Val Asn Met Gly Lys Leu Leu
 115 120 125
 Leu Gly Asn Phe Asp Gly Leu Leu Pro Cys Thr Pro Ala Gly Ile Ile
 130 135 140
 Glu Leu Leu Asn Tyr Tyr Glu Ile Pro Leu Arg Gly Arg His Ala Ala
 145 150 155 160
 Ile Val Gly Arg Ser Asn Ile Val Gly Lys Pro Leu Ala Ala Leu Met

165 170 175
 Met Gln Lys His Pro Gln Thr Asn Cys Thr Val Thr Val Leu His Ser
 180 185 190
 Gln Ser Glu Asn Leu Pro Glu Ile Leu Lys Thr Ala Asp Ile Ile Ile
 195 200 205
 Ala Ala Leu Gly Ala Pro Leu Phe Ile Lys Glu Thr Met Val Ala Pro
 210 215 220
 His Ala Val Ile Val Asp Val Gly Thr Thr Arg Val Pro Ala Asp Asn
 225 230 235 240
 Ala Lys Gly Tyr Thr Leu Leu Gly Asp Val Asp Phe Asn Asn Val Val
 245 250 255
 Thr Lys Cys Ala Glu Ser Leu Gln Phe Leu Glu Ala Leu Val Pro
 260 265 270

<210>354

<211>300

<212>PRT

<213>Chlamydia pneumoniae

<400>354

Arg Arg Trp Ser His Asp Cys Arg Tyr Ala His Glu Gln Tyr Met Ala
 1 5 10 15
 Met Leu Pro Lys Phe Phe Leu Val Leu Cys Leu Gly Leu Cys Ser
 20 25 30
 Cys Ser Gln Lys Thr Thr Thr Ile Glu Gly Glu Gln Met Thr Ile Phe
 35 40 45
 Tyr Arg Ile Val Leu Gly Thr Ser Leu Ser Ala Lys Glu Lys Ala Ser
 50 55 60
 Leu Ser Gln Gln Ile Asp Arg Cys Phe His Lys Ile Asp Ser Ile Tyr
 65 70 75 80
 Asn Asn Trp Asn Pro Tyr Ser Glu Leu Ser Ile Ile Asn Arg Ala Pro
 85 90 95
 Ala Asp Val Pro Ile Thr Leu Ser Val Glu Leu Ser Glu Phe Leu Asp
 100 105 110
 Gln Val Asp Thr Leu Tyr Lys Leu Ser Glu Gly Arg Phe Asp Pro Thr
 115 120 125
 Val Gly Pro Leu Lys Thr Leu Trp Leu Leu His Leu Lys Ser Gln Thr
 130 135 140
 Leu Pro Pro Lys Asp Val Trp Glu Gln His Tyr Lys Asp Met Gly Trp
 145 150 155 160
 Gln His Leu Glu Phe Gln Ser Asn Thr Lys Thr Leu Ile Lys Lys Asn
 165 170 175
 Pro His Val Gln Ile Asp Leu Cys Gly Val Val Lys Gly Tyr Ala Val
 180 185 190
 Asp Cys Leu Asn Glu Ile Cys Asn Thr Phe Cys Pro Asn Asn Tyr Val
 195 200 205
 Glu Trp Gly Gly Glu Ile Lys Thr Ser Gly His His Pro Ser Gly Arg
 210 215 220
 Pro Trp Arg Ile Phe Ser Glu Ala Ala Gly Thr Ile Leu Asp Ile Asp
 225 230 235 240
 Asp Met Ala Ile Ala Thr Ser Gly Asn His Ile Gln Lys Trp Cys Val
 245 250 255
 Glu Gly Lys Ile Tyr Thr His Ile Leu Asp Thr Arg Thr Gly Lys Pro
 260 265 270
 Leu Glu Leu Ser Ser Tyr Pro Ile Gln Ser Val Ser Val Val His Pro
 275 280 285
 Thr Ala His Thr Pro Thr Leu Leu Pro Gln Ser Ser
 290 295 300

<210>355

<211>165

<212>PRT

<213>Chlamydia pneumoniae

<400>355

Leu Leu Tyr Trp Phe Leu Ser Pro Ile Met Gly Glu Asp Leu Met Ala
 1 5 10 15
 Gln Lys Glu Ile Val Ser Asn Arg Lys Ala Leu Arg Asn Tyr Glu Val

20 25
 Ile Glu Thr Leu Glu Ala Gly Ile Val Leu Thr Gly Thr Glu Ile Lys
 35 40 45
 Ser Leu Arg Asp His Gly Gly Asn Leu Gly Asp Ala Tyr Val Ile Val
 50 55 60
 Ser Lys Gly Glu Gly Trp Leu Leu Asn Ala Ser Ile Ala Pro Tyr Arg
 65 70 75 80
 Phe Gly Asn Ile Tyr Asn His Glu Glu Arg Arg Lys Arg Lys Leu Leu
 85 90 95
 Leu His Arg Tyr Glu Leu Arg Lys Leu Glu Gly Lys Ile Ala Gln Lys
 100 105 110
 Gly Met Thr Leu Ile Pro Leu Gly Met Phe Leu Ser Arg Gly Tyr Val
 115 120 125
 Lys Val Arg Leu Gly Cys Cys Arg Gly Lys Lys Ala Tyr Asp Lys Arg
 130 135 140
 Arg Thr Ile Ile Glu Arg Glu Lys Glu Arg Glu Val Ala Ala Ala Met
 145 150 155 160
 Lys Arg Arg His His
 165

<210>356

<211>135

<212>PRT

<213>Chlamydia pneumoniae

<400>356

Glu Asn Met Lys Phe Val Val Ser Arg Asn Glu Leu Gly Asn Leu Ile
 1 5 10 15
 Lys Lys Ile Gln Ser Val Val Pro Gln Asn Thr Pro Ile Pro Val Leu
 20 25 30
 Thr His Val Leu Ile Glu Thr Tyr Asn Asp Glu Leu Val Phe Thr Ala
 35 40 45
 Thr Asp Leu Thr Val Ser Thr Arg Cys Val Thr Lys Ala Lys Val Tyr
 50 55 60
 Glu Lys Gly Ala Ile Ser Ile Pro Ser Lys Arg Phe Phe Gln Leu Val
 65 70 75 80
 Lys Glu Leu Thr Glu Ala Asn Leu Glu Ile Ser Ser Ser Ala Gly Glu
 85 90 95
 Met Ala Gln Ile Thr Ser Gly Ser Ser Tyr Phe Ala Tyr Ser Ala Trp
 100 105 110
 Lys Lys Lys Thr Ser Pro Cys Ser Leu Ile Tyr Lys Met Leu Cys Val
 115 120 125
 Phe Pro Cys Leu Gln Ser Ser
 130 135

<210>357

<211>303

<212>PRT

<213>Chlamydia pneumoniae

<400>357

Glu Arg Arg Tyr Phe His Ser Leu Gln Glu Ile Phe Ser Ile Ser Lys
 1 5 10 15
 Arg Ile Asn Arg Gly Lys Phe Arg Asn Phe Leu Phe Ser Arg Gly Asn
 20 25 30
 Gly Thr Asn His Leu Gly Ile Phe Ile Phe Arg Leu Leu Ser Met Glu
 35 40 45
 Lys Glu Asp Phe Pro Met Leu Pro Asp Ile Gln Asn Ala Leu Arg Phe
 50 55 60
 Ser Leu Pro Ala Glu Gln Leu Lys Thr Met Leu Gln Arg Thr Ser Phe
 65 70 75 80
 Ala Val Ser Arg Glu Glu Ser Arg Tyr Val Leu Thr Gly Val Leu Leu
 85 90 95
 Ala Ile Ala Asn Gly Val Ala Thr Ile Val Gly Thr Asp Gly Lys Arg
 100 105 110
 Leu Ala Lys Ile Asp Ala Glu Val Thr Leu Asp Lys Ser Phe Ser Gly
 115 120 125
 Glu Tyr Ile Ile Pro Ile Lys Ala Val Glu Glu Ile Ile Lys Met Cys

130 135 140
 Ser Asp Glu Gly Glu Ala Thr Ile Phe Leu Asp Gln Asp Lys Ile Ala
 145 150 155 160
 Val Glu Cys Asp Asn Thr Leu Leu Ile Thr Lys Leu Leu Ser Gly Glu
 165 170 175
 Phe Pro Asp Phe Ser Pro Val Ile Ser Thr Glu Ser Asn Val Lys Leu
 180 185 190
 Asp Leu His Arg Glu Glu Leu Ile Thr Leu Leu Lys Gln Val Ala Leu
 195 200 205
 Phe Thr Asn Glu Ser Ser His Ser Val Lys Phe Ser Phe Leu Pro Gly
 210 215 220
 Glu Leu Thr Leu Thr Ala Asn Cys Thr Lys Val Gly Glu Gly Lys Val
 225 230 235 240
 Ser Met Ala Val Asn Tyr Ser Gly Glu Leu Leu Glu Ile Ala Phe Asn
 245 250 255
 Pro Phe Phe Phe Leu Asp Ile Leu Lys His Ser Lys Asp Glu Leu Val
 260 265 270
 Ser Leu Gly Ile Ser Asp Ser Tyr Asn Pro Gly Ile Ile Thr Asp Ser
 275 280 285
 Ala Ser Gly Leu Phe Val Ile Met Pro Met Arg Leu His Asp Asp
 290 295 300

<210>358

<211>218

<212>PRT

<213>Chlamydia pneumoniae

<400>358

Pro Leu Tyr Pro Leu Leu Ile Val Leu Ser Ser Arg Ser Ser Ala Glu
 1 5 10 15
 Lys Cys Ser Leu Lys Lys Gln Ala Asn Leu Asn Arg Gly Leu Trp Asp
 20 25 30
 Glu Gln Leu Val Lys His Gly Thr Tyr Leu Ser Ile Gln Arg Phe Leu
 35 40 45
 Cys Ser Gln Lys Leu Ser Asp Leu Ser Lys Glu Leu Trp Ser Asn Asn
 50 55 60
 Leu Lys Glu Gln Leu Ala Leu Lys Phe Lys Ser Ser Leu Ile Lys Asn
 65 70 75 80
 Ser Asp Ile Ser Glu Thr Ala Val Ala Glu Glu Phe His Lys Gln Leu
 85 90 95
 Ser Ile Ser Leu Pro Arg Asp Leu Glu Trp Gly Ser Thr Ser Val Gly
 100 105 110
 Pro His Arg Glu Asp Phe Leu Leu Thr Met Asn Gln Met Pro Val Ser
 115 120 125
 Gln Phe Ser Ser Glu Gly Gln Lys His Ser Leu Leu Ala Ile Leu Arg
 130 135 140
 Leu Ala Glu Cys Leu Tyr Leu Lys Gln Ser His His Val Ser Pro Leu
 145 150 155 160
 Val Cys Leu Asp Asp Ile His Ala Gly Leu Asp Asn Glu Arg Val Gly
 165 170 175
 Gln Leu Leu Asp Pro Ala Pro Thr Leu Gly Gln Thr Leu Ile Thr Ser
 180 185 190
 Thr His Met His Gly Glu Leu Pro Lys Thr Ser Leu Val Leu Ser Ile
 195 200 205
 Glu Asn Ala Gln Val Ser Glu Gln Ile Ile
 210 215

<210>359

<211>127

<212>PRT

<213>Chlamydia pneumoniae

<400>359

His Met Lys Lys Phe Leu Leu Thr Ile Leu Phe Leu Ala Val Gly Asn
 1 5 10 15
 Pro Leu Phe Ser Glu Thr Ser Val Ile Gln Thr Leu Pro Ser Gly Ile
 20 25 30
 Gly Gly Leu Lys Glu Thr Ser Lys Gln Lys Glu Ser Val Val Cys Val

35 40 45
 His Ala Phe Leu Arg Ser Tyr Thr Ser Leu Lys Pro Ile Ala Arg Val
 50 55 60
 Leu Glu Lys Glu His Tyr Asp Val Phe Ile Trp Asn Tyr Glu Thr Arg
 65 70 75 80
 Lys Phe Thr Leu Glu Lys His Ala Glu His Leu Asn Arg Leu Leu Lys
 85 90 95
 Lys Ile Ala Glu Leu Lys Pro Gly Val Pro Ile Asn Phe Val Thr His
 100 105 110
 Ser Ile Gly Glu Val Ile Val Arg Ala Leu Ala Glu Lys Asn Ser
 115 120 125

<210>360

<211>244

<212>PRT

<213>Chlamydia pneumoniae

<400>360

Leu Ile Leu Leu Glu Glu Ser Leu Phe Val Arg Leu Leu Lys Lys Ile
 1 5 10 15
 Ala Glu Leu Lys Pro Gly Val Pro Ile Asn Phe Val Thr His Ser Ile
 20 25 30
 Gly Gly Val Ile Val Arg Val Ala Leu Ala His Pro Asp Cys Pro Glu
 35 40 45
 Glu Ala Lys Lys Gly Lys Ala Ile Leu Met Ala Pro Pro Asn Ala Gly
 50 55 60
 Ser Thr Leu Ala Arg Arg Tyr Arg Cys Val Lys Phe Val Gln Phe Val
 65 70 75 80
 Phe Gly Gly Lys Leu Gly Arg Gln Leu Leu Thr Tyr Cys Pro Thr Lys
 85 90 95
 Met Leu Asn Val Gly Lys Leu Pro Ser Ser Leu Asp Val Leu Ile Leu
 100 105 110
 Ser Gly Asn Arg His Ser Lys Phe Leu Pro Phe Arg Leu Pro Tyr Glu
 115 120 125
 Asn Asp Gly Lys Val Cys Thr Ile Glu Thr Lys Leu Asp Thr Pro His
 130 135 140
 Lys Ala Tyr Val Ile His Thr Ser His Thr Tyr Ile Ile Thr Asn Arg
 145 150 155 160
 Lys Ser Leu Tyr Leu Met Lys Glu Phe Leu Lys Glu Gly Asn Thr Thr
 165 170 175
 Pro Ile Ile Glu His Val Pro Glu Ala Ala Leu Glu Gln Thr Val Met
 180 185 190
 Glu Asp Lys Gln Lys Asn Ser Arg Leu Lys Pro Tyr Pro Asn Gln Asp
 195 200 205
 Ile Tyr Val Ile His Cys Phe Gly Ser Arg Pro Tyr Asn Leu Tyr Gly
 210 215 220
 Phe Pro Lys Lys Trp Ser Leu Asn Gln Lys Asn Glu Ile Asn Pro Glu
 225 230 235 240
 Lys Leu Glu Lys

<210>361

<211>621

<212>PRT

<213>Chlamydia pneumoniae

<400>361

Met Thr Ile Ile Tyr Phe Ile Leu Ala Ala Leu Ala Leu Gly Ile Leu
 1 5 10 15
 Val Leu Ile His Glu Leu Gly His Leu Val Val Ala Lys Ala Val Gly
 20 25 30
 Met Ala Val Glu Ser Phe Ser Ile Gly Phe Gly Pro Ala Leu Phe Lys
 35 40 45
 Lys Arg Ile Gly Gly Ile Glu Tyr Arg Ile Gly Cys Ile Pro Phe Gly
 50 55 60
 Gly Tyr Val Arg Ile Arg Gly Met Glu Arg Thr Lys Glu Lys Gly Glu
 65 70 75 80
 Lys Gly Lys Ile Asp Ser Val Tyr Asp Ile Pro Gln Gly Phe Phe Ser

576

595 600 605
 Ile Phe Leu Thr Phe Gln Asp Leu Phe Arg Phe Phe Gly
 610 615 620
 <210>362
 <211>340
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>362
 Ser Lys Val Ile Phe Gln Gln Leu Gln Glu Phe Ala Pro Leu Ala Ala
 1 5 10 15
 Ala Val Tyr Asn Glu Glu Val Tyr Asn Glu Ala Cys Gln Arg Phe Pro
 20 25 30
 His Met Gln Phe Phe Leu Gly Gln Glu Gly Leu Thr Gln Leu Cys Ile
 35 40 45
 Met Asp Thr Val Thr Thr Val Val Ala Ala Ser Ser Gly Ile Glu Ala
 50 55 60
 Leu Pro Ala Ile Leu Glu Ser Met Lys Lys Gly Lys Ala Leu Ala Leu
 65 70 75 80
 Ala Asn Lys Glu Ile Leu Val Cys Ala Gly Glu Leu Val Ser Lys Thr
 85 90 95
 Ala Lys Glu Asn Gly Ile Lys Val Leu Pro Ile Asp Ser Glu His Asn
 100 105 110
 Ala Leu Tyr Gln Cys Leu Glu Gly Arg Thr Ile Glu Gly Ile Lys Lys
 115 120 125
 Leu Ile Leu Thr Ala Ser Gly Gly Pro Leu Leu Asn Lys Ser Leu Glu
 130 135 140
 Glu Leu Ser Cys Val Thr Lys Gln Asp Val Leu Asn His Pro Ile Trp
 145 150 155 160
 Asn Met Gly Ser Lys Val Thr Val Asp Ser Ser Thr Leu Val Asn Lys
 165 170 175
 Gly Leu Glu Ile Ile Glu Ala Tyr Trp Leu Phe Gly Leu Glu Asn Val
 180 185 190
 Glu Ile Leu Ala Val Ile His Pro Gln Ser Leu Ile His Gly Met Val
 195 200 205
 Glu Phe Leu Asp Gly Ser Val Ile Ser Ile Met Asn Pro Pro Asp Met
 210 215 220
 Leu Phe Pro Ile Gln Tyr Ala Leu Thr Ala Pro Glu Arg Phe Ala Ser
 225 230 235 240
 Pro Arg Asp Gly Met Asp Phe Ser Lys Lys Gln Thr Leu Glu Phe Phe
 245 250 255
 Pro Val Asp Glu Glu Arg Phe Pro Ser Ile Arg Leu Ala Gln Gln Val
 260 265 270
 Leu Glu Lys Gln Gly Ser Ser Gly Ser Phe Phe Asn Ala Ala Asn Glu
 275 280 285
 Val Leu Val Arg Arg Phe Leu Cys Glu Glu Ile Ser Trp Cys Asp Ile
 290 295 300
 Leu Arg Lys Leu Thr Thr Leu Met Glu Cys His Lys Val Tyr Ala Cys
 305 310 315 320
 His Ser Leu Glu Asp Ile Leu Glu Val Asp Gly Glu Ala Arg Ala Leu
 325 330 335
 Ala Gln Glu Ile
 340

<210>363

<211>329

<212>PRT

<213>Chlamydia pneumoniae

<400>363

Lys Lys Gly Ser Leu Met Ala Leu Gly Pro Ser Pro Tyr Tyr Gly Val
 1 5 10 15
 Ser Phe Phe Gln Phe Phe Ser Val Phe Phe Ser Arg Leu Phe Ser Gly
 20 25 30
 Ser Leu Phe Thr Gly Ser Leu Tyr Ile Asp Asp Ile Gln Ile Ile Val
 35 40 45
 Phe Leu Ala Ile Ser Cys Ser Gly Ala Phe Ala Gly Thr Phe Leu Val

50 55 60
 Leu Arg Lys Met Ala Met Tyr Ala Asn Ala Val Ser His Thr Val Leu
 65 70 75 80
 Phe Gly Leu Val Cys Val Cys Leu Phe Thr His Gln Leu Thr Thr Leu
 85 90 95
 Ser Leu Gly Thr Leu Thr Leu Ala Ala Met Ala Thr Ala Met Leu Thr
 100 105 110
 Gly Phe Leu Ile Tyr Phe Ile Arg Asn Thr Phe Lys Val Ser Glu Glu
 115 120 125
 Ser Ser Thr Ala Leu Val Phe Ser Leu Leu Phe Ser Leu Ser Leu Val
 130 135 140
 Leu Leu Val Phe Met Thr Lys Asn Ala His Ile Gly Thr Glu Leu Val
 145 150 155 160
 Leu Gly Asn Ala Asp Ser Leu Thr Lys Glu Asp Ile Phe Pro Val Thr
 165 170 175
 Ile Val Ile Leu Ala Asn Ala Val Ile Thr Ile Phe Ala Phe Arg Ser
 180 185 190
 Leu Val Cys Ser Ser Phe Asp Ser Val Phe Ala Ser Ser Leu Gly Ile
 195 200 205
 Pro Ile Arg Leu Val Asp Tyr Leu Ile Ile Phe Gln Leu Ser Ala Cys
 210 215 220
 Leu Val Gly Ala Phe Lys Ala Val Gly Val Leu Met Ala Leu Ala Phe
 225 230 235 240
 Leu Ile Ile Pro Ser Leu Ile Ala Lys Val Ile Ala Lys Ser Ile Arg
 245 250 255
 Ser Leu Met Ala Trp Ser Leu Val Phe Ser Ile Xaa Thr Ala Phe Leu
 260 265 270
 Ala Pro Ala Ser Ser Arg Ala Ile Leu Ser Ala Tyr Asp Leu Gly Leu
 275 280 285
 Ser Thr Ser Gly Ile Ser Val Val Phe Leu Thr Met Met Tyr Ile Val
 290 295 300
 Val Lys Phe Ile Ser Tyr Phe Arg Gly Tyr Phe Ser Lys Asn Phe Glu
 305 310 315 320
 Lys Ile Ser Glu Lys Ser Ser Gln Tyr
 325

<210>364

<211>391

<212>PRT

<213>Chlamydia pneumoniae

<400>364

Trp Arg Asn Met Phe Ser His Cys Lys Leu Leu Phe Phe Gly Leu Cys
 1 5 10 15
 Cys Leu Gly Val Leu Leu Arg Tyr Leu Val Met Gly Ile Ile Val Phe
 20 25 30
 Leu Gly Lys Val Cys Lys Leu His Lys Asp Ser Ala Leu Cys Phe Val
 35 40 45
 Leu Val Val Phe Phe Ala Ile Gly Val Ile Leu Ala Ser Tyr Val Lys
 50 55 60
 Glu Ser Ser Pro Thr Leu Tyr Asn Arg Ile Asn Ala Tyr Leu Tyr Gly
 65 70 75 80
 Gln Ala Ala Thr Leu Gly Phe Leu Glu Ala Thr Leu Ala Ala Ile Val
 85 90 95
 Phe Cys Ala Ser Leu Phe Ala Leu Trp Trp Trp Tyr Arg Gln Ile Val
 100 105 110
 Val Thr Thr Phe Asp Lys Asp Phe Ala Val Thr Cys Gly Leu Lys Thr
 115 120 125
 Val Leu Tyr Glu Ala Leu Ser Leu Ile Phe Ile Ser Leu Val Ile Val
 130 135 140
 Ser Gly Val Arg Ser Val Gly Ile Val Leu Ile Ser Ala Met Phe Val
 145 150 155 160
 Ala Pro Ser Leu Gly Ala Arg Gln Leu Ser Asp Arg Leu Ser Thr Ile
 165 170 175
 Leu Ile Leu Ser Ala Phe Phe Gly Gly Ile Ser Gly Ala Leu Gly Ser
 180 185 190

Tyr Ile Ser Val Ala Thr Cys Arg Ala Ile Ile Gly Gln Ala
 195 200 205
 Val Pro Val Thr Leu Pro Thr Gly Pro Leu Val Val Ile Cys Ala Gly
 210 215 220
 Leu Leu Ala Gly Leu Cys Leu Leu Phe Ser Pro Lys Ser Gly Trp Val
 225 230 235 240
 Ile Arg Phe Val Arg Arg Lys His Phe Ser Phe Ser Lys Asp Gln Glu
 245 250 255
 His Leu Leu Lys Val Phe Trp His Ile Ser His Asn Arg Leu Glu Asn
 260 265 270
 Ile Ser Val Arg Asp Phe Val Cys Ser Tyr Lys Tyr Gln Glu Tyr Phe
 275 280 285
 Gly Pro Lys Pro Phe Pro Arg Trp Arg Val Gln Ile Leu Glu Trp Arg
 290 295 300
 Gly Tyr Val Lys Lys Glu Gln Asp Tyr Tyr Arg Leu Thr Lys Lys Gly
 305 310 315 320
 Arg Ser Glu Ala Leu Arg Leu Val Arg Ala His Arg Leu Trp Glu Ser
 325 330 335
 Tyr Leu Val Asn Ser Leu Asp Phe Ser Lys Glu Ser Val His Glu Leu
 340 345 350
 Ala Glu Glu Ile Glu His Val Leu Thr Glu Glu Leu Asp His Thr Leu
 355 360 365
 Thr Glu Ile Leu Asn Asp Pro Cys Tyr Asp Pro His Arg Gln Ile Ile
 370 375 380
 Pro Asn Lys Lys Lys Glu Val
 385 390

<210>365

<211>113

<212>PRT

<213>Chlamydia pneumoniae

<400>365

Thr Phe Gly Thr Asn Pro Glu Ala Leu Ser Arg Lys Thr Ile Trp Ile
 1 5 10 15
 Val Leu Ile Met Leu Ser Cys Val Phe Ser Asp Thr Ile Phe Leu Ser
 20 25 30
 Ser Phe Leu Ala Val Thr Leu Ile Cys Met Thr Thr Ala Leu Trp Gly
 35 40 45
 Thr Ile Leu Leu Ile Ser Lys Gln Pro Leu Leu Ser Glu Ser Leu Ser
 50 55 60
 His Ala Ser Tyr Pro Gly Leu Leu Val Gly Ala Leu Met Ala Gln Tyr
 65 70 75 80
 Val Phe Ser Leu Gln Ala Ser Ile Phe Trp Ile Val Leu Phe Gly Cys
 85 90 95
 Ala Ala Ser Val Phe Gly Tyr Gly Asp His Cys Phe Leu Arg Glu Ser
 100 105 110
 Met

<210>366

<211>259

<212>PRT

<213>Chlamydia pneumoniae

<400>366

Leu Asn Val Lys Asp Glu Thr Phe Trp Ser Val His Asn Leu Cys Val
 1 5 10 15
 Asn Tyr Glu His Ala Ala Val Leu Tyr His Ile Ser Phe Ser Leu Gly
 20 25 30
 Lys Gly Ser Leu Thr Ala Ile Leu Gly Pro Asn Gly Ala Gly Lys Ser
 35 40 45
 Thr Leu Leu Lys Ala Ser Leu Gly Leu Ile Lys Pro Ser Ser Gly Thr
 50 55 60
 Val Tyr Phe Phe Asn Gln Lys Phe Lys Lys Val Arg Gln Arg Ile Ala
 65 70 75 80
 Tyr Met Pro Gln Arg Ala Ser Val Asp Trp Asp Phe Pro Met Thr Val
 85 90 95

Leu Asp Leu Ala Leu Met Gly Cys Tyr Ser Tyr Lys Met Trp Gly
 100 105 110
 Arg Ile Ser Ser Asp Asp Arg Arg Glu Ala Phe His Ile Leu Glu Arg
 115 120 125
 Val Gly Leu Glu Ser Val Ala Asp Arg Gln Ile Gly Gln Leu Ser Gly
 130 135 140
 Gly Gln Gln Gln Arg Ala Phe Leu Ala Arg Ala Leu Met Gln Lys Ala
 145 150 155 160
 Asp Leu Tyr Leu Met Asp Glu Leu Phe Ser Ala Ile Asp Met Ala Ser
 165 170 175
 Phe Lys Thr Ser Val Gly Val Leu Gln Glu Leu Arg Asp Gln Gly Lys
 180 185 190
 Thr Ile Val Val Val His His Asp Leu Ser His Val Arg Gln Leu Phe
 195 200 205
 Asp His Val Val Leu Leu Asn Lys Arg Leu Ile Cys Cys Gly Pro Thr
 210 215 220
 Asp Glu Cys Leu Asn Gly Asp Thr Ile Phe Gln Thr Tyr Gly Cys Glu
 225 230 235 240
 Ile Glu Leu Leu Glu Gln Thr Leu Lys Leu Ser Arg Gly Lys Gln Phe
 245 250 255
 Gly Ser Cys

<210>367

<211>336

<212>PRT

<213>Chlamydia pneumoniae

<400>367

Trp Ile Leu Lys Asn Ala Ser Arg Glu Met Asp Ala Lys Met Gly Tyr
 1 5 10 15
 Ile Phe Lys Val Met Arg Trp Ile Phe Cys Phe Val Ala Cys Gly Ile
 20 25 30
 Thr Phe Gly Cys Thr Asn Ser Gly Phe Gln Asn Ala Asn Ser Arg Pro
 35 40 45
 Cys Ile Leu Ser Met Asn Arg Met Ile His Asp Cys Val Glu Arg Val
 50 55 60
 Val Gly Asn Arg Leu Ala Thr Ala Val Leu Ile Lys Gly Ser Leu Asp
 65 70 75 80
 Pro His Ala Tyr Glu Met Val Lys Gly Asp Lys Asp Lys Ile Ala Gly
 85 90 95
 Ser Ala Val Ile Phe Cys Asn Gly Leu Gly Leu Glu His Thr Leu Ser
 100 105 110
 Leu Arg Lys His Leu Glu Asn Asn Pro Asn Ser Val Lys Leu Gly Glu
 115 120 125
 Arg Leu Ile Ala Arg Gly Ala Phe Val Pro Leu Glu Glu Asp Gly Ile
 130 135 140
 Cys Asp Pro His Ile Trp Met Asp Leu Ser Ile Trp Lys Glu Ala Val
 145 150 155 160
 Ile Glu Ile Thr Glu Val Leu Ile Glu Lys Phe Pro Glu Trp Ser Ala
 165 170 175
 Glu Phe Lys Ala Asn Ser Glu Glu Leu Val Cys Glu Met Ser Ile Leu
 180 185 190
 Asp Ser Trp Ala Lys Gln Cys Leu Ser Thr Ile Pro Glu Asn Leu Arg
 195 200 205
 Tyr Leu Val Ser Gly His Asn Ala Phe Ser Tyr Phe Thr Arg Arg Tyr
 210 215 220
 Leu Ala Thr Pro Glu Glu Val Ala Ser Gly Ala Trp Arg Ser Arg Cys
 225 230 235 240
 Ile Ser Pro Glu Gly Leu Ser Pro Glu Ala Gln Ile Ser Val Arg Asp
 245 250 255
 Ile Met Ala Val Val Asp Tyr Ile Asn Glu His Asp Val Ser Val Val
 260 265 270
 Phe Pro Glu Asp Thr Leu Asn Gln Asp Ala Leu Lys Lys Ile Val Ser
 275 280 285
 Ser Leu Lys Lys Ser His Leu Val Arg Leu Ala Gln Lys Pro Leu Tyr

290 295 300
 Ser Asp Asn Val Asp Asp Asn Tyr Phe Ser Thr Phe Lys His Asn Val
 305 310 315 320
 Cys Leu Ile Thr Glu Glu Leu Gly Gly Val Ala Leu Glu Cys Gln Arg
 325 330 335

<210>368

<211>172

<212>PRT

<213>Chlamydia pneumoniae

<400>368

Lys Val Gly Phe Met Ala Val Glu Gln Ser His Ile Lys Glu Glu Ile
 1 5 10 15
 Glu Lys Leu Ile Gly Lys Ala Ile Lys Arg Val Cys Gly Asn Lys Glu
 20 25 30
 Asn Asp Leu Cys Arg Tyr Leu Pro Gly Pro Ser Gly Gly Tyr Met His
 35 40 45
 His Phe Thr Leu Lys Lys Met Lys Ser Ala Ala Pro Glu Gln Leu Leu
 50 55 60
 Lys Met Leu Lys Thr Phe Ile Leu Glu Ser Glu Thr Pro Arg Thr Ile
 65 70 75 80
 Asn Pro Lys Pro Arg Ala Pro Arg Gly Ser Lys Lys Arg Arg Asp Phe
 85 90 95
 Ile Asn Phe Thr Lys Thr Asp Ile Glu Arg Val Leu Glu Leu Ala Arg
 100 105 110
 Gln Val Gly Asp Lys Asp Leu Leu Ala Arg Phe Ser Pro Lys Lys Pro
 115 120 125
 Leu Thr Ser Leu Lys Arg Glu Leu Ile Arg Ser Ile Arg Asn Gly Ile
 130 135 140
 Val Ser Val Glu Leu Trp Asn Ala Tyr Val Glu Ala Val Lys Ala Val
 145 150 155 160
 Ser Ser Pro Asn Leu Glu Val Thr Ser Pro Phe Val
 165 170

<210>369

<211>524

<212>PRT

<213>Chlamydia pneumoniae

<400>369

Lys Ile Lys Val Phe Gln Arg Val Asn Met Thr Lys Thr Glu Glu Lys
 1 5 10 15
 Pro Phe Gly Lys Leu Arg Ser Phe Leu Trp Pro Ile His Thr His Glu
 20 25 30
 Leu Lys Lys Val Leu Pro Met Phe Leu Met Phe Phe Cys Ile Thr Phe
 35 40 45
 Asn Tyr Thr Val Leu Arg Asp Thr Lys Asp Thr Leu Ile Val Gly Ala
 50 55 60
 Pro Gly Ser Gly Ala Glu Ala Ile Pro Phe Ile Lys Phe Trp Leu Val
 65 70 75 80
 Val Pro Cys Ala Ile Phe Met Leu Ile Tyr Ala Lys Leu Ser Asn
 85 90 95
 Ile Leu Ser Lys Gln Ala Leu Phe Tyr Ala Val Gly Thr Pro Phe Leu
 100 105 110
 Ile Phe Phe Ala Leu Phe Pro Thr Val Ile Tyr Pro Leu Arg Asp Val
 115 120 125
 Leu His Pro Thr Glu Phe Ala Asp Arg Leu Gln Ala Ile Leu Pro Pro
 130 135 140
 Gly Leu Leu Gly Leu Val Ala Ile Leu Arg Asn Trp Thr Phe Ala Ala
 145 150 155 160
 Phe Tyr Val Leu Ala Glu Leu Trp Gly Ser Val Met Leu Ser Leu Met
 165 170 175
 Phe Trp Gly Phe Ala Asn Glu Ile Thr Lys Ile His Glu Ala Lys Arg
 180 185 190
 Phe Tyr Ala Leu Phe Gly Ile Gly Ala Asn Ile Ser Leu Ala Ser
 195 200 205
 Gly Arg Ala Ile Val Trp Ala Ser Lys Leu Arg Ala Ser Val Ser Glu

210 215 220
 Gly Val Asp Pro Trp Gly Ile Ser Leu Arg Leu Leu Met Ala Met Thr
 225 230 235 240
 Ile Val Ser Gly Leu Val Leu Met Ala Ser Tyr Trp Trp Ile Asn Lys
 245 250 255
 Asn Val Leu Thr Asp Pro Arg Phe Tyr Asn Pro Glu Glu Met Gln Lys
 260 265 270
 Gly Lys Lys Gly Ala Lys Pro Lys Met Asn Met Lys Asp Ser Phe Leu
 275 280 285
 Tyr Leu Ala Arg Ser Pro Tyr Ile Leu Leu Leu Ala Leu Leu Val Ile
 290 295 300
 Ala Tyr Gly Ile Cys Ile Asn Leu Ile Glu Val Thr Trp Lys Ser Gln
 305 310 315 320
 Leu Lys Leu Gln Tyr Pro Asn Met Asn Asp Tyr Ser Glu Phe Met Gly
 325 330 335
 Asn Phe Ser Phe Trp Thr Gly Val Val Ser Val Leu Ile Met Leu Phe
 340 345 350
 Val Gly Gly Asn Val Ile Arg Lys Phe Gly Trp Leu Thr Gly Ala Leu
 355 360 365
 Val Thr Pro Val Met Val Leu Leu Thr Gly Ile Val Phe Phe Ala Leu
 370 375 380
 Val Ile Phe Arg Asn Gln Ala Ser Gly Leu Val Ala Met Phe Gly Thr
 385 390 395 400
 Thr Pro Leu Met Leu Ala Val Val Val Gly Ala Ile Gln Asn Ile Leu
 405 410 415
 Ser Lys Ser Thr Lys Tyr Ala Leu Phe Asp Ser Thr Lys Glu Met Ala
 420 425 430
 Tyr Ile Pro Leu Asp Gln Glu Gln Lys Val Lys Gly Lys Ala Ala Ile
 435 440 445
 Asp Val Val Ala Ala Arg Phe Gly Lys Ser Gly Gly Ala Leu Ile Gln
 450 455 460
 Gln Gly Leu Leu Val Ile Cys Gly Ser Ile Gly Ala Met Thr Pro Tyr
 465 470 475 480
 Leu Ala Val Ile Leu Leu Phe Ile Ile Ala Ile Trp Leu Val Ser Ala
 485 490 495
 Thr Lys Leu Asn Lys Leu Phe Leu Ala Gln Ser Ala Leu Lys Glu Gln
 500 505 510
 Glu Val Ala Gln Glu Asp Ser Ala Pro Ala Ser Ser
 515 520

<210>370

<211>448

<212>PRT

<213>Chlamydia pneumoniae

<400>370

Leu Pro Phe His Glu Phe Val Arg Phe Phe Gln Ser Lys Lys Val Ile
 1 5 10 15
 Ile Thr Val Arg His Ser Gly Cys Thr Met Lys Cys Ser Pro Leu Thr
 20 25 30
 Leu Val Pro His Ile Phe Leu Lys Asn Asp Cys Glu Cys His Arg Ser
 35 40 45
 Cys Ser Leu Lys Ile Arg Thr Ile Ala Arg Leu Ile Leu Gly Leu Val
 50 55 60
 Leu Ala Leu Val Ser Ala Leu Ser Phe Val Phe Leu Ala Ala Pro Ile
 65 70 75 80
 Ser Tyr Ala Ile Gly Gly Thr Leu Ala Leu Ala Ala Ile Val Ile Leu
 85 90 95
 Ile Ile Thr Leu Val Val Ala Leu Leu Ala Lys Ser Lys Val Leu Pro
 100 105 110
 Ile Pro Asn Glu Leu Gln Lys Ile Ile Tyr Asn Arg Tyr Pro Lys Glu
 115 120 125
 Val Phe Tyr Phe Val Lys Thr His Ser Leu Thr Val Asn Glu Leu Lys
 130 135 140
 Ile Phe Ile Asn Cys Trp Lys Ser Gly Thr Asp Leu Pro Pro Asn Leu
 145 150 155 160

His Lys Lys Ala Glu Phe Gly Ile Asp Ile Leu Lys S Ile Asp
 165 170 175
 Leu Thr Leu Phe Pro Glu Phe Glu Glu Ile Leu Leu Gln Asn Cys Pro
 180 185 190
 Leu Tyr Trp Leu Ser His Phe Ile Asp Lys Thr Glu Ser Val Ala Gly
 195 200 205
 Glu Ile Gly Leu Asn Lys Thr Gln Lys Val Tyr Gly Leu Leu Gly Pro
 210 215 220
 Leu Ala Phe His Lys Gly Tyr Thr Thr Ile Phe His Ser Tyr Thr Arg
 225 230 235 240
 Pro Leu Leu Thr Leu Ile Ser Glu Ser Gln Tyr Lys Phe Leu Tyr Ser
 245 250 255
 Lys Ala Ser Lys Asn Gln Trp Asp Ser Pro Ser Val Lys Lys Thr Cys
 260 265 270
 Glu Glu Ile Phe Lys Glu Leu Pro His Asn Met Ile Phe Arg Lys Asp
 275 280 285
 Val Gln Gly Ile Ser Gln Phe Leu Phe Leu Phe Phe Ser His Gly Ile
 290 295 300
 Thr Trp Glu Gln Ala Gln Met Ile Gln Leu Ile Asn Pro Asp Asn Trp
 305 310 315 320
 Lys Met Leu Cys Gln Phe Asp Lys Ala Gly Gly His Cys Ser Met Ala
 325 330 335
 Thr Phe Gly Gly Phe Leu Asn Thr Glu Thr Asn Met Phe Asp Pro Val
 340 345 350
 Ser Ser Asn Tyr Glu Pro Thr Val Asn Phe Met Thr Trp Lys Glu Leu
 355 360 365
 Lys Val Leu Leu Glu Lys Val Lys Glu Ser Pro Met His Pro Ala Ser
 370 375 380
 Ala Leu Val Gln Lys Ile Cys Val Asn Thr Thr His His Gln Asn Leu
 385 390 395 400
 Leu Lys Arg Trp Gln Phe Val Arg Asn Thr Ser Ser Gln Trp Thr Ser
 405 410 415
 Ser Leu Pro Gln Tyr Ala Phe His Ala Gln Thr Tyr Lys Leu Glu Lys
 420 425 430
 Lys Asn Arg Lys Gln Ser Pro Tyr Thr Ile Phe Pro Ile Arg Gly Val
 435 440 445

<210>371

<211>365

<212>PRT

<213>Chlamydia pneumoniae

<400>371

Ile Lys Glu Phe Asn His Tyr Ser Tyr Cys Tyr Gln Cys His Leu Thr
 1 5 10 15
 Leu Arg Thr Leu Ile Ala Phe Leu Cys Val Ala Ala Pro Val Ser Tyr
 20 25 30
 Ile Leu Ser Gly Ala Leu Leu Gly Leu Gly Leu Leu Ile Ala Leu Ile
 35 40 45
 Gly Val Ile Leu Gly Ile Lys Lys Ile Thr Pro Met Ile Ser Ser Lys
 50 55 60
 Glu Gln Val Phe Pro Gln Glu Leu Val Asn Arg Ile Arg Ala His Tyr
 65 70 75 80
 Pro Lys Phe Val Ser Asp Phe Val Ser Glu Ala Lys Pro Asn Leu Lys
 85 90 95
 Asp Leu Ile Ser Phe Ile Asp Leu Leu Asn Gln Leu His Ser Glu Val
 100 105 110
 Gly Ser Ser Thr Asn Tyr Asn Val Ser Glu Glu Leu Gln Gln Lys Ile
 115 120 125
 Asp Thr Phe Glu Gly Ile Ala Arg Leu Lys Asn Glu Val Arg Thr Ala
 130 135 140
 Ser Leu Lys Arg Leu Glu Ser Ala Ala Ser Ser Arg Pro Leu Phe Pro
 145 150 155 160
 Ser Leu Pro Lys Ile Leu Gln Lys Val Phe Pro Phe Phe Trp Leu Gly
 165 170 175
 Glu Phe Ile Ser Ala Gly Ser Lys Val Val Glu Leu His Arg Val Lys

180 185 190
 Lys Ile Gly Gly Ser Leu Glu Glu Asp Leu Ser Asp Tyr Ile Lys Pro
 195 200 205
 Glu Met Leu Pro Thr Tyr Trp Leu Ile Pro Leu Asp Phe Arg Pro Thr
 210 215 220
 Asn Ser Ser Ile Leu Asn Leu His Thr Leu Val Leu Ala Arg Val Leu
 225 230 235 240
 Thr Arg Asp Val Phe Gln His Leu Lys Tyr Ala Ala Leu Asn Gly Glu
 245 250 255
 Trp Asn Leu Asn His Ser Asp Leu Asn Thr Met Lys Gln Gln Leu Phe
 260 265 270
 Ala Lys Tyr His Ala Ala Tyr Gln Ser Tyr Lys His Leu Ser Gln Pro
 275 280 285
 Ser Leu Gln Glu Asp Glu Phe Tyr Asn Leu Leu Leu Cys Ile Phe Lys
 290 295 300
 His Arg Tyr Ser Trp Lys Gln Met Ser Leu Ile Lys Thr Val Pro Ala
 305 310 315 320
 Asp Leu Trp Glu Asn Leu Cys Cys Leu Thr Leu Asp His Thr Gly Arg
 325 330 335
 Pro Gln Asp Met Glu Phe Ala Ser Leu Ile Gly Thr Leu Tyr Thr Gln
 340 345 350
 Gly Leu Ile His Lys Glu Ser Glu His Phe Phe Leu His
 355 360 365

<210>372

<211>455

<212>PRT

<213>Chlamydia pneumoniae

<400>372

Ile Arg Asp Phe Tyr Leu His Ile Ile Tyr Thr Ala Phe Asn Arg Ser
 1 5 10 15
 Ile Ser Lys Glu Leu Ala Met Ser Met Thr Ile Val Pro His Ala Leu
 20 25 30
 Phe Lys Asn His Cys Glu Cys His Ser Thr Phe Pro Leu Ser Ser Arg
 35 40 45
 Thr Ile Val Arg Ile Ala Ile Ala Ser Leu Phe Cys Ile Gly Ala Leu
 50 55 60
 Ala Ala Leu Gly Cys Leu Ala Pro Pro Val Ser Tyr Ile Val Gly Ser
 65 70 75 80
 Val Leu Ala Phe Ile Ala Phe Val Ile Leu Ser Leu Val Ile Leu Ala
 85 90 95
 Leu Ile Phe Gly Glu Lys Lys Leu Pro Pro Thr Pro Arg Ile Ile Pro
 100 105 110
 Asp Arg Phe Thr His Val Ile Asp Glu Ala Tyr Gly Leu Ser Ile Ser
 115 120 125
 Ala Phe Val Arg Glu Gln Gln Val Thr Leu Ala Glu Phe Arg Gln Phe
 130 135 140
 Ser Thr Ala Leu Leu Cys Asn Ile Ser Pro Glu Glu Lys Ile Lys Gln
 145 150 155 160
 Leu Pro Ser Glu Leu Arg Ser Lys Val Glu Ser Phe Gly Ile Ser Arg
 165 170 175
 Leu Ala Gly Asp Leu Glu Lys Asn Asn Trp Pro Ile Phe Glu Asp Leu
 180 185 190
 Leu Ser Gln Thr Cys Pro Leu Tyr Trp Leu Gln Lys Phe Ile Ser Ala
 195 200 205
 Gly Asp Pro Gln Val Cys Arg Asp Leu Gly Val Pro Arg Glu Cys Tyr
 210 215 220
 Gly Tyr Tyr Trp Leu Gly Pro Leu Gly Tyr Ser Thr Ala Lys Ala Thr
 225 230 235 240
 Ile Phe Cys Lys Glu Thr His His Ile Leu Gln Gln Leu Thr Lys Glu
 245 250 255
 Asp Val Leu Leu Leu Lys Asn Lys Ala Leu Gln Glu Lys Trp Asp Thr
 260 265 270
 Asp Glu Val Lys Ala Ile Val Glu Arg Ile Tyr Thr Thr Tyr Thr Ala
 275 280 285

Arg Gly Thr Leu Lys ~~Met~~ Glu Ala Gly Gly Leu Thr Lys ~~Gly~~ Thr Ile
 290 295 300
 Ser Lys Glu Leu Leu Leu Ser Leu His Gly Tyr Ser Phe Asp Gln
 305 310 315 320
 Leu Gln Leu Ile Thr Gln Leu Pro Arg Asp Ala Trp Asp Trp Leu Cys
 325 330 335
 Phe Val Asp Asn Ser Thr Ala Tyr Asn Leu Gln Leu Cys Ala Leu Val
 340 345 350
 Gly Ala Leu Ser Ser Gln Asn Leu Leu Asp Glu Ser Ser Ile Asp Phe
 355 360 365
 Asp Val Asn Leu Gly Leu Tyr Val Ile Gln Asp Leu Lys Glu Ala Val
 370 375 380
 Gln Ala Phe Ser Ala Ser Asp Glu Pro Lys Lys Glu Leu Gly Lys Phe
 385 390 395 400
 Leu Leu Arg His Leu Ser Ser Val Ser Lys Arg Leu Glu Ser Val Leu
 405 410 415
 Arg Gln Gly Leu His Arg Ile Ala Leu Glu His Gly Asn Ala Arg Ala
 420 425 430
 Arg Val Tyr Asp Val Asn Phe Val Thr Gly Ala Arg Ile His Arg Lys
 435 440 445
 Thr Ser Ile Phe Phe Lys Asp
 450 455
 <210>373
 <211>291
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>373
 Tyr Ser Ser His Asn Gly Ala Ser Met Val Asn Ile Gln Pro Val Tyr
 1 5 10 15
 Arg Asn Thr Gln Val Asn Tyr Ser Gln Ala Thr Gln Phe Ser Val Cys
 20 25 30
 Gln Pro Ala Leu Ser Leu Ile Ile Val Ser Val Val Ala Val Leu
 35 40 45
 Ala Ile Val Ala Leu Val Cys Ser Gln Ser Leu Leu Ser Ile Glu Leu
 50 55 60
 Gly Thr Ala Leu Val Leu Val Ser Leu Ile Leu Phe Ala Ser Ala Met
 65 70 75 80
 Phe Met Ile Tyr Lys Met Arg Gln Glu Pro Lys Glu Leu Leu Ile Pro
 85 90 95
 Lys Lys Ile Met Glu Leu Ile Gln Glu His Tyr Pro Ser Ile Val Val
 100 105 110
 Asp Phe Ile Arg Asp Gln Glu Val Ser Ile Tyr Glu Ile His His Leu
 115 120 125
 Ile Ser Ile Leu Asn Lys Thr Asn Val Phe Asp Lys Ala Pro Val Tyr
 130 135 140
 Leu Gln Glu Lys Leu Leu Gln Phe Gly Ile Glu Lys Phe Lys Asp Val
 145 150 155 160
 His Pro Ser Lys Leu Pro Asn Phe Glu Glu Ile Leu Leu Gln His Cys
 165 170 175
 Pro Leu His Trp Leu Gly Arg Leu Val Tyr Pro Met Val Ser Asp Val
 180 185 190
 Thr Pro Gly Thr Tyr Gly Tyr Tyr Trp Cys Gly Pro Leu Gly Leu Tyr
 195 200 205
 Glu Asn Ala Pro Ser Leu Phe Glu Arg Arg Ser Leu Leu Leu Leu Lys
 210 215 220
 Lys Ile Ser Phe Gly Glu Phe Ala Leu Leu Glu Asp Gly Leu Lys Lys
 225 230 235 240
 Asn Thr Trp Ser Ser Ser Glu Leu Val Gln Ile Arg Gln Asn Leu Phe
 245 250 255
 Thr Arg Tyr Tyr Ala Asp Lys Glu Glu Val Asp Glu Ala Glu Leu Asn
 260 265 270
 Ala Asp Tyr Glu Gln Phe Asp Ser Leu Leu His Leu Ile Phe Ser His
 275 280 285
 Lys Leu Ser

290
 <210>374
 <211>607
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>374

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Thr Leu Gln Tyr Ile Leu Lys Glu Tyr Lys Ile Glu Asn Ile Arg Asn
 1           5           10           15
Phe Ser Ile Ile Ala His Ile Asp His Gly Lys Ser Thr Ile Ala Asp
          20           25           30
Arg Leu Leu Glu Ser Thr Ser Thr Val Glu Glu Arg Glu Met Arg Glu
          35           40           45
Gln Leu Leu Asp Ser Met Asp Leu Glu Arg Glu Arg Gly Ile Thr Ile
          50           55           60
Lys Ala His Pro Val Thr Met Thr Tyr Leu Tyr Glu Gly Glu Val Tyr
          65           70           75           80
Gln Leu Asn Leu Ile Asp Thr Pro Gly His Val Asp Phe Ser Tyr Glu
          85           90           95
Val Ser Arg Ser Leu Ser Ala Cys Glu Gly Ala Leu Leu Ile Val Asp
          100          105          110
Ala Ala Gln Gly Val Gln Ala Gln Ser Leu Ala Asn Val Tyr Leu Ala
          115          120          125
Leu Glu Arg Asp Leu Glu Ile Ile Pro Val Leu Asn Lys Ile Asp Leu
          130          135          140
Pro Ala Ala Asp Pro Val Arg Ile Ala Gln Gln Ile Glu Asp Tyr Ile
          145          150          155          160
Gly Leu Asp Thr Thr Asn Ile Ile Ala Cys Ser Ala Lys Thr Gly Gln
          165          170          175
Gly Ile Pro Ala Ile Leu Lys Ala Ile Ile Asp Leu Val Pro Pro Pro
          180          185          190
Lys Ala Pro Ala Glu Thr Glu Leu Lys Ala Leu Val Phe Asp Ser His
          195          200          205
Tyr Asp Pro Tyr Val Gly Ile Met Val Tyr Val Arg Ile Ile Ser Gly
          210          215          220
Glu Leu Lys Lys Gly Asp Arg Ile Thr Phe Met Ala Ala Lys Gly Ser
          225          230          235          240
Ser Phe Glu Val Leu Gly Ile Gly Ala Phe Leu Pro Lys Ala Thr Phe
          245          250          255
Ile Glu Gly Ser Leu Arg Pro Gly Gln Val Gly Phe Phe Ile Ala Asn
          260          265          270
Leu Lys Lys Val Lys Asp Val Lys Ile Gly Asp Thr Val Thr Lys Thr
          275          280          285
Lys His Pro Ala Lys Thr Pro Leu Glu Gly Phe Lys Glu Ile Asn Pro
          290          295          300
Val Val Phe Ala Gly Ile Tyr Pro Ile Asp Ser Ser Asp Phe Asp Thr
          305          310          315          320
Leu Lys Asp Ala Leu Gly Arg Leu Gln Leu Asn Asp Ser Ala Leu Thr
          325          330          335
Ile Glu Gln Glu Ser Ser His Ser Leu Gly Phe Gly Phe Arg Cys Gly
          340          345          350
Phe Leu Gly Leu Leu His Leu Glu Ile Ile Phe Glu Arg Ile Ile Arg
          355          360          365
Glu Phe Asp Leu Asp Ile Ile Ala Thr Ala Pro Ser Val Ile Tyr Lys
          370          375          380
Val Val Leu Lys Asn Gly Lys Val Leu Asp Ile Asp Asn Pro Ser Gly
          385          390          395          400
Tyr Pro Asp Pro Ala Ile Ile Glu His Val Glu Glu Pro Trp Val His
          405          410          415
Val Asn Ile Ile Thr Pro Gln Glu Tyr Leu Ser Asn Ile Met Asn Leu
          420          425          430
Cys Leu Asp Lys Arg Gly Ile Cys Val Lys Thr Glu Met Leu Asp Gln
          435          440          445
His Arg Leu Val Leu Ala Tyr Glu Leu Pro Leu Asn Glu Ile Val Ser
          450          455          460

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Asp Phe Asn Asp Lys Leu Lys Ser Val Thr Lys Gly Tyr Gly Ser Phe
 465 470 475 480
 Asp Tyr Arg Leu Gly Asp Tyr Arg Lys Gly Ser Ile Ile Lys Leu Glu
 485 490 495
 Val Leu Ile Asn Glu Glu Pro Ile Asp Ala Phe Ser Cys Leu Val His
 500 505 510
 Arg Asp Lys Ala Glu Ser Arg Gly Arg Ser Ile Cys Glu Lys Leu Val
 515 520 525
 Asp Val Ile Pro Gln Gln Leu Phe Lys Ile Pro Ile Gln Ala Ala Ile
 530 535 540
 Asn Lys Lys Val Ile Ala Arg Glu Thr Ile Arg Ala Leu Ser Lys Asn
 545 550 555 560
 Val Thr Ala Lys Cys Tyr Gly Gly Asp Ile Thr Arg Lys Arg Lys Leu
 565 570 575
 Trp Glu Lys Gln Lys Lys Gly Lys Lys Arg Met Lys Glu Phe Gly Lys
 580 585 590
 Val Ser Ile Pro Asn Thr Ala Phe Ile Glu Val Leu Lys Leu Asp
 595 600 605

<210>375

<211>332

<212>PRT

<213>Chlamydia pneumoniae

<400>375

Gly Val Ala Ile Ser Gly Ser Tyr Phe Ser Ile Asn Ser Ser Lys Ser
 1 5 10 15
 Thr Gly Pro Ser Leu Leu Phe Leu Gly Arg Asn Trp Arg Cys Arg Pro
 20 25 30
 Leu Cys Lys Gly Cys Ser Gln Trp Tyr Arg Ile Arg Arg Tyr Pro Val
 35 40 45
 Asp Met Arg Thr Tyr Gly Ile Leu Arg Asp Phe Leu Lys Leu Ser Ala
 50 55 60
 Thr Ala Val Ala Thr Ile Leu Lys Glu Trp Asn Thr Leu Glu Leu Glu
 65 70 75 80
 Ser Tyr Leu Ile Arg Ile Ala Ser Glu Val Leu Ala Leu Lys Asp Pro
 85 90 95
 Glu Gly Ile Pro Val Ile Asp Thr Ile Leu Asp Val Val Gly Gln Lys
 100 105 110
 Gly Thr Gly Lys Trp Thr Ala Ile Asp Ala Leu Asn Ser Gly Val Pro
 115 120 125
 Leu Ser Leu Ile Ile Gly Ala Val Leu Ala Arg Phe Leu Ser Ser Trp
 130 135 140
 Lys Glu Ile Arg Glu Gln Ala Ala Arg Asn Tyr Pro Gly Thr Pro Leu
 145 150 155 160
 Ile Phe Glu Met Pro His Asp Pro Ser Val Phe Ile Gln Asp Val Phe
 165 170 175
 His Ala Leu Tyr Ala Ser Lys Ile Ile Ser Tyr Ala Gln Gly Phe Met
 180 185 190
 Leu Leu Gly Glu Ala Ser Lys Glu Tyr Asn Trp Gly Leu Asp Leu Gly
 195 200 205
 Glu Ile Ala Leu Met Trp Arg Gly Gly Cys Ile Ile Gln Ser Ala Phe
 210 215 220
 Leu Asp Val Ile His Lys Gly Phe Ala Ala Asn Pro Glu Asn Thr Ser
 225 230 235 240
 Leu Ile Phe Gln Glu Tyr Phe Arg Gly Ala Leu Arg His Ala Glu Met
 245 250 255
 Gly Trp Arg Arg Thr Val Val Thr Ala Ile Gly Ala Gly Leu Pro Ile
 260 265 270
 Pro Cys Leu Ala Ala Ala Ile Thr Phe Tyr Asp Gly Tyr Arg Thr Ala
 275 280 285
 Ser Ser Ser Met Ser Leu Ala Gln Gly Leu Arg Asp Tyr Phe Gly Ala
 290 295 300
 His Thr Tyr Glu Arg Asn Asp Arg Pro Arg Gly Glu Phe Tyr His Thr
 305 310 315 320
 Asp Trp Val His Thr Lys Thr Thr Glu Arg Val Lys

<210>376

<211>204

<212>PRT

<213>Chlamydia pneumoniae

<400>376

Val Ala Leu Gln Thr Asn Ile Gly Leu Ile Gly Leu Ala Val Met Gly
 1 5 10 15
 Lys Asn Leu Val Leu Asn Met Ile Asp His Gly Phe Ser Val Ser Val
 20 25 30
 Tyr Asn Arg Thr Pro Glu Lys Thr Arg Asp Phe Leu Lys Glu Tyr Pro
 35 40 45
 Asn His Arg Glu Leu Val Gly Phe Glu Ser Leu Glu Asp Phe Val Asn
 50 55 60
 Ser Leu Glu Arg Pro Arg Lys Ile Met Leu Met Ile Gln Ala Gly Lys
 65 70 75 80
 Pro Val Asp Gln Ser Ile His Ala Leu Leu Pro Phe Leu Glu Pro Gly
 85 90 95
 Asp Val Ile Ile Asp Gly Gly Asn Ser Tyr Phe Lys Asp Ser Glu Arg
 100 105 110
 Arg Cys Lys Glu Leu Gln Glu Lys Gly Ile Leu Phe Leu Gly Val Gly
 115 120 125
 Ile Ser Gly Gly Glu Glu Gly Ala Arg His Gly Pro Ser Ile Met Pro
 130 135 140
 Gly Gly Asn Pro Glu Ala Trp Pro Leu Val Ala Pro Ile Phe Gln Ser
 145 150 155 160
 Ile Ala Ala Lys Val Gln Gly Arg Pro Cys Cys Ser Trp Val Gly Thr
 165 170 175
 Gly Gly Ala Gly His Tyr Val Lys Ala Val His Asn Gly Ile Glu Tyr
 180 185 190
 Gly Asp Ile Gln Leu Ile Cys Glu Leu Thr Val Ser
 195 200

<210>377

<211>422

<212>PRT

<213>Chlamydia pneumoniae

<400>377

Leu Ala Ile Leu Asn Tyr Val Arg Ser Leu Met Gln Ser Trp Leu Gln
 1 5 10 15
 Ser Leu Gln Glu Arg Asn Ile Leu Glu Asn Phe Thr Ala Gly Leu Glu
 20 25 30
 Ser Val Glu Gly Pro Ile Ala Ala Tyr Leu Gly Phe Asp Pro Thr Ala
 35 40 45
 Pro Ala Leu His Ile Gly His Trp Ile Gly Ile Cys Phe Leu Lys Arg
 50 55 60
 Leu Ala Ala Leu Gly Ile Thr Pro Ile Ala Leu Val Gly Gly Ala Thr
 65 70 75 80
 Gly Met Val Gly Asp Pro Ser Gly Lys Gln Ser Glu Arg Ser Leu Leu
 85 90 95
 Gln Thr Ser Glu Val Phe Asp Asn Ser Gln Lys Ile Thr Ala Cys Leu
 100 105 110
 Gln Arg Tyr Leu Pro Gly Val Thr Leu Val Asn Asn Ala Asp Trp Leu
 115 120 125
 Gln Glu Ile Ser Leu Ile Asp Phe Leu Arg Asp Ile Gly Lys His Phe
 130 135 140
 Arg Leu Gly Gln Met Leu Val Lys Asp Thr Ile Lys Gln Arg Val His
 145 150 155 160
 Ser Asp Glu Gly Ile Ser Tyr Thr Glu Phe Ser Tyr Leu Ile Leu Gln
 165 170 175
 Ser Tyr Asp Phe Tyr His Leu Phe Lys Asn Tyr Gly Thr Ile Leu Gln
 180 185 190
 Cys Gly Gly Ser Asp Gln Trp Gly Asn Ile Thr Ser Gly Ile Asp Phe
 195 200 205
 Ile Arg Arg Lys Gly Leu Gly Gln Ala Tyr Gly Leu Thr Tyr Pro Leu

210 215 220
 Leu Thr Asn Ala Gln Gly Lys Lys Ile Gly Lys Thr Glu Ser Gly Thr
 225 230 235 240
 Val Trp Leu Asp Ser Asp Leu Thr Ser Pro Phe Glu Leu Tyr Gln Tyr
 245 250 255
 Leu Leu Arg Leu Pro Asp Asp Thr Ile Pro Lys Ile Ala Arg Thr Leu
 260 265 270
 Thr Leu Leu Ser Asn Glu Glu Ile Gln Asp Ile Asp Arg Val Gln
 275 280 285
 Thr Asp Pro Val Ala Val Lys Glu Phe Val Ala Gln Asp Ile Leu Ser
 290 295 300
 Ala Ile His Gly Asp Leu Gly Leu Glu Glu Ala Leu Ser Val Thr Arg
 305 310 315 320
 Ser Met His Pro Gly Asn Leu Ser Ser Leu Ser Glu Lys Asp Phe His
 325 330 335
 Glu Leu Phe Ala Gly Gly Met Gly Ala Ser Leu Asp Lys Ser Glu Val
 340 345 350
 Leu Gly Lys Arg Trp Leu Asp Leu Phe Leu Val Leu Gly Leu Cys Lys
 355 360 365
 Ser Lys Gly Glu Ile Arg Arg Leu Ile Glu Gln Lys Gly Val Tyr Ile
 370 375 380
 Asn Asn Val Pro Ile Ala Asn Glu His Ser Val Cys Glu Glu Gln Asp
 385 390 395 400
 Ile Cys Tyr Gly His Tyr Val Leu Leu Ala Gln Gly Lys Lys Arg Lys
 405 410 415
 Leu Val Leu Tyr Leu Asn
 420

<210>378

<211>103

<212>PRT

<213>Chlamydia pneumoniae

<400>378

Val Ala Met Ser Thr Ser Pro Ile Gly Val Pro Ser Met Leu Asn Ala
 1 5 10 15
 Ala Thr Ser Leu Asn Ala Thr Thr Ser Lys Ala Pro Leu Pro Thr Ser
 20 25 30
 Thr Leu Ala Glu Arg Ile Lys Glu Trp Leu Pro Arg Ile Leu Leu Leu
 35 40 45
 Ile Val Gly Ala Ile Phe Thr Ile Ala Gly Cys Ile Val Met Ala Leu
 50 55 60
 Thr Lys Gln Ile Leu Tyr Gly Leu Leu Cys Val Val Gly Gly Leu Leu
 65 70 75 80
 Leu Ala Leu Gly Leu Leu Leu Lys Pro Glu Asn Cys Ile Tyr Arg Asn
 85 90 95
 Ala Glu Ser Leu Arg Glu Ala
 100

<210>379

<211>291

<212>PRT

<213>Chlamydia pneumoniae

<400>379

Leu Asp Lys Lys Lys Phe Val Lys Thr Gln Gln Thr Gln Asn Ile Ile
 1 5 10 15
 Glu Val Trp Asn Phe Tyr Trp Glu Thr Gln Glu Ile Glu Tyr Arg Asp
 20 25 30
 Ser Leu Ile Glu Phe Tyr Leu Pro Leu Val Lys Ser Val Val His Arg
 35 40 45
 Leu Ile Ser Gly Met Pro Ser His Val Lys Thr Glu Asp Leu Tyr Ala
 50 55 60
 Ser Gly Val Glu Gly Leu Val Arg Ala Val Glu Arg Tyr Asn Pro Glu
 65 70 75 80
 Arg Ser Arg Arg Phe Glu Gly Tyr Ala Val Phe Leu Ile Lys Ala Ala
 85 90 95
 Ile Ile Asp Asp Leu Arg Lys Gln Asp Trp Val Pro Arg Ser Val His

100 105 110
 Gln Lys Ala Asn Lys Leu Ser Gly Ala Met Asp Ser Leu Arg Gln Ser
 115 120 125
 Leu Gly Lys Glu Pro Thr Asp Leu Glu Leu Cys Glu Tyr Leu Asn Ile
 130 135 140
 Ser Gln Gln Glu Leu Ser Gly Trp Phe Val Ser Ala Arg Pro Ala Leu
 145 150 155 160
 Ile Val Ser Leu Asn Glu Glu Trp Pro Ser Gln Ser Asp Glu Gly Ala
 165 170 175
 Gly Met Ala Leu Glu Glu Arg Ile Pro Asp Glu Arg Ala Glu Thr Gly
 180 185 190
 Tyr Asp Val Val Asp Lys Gln Glu Phe Ser Leu Cys Leu Ala Asn Ala
 195 200 205
 Ile Gln Glu Leu Glu Glu Lys Glu Arg Lys Val Met Ala Leu Tyr Tyr
 210 215 220
 Tyr Glu Glu Leu Val Leu Lys Glu Ile Gly Lys Val Leu Gly Val Ser
 225 230 235 240
 Glu Ser Arg Val Ser Gln Ile His Ser Lys Ala Leu Leu Lys Leu Arg
 245 250 255
 Ala Asp Ser Leu His Phe Asp Lys Tyr Ser Ser Gln Val Leu Arg Ala
 260 265 270
 Val Leu Glu Leu Gly Glu Ala Leu Leu Arg His Arg Val Ile Arg Lys
 275 280 285
 Glu Phe Val
 290
 <210>380
 <211>544
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>380
 Phe Cys Ile Val Phe Thr Asn Gly Leu Leu Gly Leu Tyr Leu Lys Phe
 1 5 10 15
 Lys Gln Phe Ser Glu Val Phe Pro Pro Phe Phe Leu Tyr Leu Cys Leu
 20 25 30
 Leu Arg Leu Gly Leu Asn Leu Ala Ser Thr Arg Trp Ile Val Ser Ser
 35 40 45
 Gly Thr Ala Ser Ser Leu Ile Val Ser Leu Gly Ser Phe Phe Ser Leu
 50 55 60
 Gly Ser Leu Trp Ala Ala Thr Phe Ala Cys Leu Leu Leu Phe Phe Val
 65 70 75 80
 Asn Phe Leu Met Val Ser Lys Gly Ser Glu Arg Ile Ala Glu Val Arg
 85 90 95
 Ser Arg Phe Phe Leu Glu Ala Leu Pro Ala Lys Gln Met Ala Leu Asp
 100 105 110
 Ser Asp Leu Val Ser Gly Arg Ala Ser Tyr Lys Ala Val Lys Lys Gln
 115 120 125
 Lys Asn Ala Leu Ile Glu Glu Gly Asp Phe Phe Ser Ala Met Glu Gly
 130 135 140
 Val Phe Arg Phe Val Lys Gly Asp Ala Ile Ile Ser Cys Ile Leu Leu
 145 150 155 160
 Leu Val Asn Val Val Ser Val Thr Cys Leu Tyr Tyr Thr Ser Gly Tyr
 165 170 175
 Ala Leu Glu Gln Met Trp Phe Thr Val Leu Gly Asp Ala Leu Val Ser
 180 185 190
 Gln Val Pro Ala Leu Leu Thr Ser Cys Ala Ala Ala Thr Leu Ile Ser
 195 200 205
 Lys Ile Asp Lys Glu Glu Ser Leu Leu Asn Tyr Leu Phe Glu Tyr Tyr
 210 215 220
 Lys Gln Leu Arg Gln His Phe Arg Val Val Ser Leu Leu Ile Phe Ser
 225 230 235 240
 Leu Cys Cys Ile Pro Ser Ser Pro Lys Phe Pro Ile Val Leu Leu Ala
 245 250 255
 Ser Leu Leu Trp Leu Ala Tyr Arg Lys Glu Glu Pro Ala Ser Glu Asp
 260 265 270

Ser Cys Ile Glu Arg Ala Phe Ser Tyr Val Glu Gly Ala Cys Pro Lys
 275 280 285
 Glu Gln Glu Ser Gln Phe Tyr Gln Val Tyr Arg Ala Ala Ser Glu Glu
 290 295 300
 Val Phe Glu Asp Leu Gly Val Arg Leu Pro Val Leu Thr Ser Leu Arg
 305 310 315 320
 Ile Glu Glu Arg Pro Trp Leu Arg Val Phe Gly Gln Asn Val Tyr Leu
 325 330 335
 Asp Glu Met Thr Pro Glu Ala Val Leu Pro Phe Leu Arg Asn Ile Ala
 340 345 350
 His Glu Ala Leu Asn Ala Glu Val Val Gln Lys Tyr Leu Glu Glu Ser
 355 360 365
 Glu Arg Val Phe Gly Ile Ala Val Glu Asp Ile Val Pro Lys Lys Ile
 370 375 380
 Ser Leu Ser Ser Leu Val Val Leu Ser Arg Leu Leu Val Arg Glu Arg
 385 390 395 400
 Val Ser Leu Lys Leu Xaa Pro Lys Ile Leu Glu Ala Val Ala Val Tyr
 405 410 415
 Gln Asn Ser Gly Asp Ser Leu Glu Ile Leu Ala Glu Lys Val Arg Lys
 420 425 430
 Ser Leu Gly Tyr Trp Ile Gly Arg Ser Leu Trp Asp Gln Lys Gln Thr
 435 440 445
 Leu Glu Val Ile Thr Ile Asp Phe His Val Glu Glu Leu Ile Asn Ser
 450 455 460
 Ser Tyr Ser Lys Ser Asn Pro Val Met Gln Glu Asn Val Ile Arg Arg
 465 470 475 480
 Val Asp Ser Leu Leu Glu Arg Ser Val Phe Lys Asp Phe Arg Ala Ile
 485 490 495
 Val Thr Ser Cys Glu Thr Arg Phe Glu Met Lys Lys Met Leu Asp Pro
 500 505 510
 His Phe Pro Asp Leu Leu Val Leu Ser His Asp Glu Leu Pro Lys Glu
 515 520 525
 Ile Pro Ile Ser Phe Leu Gly Ile Val Ser Asp Glu Val Leu Val Pro
 530 535 540

<210>381

<211>91

<212>PRT

<213>Chlamydia pneumoniae

<400>381

Met Ala Lys Leu Val Ile Thr Ser Asp Asp Glu Gln Gln Glu Phe Glu
 1 5 10 15
 Leu Glu Asp Asn Ser Glu Ile Ala Glu Pro Cys Glu Ser Met Gly Ile
 20 25 30
 Pro Phe Ala Cys Thr Glu Gly Val Cys Gly Thr Cys Val Ile Glu Val
 35 40 45
 Leu Glu Gly Arg Glu Asn Leu Ser Glu Phe Thr Glu Pro Glu Tyr Asp
 50 55 60
 Phe Leu Gly Glu Pro Glu Asp Ser Asn Glu Arg Leu Ala Cys Gln Cys
 65 70 75 80
 Arg Ile Lys Gly Gly Cys Val Lys Val Thr Phe
 85 90

<210>382

<211>191

<212>PRT

<213>Chlamydia pneumoniae

<400>382

Phe Lys Gly Thr Gln Val Asn Ser Leu Ile Met Ala Thr Ile Ser Pro
 1 5 10 15
 Ile Ser Leu Thr Val Asp His Pro Leu Val Asp Thr Lys Lys Lys Ser
 20 25 30
 Cys Ser Asn Phe Asp Lys Ile Gln Ser Arg Ile Leu Leu Ile Thr Ala
 35 40 45
 Ile Phe Ala Val Leu Val Thr Ile Gly Thr Leu Leu Ile Gly Leu Leu
 50 55 60

Leu Asn Ile Pro Val Ile Tyr Phe Leu Thr Gly Ile Ser Phe Ile Ala
 65 70 75 80
 Val Val Leu Ser Asn Phe Ile Leu Tyr Lys Arg Ala Thr Thr Leu Leu
 85 90 95
 Lys Pro Arg Ala Cys Gly Lys His Lys Glu Ile Lys Pro Lys Arg Val
 100 105 110
 Ser Thr Asn Leu Gln Tyr Ser Ser Ile Ser Ile Ala Ile Asn Arg Ser
 115 120 125
 Lys Glu Asn Trp Glu His Gln Pro Lys Asp Leu Gln Asn Leu Pro Ala
 130 135 140
 Pro Ser Ala Leu Leu Thr Asp Asn Pro Tyr Glu Ile Trp Lys Ala Lys
 145 150 155 160
 His Ser Leu Phe Ser Leu Val Ser Leu Leu Pro Gly Gly Asn Pro Lys
 165 170 175
 Thr Ser Leu Lys Phe Lys Leu Pro Lys Ile Tyr Glu Arg Leu Cys
 180 185 190

<210>383

<211>158

<212>PRT

<213>Chlamydia pneumoniae

<400>383

Leu Lys Lys Pro Arg Lys Met Arg Leu Tyr Pro Pro Tyr Val Asp Thr
 1 5 10 15
 Thr Pro Ser Pro Lys Ser Leu Leu Asn Glu Ala Ile Gln Glu Thr Arg
 20 25 30
 Val Glu Ile Asn Thr Glu Leu Pro Ala Gly Asp Ser Gly Glu Arg Leu
 35 40 45
 Tyr Trp Gln Pro Asp Phe Arg Gly Arg Val Phe Leu Pro Gln Ile Pro
 50 55 60
 Thr Thr Pro Glu Ala Ile Tyr Gln Tyr Tyr Tyr Ala Leu Tyr Val Thr
 65 70 75 80
 Tyr Ile Gln Thr Ala Ile Asn Thr Asn Thr Gln Ile Ile Gln Ile Pro
 85 90 95
 Leu Tyr Ser Leu Arg Glu His Leu Tyr Ser Arg Glu Leu Pro Pro Gln
 100 105 110
 Ser Arg Met Gln Gln Ser Leu Ala Met Ile Thr Ala Val Lys Tyr Met
 115 120 125
 Ala Glu Leu His Pro Glu Tyr Pro Leu Thr Ile Ala Cys Val Glu Arg
 130 135 140
 Ser Leu Ala Gln Leu Pro Gln Glu Ser Ile Glu Asp Leu Ser
 145 150 155

<210>384

<211>155

<212>PRT

<213>Chlamydia pneumoniae

<400>384

Met Gly Tyr Leu Pro Val Ser Ala Thr Asp Val Leu Phe Glu Ser Pro
 1 5 10 15
 Ala Ala Pro Leu Ile Asn Ser Ala Asn Thr Gln Asn Gln Lys Leu Ile
 20 25 30
 Glu Leu Lys Gly Lys Gln Gln Ala Glu Ser Ser Pro Arg Thr Ile Thr
 35 40 45
 Ser Val Ile Leu Glu Val Leu Leu Val Ile Gly Cys Cys Leu Ile Val
 50 55 60
 Leu Ser Leu Leu Ala Ile Arg Pro Ala Leu Gln Phe Thr Leu Glu Thr
 65 70 75 80
 Gly His Pro Ala Ala Ile Ala Val Leu Ala Val Ser Gly Thr Ile Leu
 85 90 95
 Leu Val Ala Val Ile Ile Leu Phe Cys Phe Leu Ala Ala Val Pro Phe
 100 105 110
 Ala Ala Lys Lys Thr Tyr Lys Tyr Val Lys Thr Val Asp Asp Tyr Ala
 115 120 125
 Ser Trp His Ser His Gln Gln Thr Pro Thr Leu Gly Thr Ile Phe Ser
 130 135 140

Gly Ile Val Tyr Ala Leu Ser Gln Ala Gln Leu
 145 150 155

<210>385

<211>253

<212>PRT

<213>Chlamydia pneumoniae

<400>385

Ser Phe Pro Leu Asn Arg Tyr Phe Met Thr Lys Thr Thr Ser Ile Pro
 1 5 10 15
 Asp Val His Glu Asn Gln Ser His Leu Ser Val Asp Glu Arg Leu Ile
 20 25 30
 Ser Glu Ser Pro Val Leu Thr Lys Lys Glu Val Ile Ala Lys Ile Ile
 35 40 45
 Lys Leu Thr Ala Leu Ile Leu Ala Leu Ala Ile Ala Val Gly Thr Ala
 50 55 60
 Val Val Ala Gly Val Leu Gly Met Pro Leu Met Ala Ile Ala Thr Gly
 65 70 75 80
 Ala Ala Leu Leu Ala Ala Val Val Leu Ser Cys Leu Leu Leu Arg Arg
 85 90 95
 Arg Glu Pro Ser Lys Pro Thr Glu Glu Leu Leu Gly Pro Gln Lys His
 100 105 110
 Val Pro Lys Asp Ile Ala Ala Gln Val Gln Pro Ser Val Pro Leu Asp
 115 120 125
 Tyr Gln Lys Leu Leu Arg Asn Glu Trp Thr Leu Val Asn Thr Leu Ser
 130 135 140
 Glu Ile Asn Ile Ser Trp Thr Leu Gln Asp Pro Asn Gln Arg Tyr Tyr
 145 150 155 160
 Val Trp Glu His Gln Gly Ala Pro Ile Thr Leu Val Ala Thr Thr Gly
 165 170 175
 Asp Ile Ala Lys Pro Arg Leu Lys Thr Ser Gly Arg Val Met Ile Val
 180 185 190
 Asn Ala Ala Asn Ser Asn Met Gln Ser Gly Gly Ala Gly Thr Asn Ala
 195 200 205
 Ala Leu Ser Ala Ala Thr His Pro Thr Cys Trp Asn Asn Thr Arg Thr
 210 215 220
 Ser Gly Gly Lys Ile Asn Thr Gly Lys Gly Leu Ser Val Gly Glu Cys
 225 230 235 240
 Arg Ser Ala Pro Trp Ile Asn Arg Asp Trp Thr Asn Lys
 245 250

<210>386

<211>114

<212>PRT

<213>Chlamydia pneumoniae

<400>386

Thr Leu Ala Lys Asp Tyr Leu Trp Val Asn Ala Ala Gln His Pro Gly
 1 5 10 15
 Ser Ile Glu Thr Gly Arg Ile Asn Asp Thr Asn Pro Gly Glu Ala His
 20 25 30
 Phe Leu Ala Gln Leu Leu Gly Pro Lys Tyr Glu Gly Glu Leu Lys Ala
 35 40 45
 His Pro Glu Lys Leu Ser Asn Val Ile Lys Lys Ala Tyr Leu Asn Cys
 50 55 60
 Phe Asp Glu Ala Leu Asn Asn Gln Ala Thr Val Val Gln Val Pro Leu
 65 70 75 80
 Ile Ser Ser Ser Ile Tyr Ser Pro Gly Gly Lys Leu Glu Leu Glu Pro
 85 90 95
 Val Asn Gln Thr Lys Pro Asn Ser Ser Ala Tyr Lys Leu Tyr His Ile
 100 105 110
 Arg Thr

<210>387

<211>406

<212>PRT

<213>Chlamydia pneumoniae

<400>387

Asn Ile Met Thr Asp Ser Asn Pro Leu Pro Ser Tyr Thr Asp Ala Ser
1 5 10 15
Leu Tyr Arg Thr Pro Ala Lys His Ser Tyr Pro Ile Arg Leu Pro Leu
20 25 30
Asn Arg Thr Asp Arg Ile Glu Lys Ile Leu Lys Ile Val Thr Leu Thr
35 40 45
Leu Ala Leu Ala Cys Ala Leu Gly Phe Ser Ile Ala Ala Gly Ile Leu
50 55 60
Ala Met Pro Ile Phe Ser Ala Val Val Val Ile Thr Leu Ala Ile Ala
65 70 75 80
Ala Val Ser Leu Tyr Ser Leu Leu Lys Lys Pro Lys Leu Tyr Glu Ile
85 90 95
Leu Pro Gln Ile Glu Pro Glu Ser Glu Gln Ser Ser Leu Ser Pro Ser
100 105 110
Pro Gln Pro Pro Glu Gln Gln Asp Leu Pro Leu Gln Ile Asp Pro Leu
115 120 125
Pro Asp Pro Glu Ser Leu Pro Glu Val Ser Leu Ala Asp Leu Thr Thr
130 135 140
Pro Pro Glu Glu Leu Thr Ala Ile Thr Val Thr Pro Gly Tyr Glu Ala
145 150 155 160
Leu Leu Glu Gln Asn Trp Asp Leu Leu Pro Ser Leu Ala Ala Val Asp
165 170 175
Pro Ser Phe Thr Thr Glu Thr Pro Gln Gln Pro Cys Phe Ile Trp Lys
180 185 190
Leu Lys Asp Ser Lys Leu Ile Phe Ile Ser Thr Ser Gly Asp Ile Ala
195 200 205
Val Pro Arg Ile Lys Thr Gln Gly Arg Val Met Ile Val Asn Ala Ala
210 215 220
Asn Glu Asn Ile Ser Arg Glu Gly Gly Gly Thr Asn Lys Ala Leu Ser
225 230 235 240
Leu Ala Thr Ser Leu Gln Cys Trp Asn Ala Ser Arg Leu Pro Arg Ala
245 250 255
His Ser Arg Ser Gly Ser Gln Leu Gln Pro Gly Glu Cys Arg Ser Ala
260 265 270
Lys Trp Glu Asn Ser Asp His Thr Ser Asn Asp His Val Pro Gly Lys
275 280 285
Ala His Phe Leu Ala Gln Leu Leu Gly Pro Glu Ala Ala Lys Cys Asn
290 295 300
Asn Asp Pro Lys Gln Ala Phe Glu Val Ser Lys Lys Ala Phe His Asn
305 310 315 320
Leu Phe Gln Glu Ala Glu Ile Ile Gly Val Asp Val Ile Gln Leu Pro
325 330 335
Leu Ile Gly Cys Asn Leu Phe Ala Pro Ser Arg Leu Leu Asn Leu Gly
340 345 350
Lys Thr Arg Ala Glu Trp Ile Glu Ala Ile Lys Leu Ala Leu Ile Thr
355 360 365
Ser Leu Gln Asp Phe Gly Trp Glu Gln Asp Asn Gln Glu Glu Gln Lys
370 375 380
Ile Ile Ile Leu Thr Asp Lys Asp Gln Pro Pro Ile Ile Pro Pro Arg
385 390 395 400
Phe Asp Leu Thr Thr Pro
405

<210>388

<211>386

<212>PRT

<213>Chlamydia pneumoniae

<400>388

Lys Arg Ile Phe Phe Lys Leu Phe Val Phe Tyr Leu Lys Ser Phe Met
1 5 10 15
Ser Thr Thr Glu Pro Asn Leu Thr Asn Val Asn Leu Thr Met Leu Ile
20 25 30
Ser Ser Glu Ser Met Pro Thr Gln Leu Ala Ser His Lys Leu Lys Gly
35 40 45

Leu Asp Leu Val Ala Phe Ile Leu Ile Ile Gly Ile Ala Val Ser Ser
 50 55 60
 Gly Thr Ala Ala Ile Ile Leu Gly Ile Pro Leu Leu Phe Ile Leu Thr
 65 70 75 80
 Ala Leu Ala Val Leu Ala Phe Ser Ile Leu Leu Tyr Phe Leu Leu Arg
 85 90 95
 Glu Pro Lys Ser Pro Ile Ser Val Thr His Gln Pro Thr Pro Ile Ile
 100 105 110
 Lys Asp Thr Asp Leu Pro Pro Val Pro Pro Leu Ala Leu Thr Pro Val
 115 120 125
 Pro Thr Glu Ala Val Leu Glu Glu Pro Pro Leu Pro Ser Pro Arg Thr
 130 135 140
 His Gln Thr Leu Leu Gln Glu Asn Trp Asp Arg Ile Pro Asp Leu Gln
 145 150 155 160
 Ala Asn Thr Asp Met Pro Phe Ile Ala Ala Asp Asn Gln Thr Gly Tyr
 165 170 175
 Ala Trp His Leu Lys Asn Ser Asn Leu Thr Leu Ile Ser Thr Leu Gly
 180 185 190
 Pro Ile Glu Lys Pro Arg Tyr Lys Thr Gln Gly Ile Val Met Ile Val
 195 200 205
 Asn Ala Ala Thr Pro Asn Met Ala Asn Asn Val Lys Gly Thr Ser Leu
 210 215 220
 Ala Leu Ala Lys Ala Thr Ser Val Arg Cys Trp Glu Asn Ser Lys Lys
 225 230 235 240
 Ser Pro Asp Pro Leu Arg Ser Lys Gln Pro Leu Gln Leu Gly Glu Cys
 245 250 255
 Arg Ser Ala Lys Trp Glu Asn Leu Asn Gly Thr Thr Asn Ala Gly Lys
 260 265 270
 Ala Gly Leu Pro Gln Phe Leu Gly Gln Leu Leu Gly Pro Lys Ala Ser
 275 280 285
 Asp Tyr Asn Tyr Asn Pro Asn Asp Ala Phe Thr Phe Cys Arg Gln Ala
 290 295 300
 Tyr Leu Asn Cys Leu Asn Glu Ala Lys Arg Arg Lys Thr Thr Val Val
 305 310 315 320
 Gln Leu Pro Leu Leu Ser Ser His Phe Pro Gly Ser Pro Lys Asp Glu
 325 330 335
 Glu Thr Thr Ser Leu Arg Leu Gln Trp Ile Asp Gly Val Lys Leu Ala
 340 345 350
 Leu Ile Asp Ala Leu Gln Thr Phe Gly Ser Glu Ala Glu Asn Gln Asn
 355 360 365
 Gln Pro Trp Val Ile Ile Leu Thr Thr Leu Ala Arg His Pro Leu Ile
 370 375 380
 Thr Pro
 385

<210>389

<211>621

<212>PRT

<213>Chlamydia pneumoniae

<400>389

Asn Ser Glu Ile Phe Glu Ile Phe Met Thr Leu Ile Thr Pro Ala Ile
 1 5 10 15
 Asn Ser Ser Arg Arg Lys Thr His Thr Val Arg Ile Gly Asn Leu Tyr
 20 25 30
 Ile Gly Ser Asp His Ser Ile Lys Thr Gln Ser Met Thr Thr Thr Leu
 35 40 45
 Thr Thr Asp Ile Asp Ser Thr Val Glu Gln Ile Tyr Ala Leu Ala Glu
 50 55 60
 His Asn Cys Asp Ile Val Arg Val Thr Val Gln Gly Ile Lys Glu Ala
 65 70 75 80
 Gln Ala Cys Glu Lys Ile Lys Glu Arg Leu Ile Ala Leu Gly Leu Asn
 85 90 95
 Ile Pro Leu Val Ala Asp Ile His Phe Phe Pro Gln Ala Ala Met Leu
 100 105 110
 Val Ala Asp Phe Ala Asp Lys Val Arg Ile Asn Pro Gly Asn Tyr Ile

115 120
 Asp Lys Arg Asn Met Phe Lys Gly Thr Lys Ile Tyr Thr Glu Ala Ser
 130 135 140
 Tyr Ala Gln Ser Leu Leu Arg Leu Glu Glu Lys Phe Ala Pro Leu Val
 145 150 155 160
 Glu Lys Cys Lys Arg Leu Gly Lys Ala Met Arg Ile Gly Val Asn His
 165 170 175
 Gly Ser Leu Ser Glu Arg Ile Met Gln Lys Tyr Gly Asp Thr Ile Glu
 180 185 190
 Gly Met Val Ala Ser Ala Ile Glu Tyr Ile Ala Val Cys Glu Lys Leu
 195 200 205
 Asn Tyr Arg Asp Val Val Phe Ser Met Lys Ser Ser Asn Pro Lys Ile
 210 215 220
 Met Val Thr Ala Tyr Arg Gln Leu Ala Lys Asp Leu Asp Ala Arg Gly
 225 230 235 240
 Trp Leu Tyr Pro Leu His Leu Gly Val Thr Glu Ala Gly Met Gly Val
 245 250 255
 Asp Gly Ile Ile Lys Ser Ala Val Gly Ile Gly Thr Leu Leu Ala Glu
 260 265 270
 Gly Leu Gly Asp Thr Ile Arg Cys Ser Leu Thr Gly Cys Pro Thr Thr
 275 280 285
 Glu Ile Pro Val Cys Asp Ser Leu Leu Arg His Thr Lys Ile Tyr Leu
 290 295 300
 Asp Leu Pro Glu Lys Lys Asn Pro Phe Ser Leu Gln His Ser Glu Asn
 305 310 315 320
 Phe Val Ser Ala Ala Glu Lys Pro Ala Lys Thr Thr Leu Trp Gly Asp
 325 330 335
 Val Tyr Gly Val Phe Leu Lys Leu Tyr Pro His His Leu Thr Asp Phe
 340 345 350
 Thr Pro Glu Glu Leu Leu Glu His Leu Gly Val Asn Pro Val Thr Lys
 355 360 365
 Glu Lys Ala Phe Thr Thr Pro Glu Gly Val Val Val Pro Pro Glu Leu
 370 375 380
 Lys Asp Ala Pro Ile Thr Asp Val Leu Arg Glu His Phe Leu Val Phe
 385 390 395 400
 His His His Gln Val Pro Cys Leu Tyr Glu His Asn Glu Glu Ile Trp
 405 410 415
 Asp Ser Pro Ala Val His Gln Ala Pro Phe Val His Phe His Ala Ser
 420 425 430
 Asp Pro Phe Ile His Thr Ser Arg Asp Phe Phe Glu Lys Gln Gly His
 435 440 445
 Gln Gly Lys Pro Thr Lys Leu Val Phe Ser Arg Asp Phe Asp Asn Lys
 450 455 460
 Glu Glu Ala Ala Ile Ser Ile Ala Thr Glu Phe Gly Ala Leu Leu Leu
 465 470 475 480
 Asp Gly Leu Gly Glu Ala Val Val Leu Asp Leu Pro Asn Leu Pro Leu
 485 490 495
 Gln Asp Val Leu Lys Ile Ala Phe Gly Thr Leu Gln Asn Ala Gly Val
 500 505 510
 Arg Leu Val Lys Thr Glu Tyr Ile Ser Cys Pro Met Cys Gly Arg Thr
 515 520 525
 Leu Phe Asp Leu Glu Glu Val Thr Thr Arg Ile Arg Lys Arg Thr Gln
 530 535 540
 His Leu Pro Gly Leu Lys Ile Ala Ile Met Gly Cys Ile Val Asn Gly
 545 550 555 560
 Pro Gly Glu Met Ala Asp Ala Asp Phe Gly Phe Val Gly Ser Lys Thr
 565 570 575
 Gly Met Ile Asp Leu Tyr Val Lys His Thr Cys Val Lys Ala His Ile
 580 585 590
 Pro Met Glu Asp Ala Glu Glu Glu Leu Ile Arg Leu Leu Gln Glu His
 595 600 605
 Gly Val Trp Lys Asp Pro Glu Glu Thr Lys Leu Thr Val
 610 615 620
 <210>390

<211>251

<212>PRT

<213>Chlamydia pneumoniae

<400>390

Val Asp Ser Met Thr Leu Ser Phe His Thr His Pro Leu Asn Tyr Trp
 1 5 10 15
 Thr Phe Glu Glu Phe Asp Gly Leu Pro Ile Arg His Gly Val Phe Ser
 20 25 30
 Lys Gln Lys Asp Ala Glu Gly Thr Val Phe Ala Ala Lys Asn Pro Glu
 35 40 45
 Ile Ala Ser Ala Leu Gln Ser Pro Lys Tyr Cys Asp Leu His Gln Arg
 50 55 60
 His Gly Thr Ser Val Arg Cys Val Thr Pro Thr Ser Pro Thr Tyr Gln
 65 70 75 80
 Pro Ala Asp Gly Leu Cys Thr Gln Ser Pro Leu Leu Ser Leu His Ile
 85 90 95
 Arg His Ser Asp Cys Gln Ala Ala Ile Phe Tyr Asp Arg Glu His His
 100 105 110
 Ala Ile Ala Asn Val His Ser Gly Trp Arg Gly Leu Leu Gly Asn Ile
 115 120 125
 Tyr Ala Val Thr Val Gly Thr Met Lys Lys Leu Phe His Thr Lys Pro
 130 135 140
 Gln Asp Leu Phe Val Ala Ile Gly Pro Ser Ile Gly Pro Asp Tyr Ala
 145 150 155 160
 Ile Tyr Pro Asp Tyr Ala Thr Leu Phe Pro Arg Ser Phe Leu Pro Phe
 165 170 175
 Met Asn Pro Lys Asn His Phe Asp Leu Arg Ala Ile Ala Arg Lys Gln
 180 185 190
 Leu Thr Asn Leu Gly Ile Ser Lys Asp Arg Ile Phe Ile Ser Asp Leu
 195 200 205
 Cys Thr Tyr Thr Glu His Asp Ala Phe Phe Ser Ser Arg Tyr Leu Ala
 210 215 220
 His His Pro Asp Pro Asn Leu Thr Gly Gln His Ser Lys Asn Arg Asn
 225 230 235 240
 Asn Val Thr Ala Val Leu Leu Leu Pro Arg Asp
 245 250

<210>391

<211>168

<212>PRT

<213>Chlamydia pneumoniae

<400>391

Arg Leu Ser Met Lys Leu Gly Ala Ser Thr Asn His Lys Val His Glu
 1 5 10 15
 Pro Val Lys Pro Lys Lys Ala Lys Leu Ala Glu Ile Glu Ala Xaa Lys
 20 25 30
 Thr Gln Ala Thr Glu Gly Thr Leu Arg Ser Lys Ser Leu Ala Leu Gln
 35 40 45
 Ile Ala Arg Ala Val Leu Tyr Ile Leu Phe Ala Ala Leu Met Leu Ala
 50 55 60
 Ala Gly Ile Thr Phe Val Thr Phe Glu Ala Leu Gly Phe Pro Leu Ile
 65 70 75 80
 Gln Ala Tyr Ser Ile Ala Gly Ile Ile Thr Leu Val Gly Leu Ala Ile
 85 90 95
 Gly Leu Val Leu Leu Ile Leu Ser Leu Leu Pro Lys Glu Asp Glu Glu
 100 105 110
 Ala Asp Ala Leu Ser Arg Asn Ala Leu Leu Pro Leu Thr Ile Ile Val
 115 120 125
 Ile Glu Gln Gln Pro Ile Thr Pro Lys Pro Glu Ile Pro Tyr Ser Tyr
 130 135 140
 Leu Thr Lys Leu Ala Leu Leu Thr Ser Leu Phe Leu Thr Leu Arg Arg
 145 150 155 160
 Ser Ser Ser Gln Arg Lys Thr His
 165

<210>392

<211>205

<212>PRT

<213>Chlamydia pneumoniae

<400>392

Phe Lys Val Val Thr Ala Lys Ala Pro Asn Leu Thr Glu Ile Arg Asp
1 5 10 15
His Gly Ala Arg Val Pro Ser Leu Phe Leu Leu Ser Pro Glu Thr Ser
20 25 30
His Trp Lys Gly Asp Lys Glu Val Ser Ala Pro Leu Lys Gln Leu Gln
35 40 45
Asp Leu Leu Gly Glu Glu Gln Trp Glu Ala Met Lys Thr Lys Met Asn
50 55 60
Ser Arg Lys Lys Ala Gly Gln Trp Ala Ile Phe Asn Ser Pro Thr Pro
65 70 75 80
Gly Val Ser Ser Thr Leu Val Leu Ala Trp Thr Pro Trp Gly Tyr Tyr
85 90 95
Asp Lys Asp Val Gln Asp Ile Leu Glu Arg Lys Asp Pro Met Ser Ser
100 105 110
Ser Leu Ser Glu Lys Asp Ser Lys Glu Phe Leu Lys Asn Leu Phe Val
115 120 125
Asp Leu Leu Glu Asn Gly Phe Thr Ser Val His Ile His Ala Glu Glu
130 135 140
Ala Phe Thr Pro Leu Asp His Thr Gly Lys Pro His Phe Lys Arg Asp
145 150 155 160
Asn Val Tyr Leu Pro Gly Lys Leu Leu Gly Ala Leu Asn Glu Ala Ala
165 170 175
Val Gln Ala Asn Val Ser Ala Asp Thr Gln Phe Thr Leu Phe Leu Thr
180 185 190
Gln Asp Glu Cys Asn Pro Phe His Asp Lys Lys Arg Gly
195 200 205

<210>393

<211>147

<212>PRT

<213>Chlamydia pneumoniae

<400>393

Trp Arg Gly Asp Cys Tyr Arg His Tyr Tyr Asp Ile Ser Ile Ala Val
1 5 10 15
Gly Ile Asp Arg Gly Leu Val Val Pro Val Ile Arg Asp Cys Asp Lys
20 25 30
Leu Ser Asn Gly Glu Ile Glu Gln Lys Leu Ala Asp Leu Ser Leu Arg
35 40 45
Ala Arg Glu Gly Leu Leu Ala Ile Ala Glu Leu Glu Gly Gly Gly Phe
50 55 60
Thr Ile Thr Asn Gly Gly Val Tyr Gly Ser Leu Leu Ser Thr Pro Ile
65 70 75 80
Ile Asn Pro Pro Gln Val Gly Ile Leu Gly Met His Lys Ile Glu Lys
85 90 95
Arg Pro Val Val Leu Asp Asn Glu Ile Val Ile Ala Asp Met Met Tyr
100 105 110
Val Ala Leu Ser Tyr Asp His Arg Leu Ile Asp Gly Lys Glu Ala Val
115 120 125
Gly Phe Leu Val Lys Val Lys Glu Gly Leu Glu Asn Pro Ala Ser Leu
130 135 140
Leu Asp Leu
145

<210>394

<211>233

<212>PRT

<213>Chlamydia pneumoniae

<400>394

Ile Met Thr Thr Glu Val Arg Ile Pro Asn Ile Ala Glu Ser Ile Ser
1 5 10 15
Glu Val Thr Val Ala Ser Leu Leu Val Thr Glu Gly Ala Leu Ile Gln
20 25 30

Glu Asn Gln Gly Leu Leu Glu Ile Glu Ser Asp Lys Val Asn Gln Leu
 35 40 45
 Ile Tyr Ala Pro Val Ser Gly Arg Ile Phe Trp Glu Val Ser Glu Gly
 50 55 60
 Asp Val Val Pro Val Gly Gly Val Val Gly Lys Ile Glu Pro Ala Gly
 65 70 75 80
 Glu Gly Glu Glu Leu Gly Asp Ser Gln Ser Lys Glu Thr Ile Glu Ala
 85 90 95
 Glu Ile Ile Cys Phe Pro Gln Ser Gly Val Arg Gln Ser Pro Pro Glu
 100 105 110
 Asn Lys Thr Phe Ile Pro Leu Arg Asp Gln Met Asp Gln Gly Ser Gln
 115 120 125
 Gly Leu Ser Ala Gly Asp Arg Gly Glu Thr Arg Glu Arg Met Thr Ser
 130 135 140
 Ile Arg Lys Thr Ile Ser Arg Arg Leu Leu Ser Ala Leu His Glu Ser
 145 150 155 160
 Ala Met Leu Thr Thr Phe Asn Glu Val Tyr Met Thr Pro Leu Phe His
 165 170 175
 Leu Arg Lys Glu Lys Gln Glu Glu Phe Leu Ser Arg Tyr Gly Val Lys
 180 185 190
 Leu Gly Phe Met Ser Phe Phe Val Lys Ala Val Leu Glu Ala Leu Lys
 195 200 205
 Ala Tyr Pro Arg Val Asn Ala Tyr Ile Asp Gly Glu Glu Ile Val Thr
 210 215 220
 Val Thr Ile Met Thr Phe Leu Leu Leu
 225 230

<210>395

<211>915

<212>PRT

<213>Chlamydia pneumoniae

<400>395

Ile Val Phe Ile Glu Phe Asn Tyr Phe Met Asp Ser Glu Phe Val Gly
 1 5 10 15
 Gln Val Tyr Ser Ser Asp Met Asp Trp Ile Glu Ser Met Tyr Gln Arg
 20 25 30
 Phe Met Asn His Glu Thr Leu Asp Pro Ser Trp Lys Tyr Phe Phe Glu
 35 40 45
 Gly Tyr Gln Leu Gly Gln Ala Ala Ser Pro Ser Glu Ala Ser Thr Lys
 50 55 60
 Ile Ser Gly Asn Glu Thr Ile Ala Met Leu Gln Glu Lys Ser Gln
 65 70 75 80
 Phe Leu Cys Thr Ile Tyr Arg Tyr Tyr Gly Tyr Leu Gln Ser Gln Ile
 85 90 95
 Ser Thr Leu Ala Pro Thr Thr Asp Ser Arg Phe Ile Gln Glu Lys Ile
 100 105 110
 Ala Lys Ile Asp Leu Asp Glu Gln Val Pro Ser Ala Gly Leu Leu Pro
 115 120 125
 Lys Ala Gln Val Ser Val Arg Glu Leu Ile Glu Ala Leu Lys Lys Cys
 130 135 140
 Tyr Cys Gly Ser Leu Thr Leu Glu Thr Leu Thr Cys Thr Pro Glu Leu
 145 150 155 160
 Gln Glu Phe Val Trp Asn Leu Met Glu Lys Arg Gln Val Glu Arg Phe
 165 170 175
 Ala Glu Gln Leu Leu Arg Ser Tyr Lys Asp Leu Cys Lys Ala Thr Phe
 180 185 190
 Phe Glu Glu Phe Leu Gln Ile Lys Phe Thr Gly Gln Lys Arg Phe Ser
 195 200 205
 Leu Glu Gly Gly Glu Thr Leu Val Pro Met Leu Glu His Leu Val His
 210 215 220
 Tyr Gly Ser Ala Leu Gly Ile Ser Asn Tyr Val Leu Gly Met Ala His
 225 230 235 240
 Arg Gly Arg Leu Asn Val Leu Thr Asn Val Leu Gly Lys Pro Tyr Arg
 245 250 255
 Tyr Val Phe Met Glu Phe Glu Asp Asp Pro Ala Ala Arg Gly Leu Glu

260 265 270
 Ser Val Gly Asp Val Lys Tyr His Lys Gly Tyr Val Leu Lys Ser His
 275 280 285
 Gln Lys Asp Arg Glu Thr Thr Phe Val Met Leu Pro Asn Ala Ser His
 290 295 300
 Leu Glu Ser Val Asp Pro Ile Val Glu Gly Val Val Ala Ala Leu Gln
 305 310 315 320
 His Gln Gly His Ala Gly Lys Glu Gln Ser Ser Leu Ala Ile Leu Val
 325 330 335
 His Gly Asp Ala Ala Phe Ser Gly Gln Gly Val Val Tyr Glu Thr Leu
 340 345 350
 Gln Leu Ser Arg Val Pro Gly Tyr Ser Thr Glu Gly Thr Leu His Ile
 355 360 365
 Val Val Asn Asn Tyr Ile Gly Phe Thr Ala Val Pro Arg Glu Ser Arg
 370 375 380
 Ser Thr Pro Tyr Cys Thr Asp Ile Ala Lys Met Leu Gly Ile Pro Val
 385 390 395 400
 Phe Arg Val Asn Ser Glu Asp Val Val Ala Cys Ile Glu Ala Ile Glu
 405 410 415
 Tyr Ala Leu Gln Val Arg Glu Arg Phe Ser Cys Asp Val Ile Ile Asp
 420 425 430
 Leu Cys Cys Tyr Arg Lys Tyr Gly His Asn Glu Ser Asp Asp Pro Ser
 435 440 445
 Val Thr Ala Pro Leu Leu Tyr Asp Gln Ile Lys Arg Lys Lys Ser Ile
 450 455 460
 Arg Glu Leu Phe Arg Gln Tyr Leu Leu Glu Gly Gln Phe Ala Asp Ile
 465 470 475 480
 Ser Glu Glu Thr Leu Ala Ser Ile Glu Lys Glu Ile Gln Glu Ser Leu
 485 490 495
 Asn Arg Glu Phe Gln Val Leu Lys Gly Thr Asp Pro Glu Pro Phe Pro
 500 505 510
 Lys Lys Glu Cys His His Cys Asp Arg Leu Asn Asn Gly Glu Leu Ile
 515 520 525
 Leu His Asp Cys Asp Val Ser Leu Asp Arg Glu Thr Leu Phe His Met
 530 535 540
 Ser Ser Arg Leu Cys Gly Phe Pro Asp Asn Phe His Pro His Pro Lys
 545 550 555 560
 Ile Lys Thr Leu Leu Glu Lys Arg Met Lys Met Ala Glu Gly Gly Val
 565 570 575
 Gly Tyr Asp Trp Ala Met Ala Glu Glu Leu Ala Phe Ala Ser Leu Leu
 580 585 590
 Ile Glu Gly Tyr Asn Leu Arg Leu Ser Gly Gln Asp Ser Ile Arg Gly
 595 600 605
 Thr Phe Ser Gln Arg His Leu Val Trp Ser Asp Thr Val Thr Gly Asp
 610 615 620
 Thr Tyr Ser Pro Leu Tyr His Leu Ser Ala Glu Gln Gly Ser Val Glu
 625 630 635 640
 Met Tyr Asn Ser Pro Leu Ser Glu Tyr Ala Ile Leu Gly Phe Glu Tyr
 645 650 655
 Gly Tyr Ala Gln Gln Ala Leu Lys Thr Leu Val Leu Trp Glu Ala Gln
 660 665 670
 Phe Gly Asp Phe Ala Asn Gly Ala Gln Ile Ile Phe Asp Gln Tyr Ile
 675 680 685
 Ser Ser Gly Ile Gln Lys Trp Asp Leu His Ser Asp Ile Val Leu Leu
 690 695 700
 Leu Pro His Gly Tyr Glu Gly Gln Gly Pro Glu His Ser Ser Ser Arg
 705 710 715 720
 Ile Glu Arg Tyr Leu Gln Leu Ala Ala Asn Trp Asn Phe Gln Val Val
 725 730 735
 Leu Pro Ser Thr Pro Val Gln Tyr Phe Arg Ile Leu Arg Glu His Ala
 740 745 750
 Lys Arg Asp Leu Ser Leu Pro Leu Val Ile Phe Thr Pro Lys Leu Leu
 755 760 765
 Leu Arg Tyr Pro Gln Cys Val Ser Ser Ile Glu Glu Phe Thr Glu Pro

770 775 780
 Gly Gly Phe Arg Ala Ile Leu Glu Asp Ala Asp Pro Asn Tyr Asp Ala
 785 790 795 800
 Ser Ile Leu Val Leu Cys Ser Gly Lys Ile Tyr Tyr Asp Tyr Ala Glu
 805 810 815
 Met Leu Pro Gln Asp Arg Arg Lys Asp Phe Ser Cys Leu Arg Ile Glu
 820 825 830
 Ser Leu Tyr Pro Leu Ala Leu Glu Asp Leu Val Ser Leu Ile Asp Lys
 835 840 845
 Tyr Ser His Leu Lys His Phe Val Trp Leu Gln Glu Glu Ser Lys Asn
 850 855 860
 Met Gly Ala Tyr Asp Tyr Met Phe Met Ala Leu Gln Asp Ile Leu Pro
 865 870 875 880
 Glu Lys Leu Leu Tyr Ile Gly Arg Pro Arg Ser Ser Ser Thr Ala Ser
 885 890 895
 Gly Ser Ala Lys Ser Val Val Lys Ser Trp Ser Arg Val Trp Lys Pro
 900 905 910
 Ser Phe Leu
 915
 <210>396
 <211>394
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>396
 Met Lys Thr Leu Ser Ala Ile Ala Ile Ala Gly Asp Ala Val Val Ser
 1 5 10 15
 Leu Ile Pro Met Leu Met Asn Gly Lys Ala Pro Leu Ala Leu Tyr Ile
 20 25 30
 His Ile Pro Phe Cys Thr Lys Lys Cys Arg Tyr Cys Ser Phe Tyr Thr
 35 40 45
 Ile Pro Tyr Lys Ser Glu Ser Val Ser Leu Tyr Cys Asn Ala Val Ile
 50 55 60
 Gln Glu Gly Leu Arg Lys Leu Ala Pro Ile Gln Glu Thr His Phe Ile
 65 70 75 80
 Glu Thr Val Phe Phe Gly Gly Gly Thr Pro Ser Leu Val Ser Pro Leu
 85 90 95
 Asp Leu Lys Arg Ile Leu Lys Glu Leu Ala Pro His Ala Arg Glu Ile
 100 105 110
 Thr Leu Glu Ala Asn Pro Glu Asn Leu Thr Val Ser Tyr Leu Arg Gln
 115 120 125
 Leu Gln Glu Thr Pro Ile Asn Arg Ile Ser Val Gly Val Gln Thr Phe
 130 135 140
 Asp Asp Ser Ile Leu Gln Leu Leu Gly Arg Thr His Ser Ser Ser Ala
 145 150 155 160
 Ala Ile Thr Ala Leu Gln Glu Cys Gln Asn His Gly Phe Ser Asn Leu
 165 170 175
 Ser Ile Asp Leu Ile Tyr Gly Leu Pro Thr Gln Ser Leu Glu Ile Phe
 180 185 190
 Leu Ser Asp Leu His Gln Ala Leu Thr Leu Pro Ile Thr His Ile Ser
 195 200 205
 Leu Tyr Asn Leu Thr Ile Asp Pro His Thr Ser Phe Tyr Lys His Arg
 210 215 220
 Lys Ile Leu Val Pro Thr Ile Ala Gln Glu Glu Ile Leu Ala Glu Met
 225 230 235 240
 Ser Leu Leu Ala Glu Asn Leu Leu Leu Ser Gln Gly Phe Gln Arg Tyr
 245 250 255
 Glu Leu Ala Ser Tyr Ala Lys Pro Asp Tyr Pro Ala Lys His Asn Leu
 260 265 270
 Tyr Tyr Trp Thr Asp Arg Pro Phe Leu Gly Leu Gly Val Ser Ala Ser
 275 280 285
 Gln Tyr Leu His Gly Glu Arg Ser Lys Asn Tyr Ser His Ile Ser His
 290 295 300
 Tyr Leu Arg Ala Val Arg Lys Asn Leu Pro Thr Gln Glu Thr Ser Glu
 305 310 315 320

Ile Leu Pro Lys Lys Glu Arg Ile Lys Glu Ala Leu Ala Leu Arg Leu
 325 330 335
 Arg Leu Leu Glu Gly Ala Asp Leu Ala Glu Phe Pro Ser Thr Leu Ile
 340 345 350
 Ser Met Leu Thr Gln Asp Val Lys Leu Gln Asn Leu Phe Ser Val His
 355 360 365
 Gly Gln Cys Leu Ala Leu Asn Arg Gln Gly Arg Leu Phe His Asp Thr
 370 375 380
 Ile Ala Glu Glu Ile Met Gly Tyr Ser Phe
 385 390
 <210>397
 <211>600
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>397
 Ser Leu Pro Asn Lys Phe Arg Ala Leu Met Thr Ala Pro Thr Glu Ser
 1 5 10 15
 Arg Ser Ser Pro Pro Thr Leu Leu Glu Glu Thr Glu Pro Leu Ser Pro
 20 25 30
 Asn Pro Ile Pro Ala Asp Ile Gln Ile Pro Arg Ile Thr Ile Ser Pro
 35 40 45
 Pro Ser Leu Asp Val Ser Thr Val Ala Ser Ser Ala Glu Asp Ile Ser
 50 55 60
 Val Phe Ile Ala Gly Gly Pro Arg Ser Ser Ser Ala Ser Val Ala
 65 70 75 80
 Ser Asp Val Tyr Glu Leu Val Cys Leu Cys Gly Gly Asp Glu Asp Pro
 85 90 95
 Glu Pro Pro Asp Ser Glu Val Arg Thr Leu Tyr Val Asn Gly Ser Trp
 100 105 110
 Gln Thr His Gln Glu Ala Val Gln Glu Leu Leu Tyr Ile Ser Glu Val
 115 120 125
 Arg Gly Glu Ala Val Arg Leu Leu Tyr Asn Asp Gly Ser Gly Met Ser
 130 135 140
 Pro Trp Pro Ile Ser Pro Cys Arg Thr Leu Pro Thr Leu Asp His Pro
 145 150 155 160
 Leu Cys Gln Ala Leu Leu Thr Val Trp Glu Gln Phe Phe Ser Ala Pro
 165 170 175
 Glu Asn Gln Asn Arg Glu Phe Leu Val Ile Phe Tyr Gly Asp Ala Ser
 180 185 190
 Pro Tyr Ile Gln Gln Ala Leu Thr Gln Ser Arg His Ser Pro Arg Ile
 195 200 205
 Val Val Val Gly Ile Ser Pro Thr Val Phe Ile Gln Gly Asp Phe Arg
 210 215 220
 Val His Asn Tyr Arg Val Ser Gly Asp Phe Phe Ser Ser Leu Asp Cys
 225 230 235 240
 Arg Gly Thr Arg Ala Glu Asn Thr Thr Ile Leu Pro Tyr Ser Ser Gly
 245 250 255
 Leu Glu Gly Val Phe Leu Pro Ser Ile Arg Cys Pro Ser Phe Thr Trp
 260 265 270
 Ala Val Arg Phe Gly Glu Gln Cys Leu Val Ala Asn Arg Gly Glu Asp
 275 280 285
 Val Glu Asp Arg Gly Gly Leu Ser Gln Asp Ala Glu Arg Ser Gln Leu
 290 295 300
 Pro His Ser Glu Arg Asp Leu Ala Val Val Ile Asp Ser Thr Asp Pro
 305 310 315 320
 Ser Ser Met Ser Arg Leu Val Glu Trp Leu Asn Gln Gly Ser Pro Ser
 325 330 335
 Ser Asp Met Glu Ile Asn Pro Tyr Pro Gln Arg Cys Pro Asp Val Ala
 340 345 350
 Leu Ser Ala Leu Tyr Ala Ile Ser Arg Val Ser Gly Leu Ala Gln Glu
 355 360 365
 Trp Ile Leu Ala Ser Val His Glu Gly Leu Asp Leu Gln Ile Cys Tyr
 370 375 380
 Ser Leu Ile Leu Met His Thr Thr Phe Ala Val Arg Tyr Phe Phe Leu

385 390 395 400
 Leu Phe Thr Asn Tyr Pro Gln Ser Arg Glu Arg Phe Arg Thr Ala Arg
 405 410 415
 Ile Val Ala Gln Ser Leu Tyr Leu Pro Ser Ile Leu Val Leu Val Phe
 420 425 430
 Asp Cys Gly Asn Val Leu Arg Lys Leu Trp Met Pro Gln Glu Ile Leu
 435 440 445
 Arg Ala Ile Phe Ile Ser Ala Ser Thr Ile Ser Gly Ser Ile Val Phe
 450 455 460
 Val Glu Cys Thr Arg Trp Met Gly Arg Gly Leu Arg His Arg Val Gln
 465 470 475 480
 Gln Phe Val Gln Gln Arg Val Ile Gly Ser Gly Leu Pro Val Gly Thr
 485 490 495
 Val Arg Ala Ser Tyr Arg Asp Arg Ala Gly Phe Ile Ile Gly Phe Leu
 500 505 510
 Gln Thr Val His Gly Gly Leu Tyr Leu Pro Val Ser Ile Met Val Leu
 515 520 525
 Asn Gln Ile Ala Ile Gln Val Pro Arg Ile Leu Val Arg Pro Asn Asn
 530 535 540
 Thr Ala Val Tyr Asp Leu His Asn Lys Ser Ala Glu Glu Asn Trp Ser
 545 550 555 560
 Ser Gly Asp Val Leu Ala Val Gly Gln Thr Leu Asn Phe Ile Leu Cys
 565 570 575
 Ala Phe Val Leu Phe Val Asn Leu Trp Phe Phe Val Lys Ser Val Leu
 580 585 590
 Arg His Ser Arg Arg Arg Arg Arg
 595 600

<210>398

<211>115

<212>PRT

<213>Chlamydia pneumoniae

<400>398

Arg Val Arg Thr Ser Glu Ser Gly Gly Ser Gly Ser Ser Ser Pro Pro
 1 5 10 15
 Gln Arg Gln Thr Asn Ser Tyr Thr Ser Glu Ala Thr Glu Ala Asp Glu
 20 25 30
 Glu Leu Leu Gly Pro Pro Ala Met Lys Thr Glu Ile Ser Ser Ala Glu
 35 40 45
 Asp Ala Thr Val Asp Thr Ser Arg Glu Gly Gly Asp Ile Val Ile Leu
 50 55 60
 Gly Ile Trp Ile Ser Ala Gly Ile Gly Phe Gly Asp Arg Gly Ser Val
 65 70 75 80
 Ser Ser Ser Ser Val Gly Gly Glu Asp Arg Asp Ser Val Gly Ala Val
 85 90 95
 Ile Asn Ala Leu Asn Leu Phe Gly Lys Asp Tyr Lys Ile Ser Ile Asp
 100 105 110
 Asn Thr Gln
 115

<210>399

<211>239

<212>PRT

<213>Chlamydia pneumoniae

<400>399

Pro Val Thr Leu Tyr Leu Leu Pro Asn Thr Leu Gly Thr Arg Ala Val
 1 5 10 15
 Glu Thr Leu Pro Ser Val Ile Gly Glu Leu Val His Arg Leu Asp Gly
 20 25 30
 Leu Ile Val Glu Ser Asp Arg Gly Gly Arg Ala Phe Leu Ser Leu Trp
 35 40 45
 Lys Ile Pro Glu Val His Lys Phe Pro Leu Ala Ile Leu Ser Lys His
 50 55 60
 Ala Arg Leu Pro Lys Ala Trp Asp Phe Tyr Leu Glu Pro Ile Val Lys
 65 70 75 80
 His Gly Glu Asn Trp Gly Leu Ile Ser Asp Ala Gly Leu Pro Cys Ile

85 90 95
 Ala Asp Pro Gly Ala Ser Leu Val Arg Arg Ala Arg Ala Leu Gly Ile
 100 105 110
 Pro Val Gln Ala Phe Ser Gly Pro Cys Ser Ile Thr Leu Ala Leu Met
 115 120 125
 Leu Ser Gly Leu Pro Ser Gln Ser Phe Thr Phe Leu Gly Tyr Leu Pro
 130 135 140
 Gln Ser Pro Lys Glu Arg Val Lys Ser Ile Lys Lys Ala Ala Thr Ser
 145 150 155 160
 Lys Glu Val Ser Thr Ser Val Cys Ile Glu Thr Pro Tyr Arg Asn Val
 165 170 175
 Tyr Thr Phe Glu Ser Leu Leu Asp Thr Leu Pro Ser Tyr Ala Glu Leu
 180 185 190
 Cys Val Ala Ser Asp Leu Ser Gly Pro Ser Glu Leu Val Leu Thr Arg
 195 200 205
 Gln Val Gln Ser Trp Arg Thr Thr Glu Asp Leu Gly Ser Val Lys Gln
 210 215 220
 Ser Ile Thr Lys Val Pro Thr Ile Phe Leu Phe His Ile Pro Asn
 225 230 235

<210>400

<211>98

<212>PRT

<213>Chlamydia pneumoniae

<400>400

Gly Val Ser Ile His Thr Glu Val Asp Thr Ser Leu Glu Val Ala Ala
 1 5 10 15
 Phe Phe Ile Asp Phe Thr Arg Ser Leu Gly Leu Cys Gly Arg Tyr Pro
 20 25 30
 Lys Asn Val Lys Leu Trp Glu Gly Lys Pro Glu Ser Met Ser Ala Asn
 35 40 45
 Val Ile Glu Gln Gly Pro Glu Lys Ala Cys Thr Gly Ile Pro Lys Ala
 50 55 60
 Arg Ala Arg Arg Thr Lys Leu Ala Pro Gly Ser Ala Ile Gln Gly Arg
 65 70 75 80
 Pro Ala Ser Glu Ile Ser Pro Gln Phe Ser Pro Cys Phe Thr Ile Gly
 85 90 95

Ser Arg

<210>401

<211>321

<212>PRT

<213>Chlamydia pneumoniae

<400>401

Val Gln Asp Thr Thr Phe Leu Thr Leu Pro Met Gln Lys Ser Leu Thr
 1 5 10 15
 Ser Phe Asp Asp Phe Ser Gln Ala Tyr Ala Glu Lys Val Pro Ala Ile
 20 25 30
 Ala Leu Ile Gly Ser Ala Leu Glu Asp Asp Lys Asp Ala Leu Ile Glu
 35 40 45
 Leu Leu Val Ser Glu Ser Phe Lys Glu Leu Gly Gly Gln Gly Leu Met
 50 55 60
 Pro Ala Thr Leu Met Ser Trp Thr Glu Thr Phe Ala Leu Phe Gln Glu
 65 70 75 80
 His Glu Thr Leu Gly Ile Ile His Ala Glu Lys Phe Pro Leu Ala Thr
 85 90 95
 Lys Glu Phe Leu Ser Arg Tyr Ala Arg Asn Pro Gln Pro His Leu Thr
 100 105 110
 Ile Leu Ile Phe Thr Thr Lys Gln Glu Cys Phe Arg Glu Leu Ser Lys
 115 120 125
 Ala Leu Pro Ser Ala Leu Ser Leu Ser Leu Phe Gly Glu Trp Pro Ala
 130 135 140
 Asp Arg Gln Lys Arg Ile Ile Arg Leu Leu Leu Gln Arg Ala Glu Arg
 145 150 155 160
 Val Gly Ile Ser Cys Ser Gln Ser Leu Ala Ser Leu Phe Leu Arg Ala

165 170
 Leu Ala Ser Thr Ser Leu Pro Asp Ile Leu Ser Glu Phe Asp Lys Leu
 180 185 190
 Leu Cys Ser Val Gly Lys Lys Thr Ser Leu Asp His Ser Asp Ile Lys
 195 200 205
 Glu Leu Val Val Lys Lys Glu Lys Ala Ser Leu Trp Lys Phe Arg Asp
 210 215 220
 Ser Leu Leu Lys Arg Asp Pro Val Glu Gly His Gln Gln Leu His Phe
 225 230 235 240
 Leu Leu Glu Asp Gly Glu Asp Pro Leu Gly Ile Ile Thr Phe Leu Arg
 245 250 255
 Thr Gln Cys Leu Tyr Gly Leu Arg Ser Ile Glu Glu Gly Ser Lys Glu
 260 265 270
 Asn Lys His Arg Met Phe Val Leu Tyr Gly Lys Glu Arg Leu His Gln
 275 280 285
 Ala Leu Asn Ser Leu Phe Tyr Ala Glu Thr Leu Ile Lys Asn Asn Val
 290 295 300
 Gln Asp Pro Ile Val Ala Val Glu Thr Leu Val Ile Arg Met Val Asn
 305 310 315 320
 Leu

<210>402

<211>182

<212>PRT

<213>Chlamydia pneumoniae

<400>402

Val Ile Thr Cys Leu Ile Arg Gly Ile Lys Met Ile Gly Ala Gln Lys
 1 5 10 15
 Lys Gln Ser Gly Lys Lys Thr Ala Ser Arg Ala Val Arg Lys Pro Ala
 20 25 30
 Lys Lys Val Ala Ala Lys Arg Thr Val Lys Lys Ala Thr Val Arg Lys
 35 40 45
 Thr Ala Val Lys Lys Pro Ala Val Arg Lys Thr Ala Ala Lys Lys Thr
 50 55 60
 Val Ala Lys Lys Thr Thr Ala Lys Arg Thr Val Arg Lys Thr Val Ala
 65 70 75 80
 Lys Lys Pro Ala Val Lys Lys Val Ala Ala Lys Arg Val Val Lys Lys
 85 90 95
 Thr Val Ala Lys Lys Thr Thr Ala Lys Arg Ala Val Arg Lys Thr Val
 100 105 110
 Ala Lys Lys Pro Val Ala Arg Lys Thr Thr Val Ala Lys Gly Ser Pro
 115 120 125
 Lys Lys Ala Ala Ala Cys Ala Leu Ala Cys His Xaa Asn His Lys His
 130 135 140
 Thr Ser Ser Cys Lys Arg Val Cys Ser Ser Thr Ala Thr Arg Lys His
 145 150 155 160
 Gly Ser Lys Ser Arg Val Arg Thr Ala Xaa Gly Trp Arg His Gln Leu
 165 170 175
 Ile Lys Met Met Ser Arg
 180

<210>403

<211>197

<212>PRT

<213>Chlamydia pneumoniae

<400>403

Arg Gln Pro Xaa Ala Val Arg Thr Arg Leu Leu Glu Pro Cys Phe Leu
 1 5 10 15
 Val Ala Val Glu Glu Gln Thr Arg Leu Gln Leu Asp Val Cys Leu Trp
 20 25 30
 Phe Xaa Trp His Ala Lys Ala Gln Ala Ala Ala Phe Leu Gly Glu Pro
 35 40 45
 Leu Ala Thr Val Val Phe Leu Ala Thr Gly Phe Leu Ala Thr Val Leu
 50 55 60
 Arg Thr Ala Leu Leu Ala Val Val Phe Phe Ala Thr Val Phe Thr

65 70 75 80
 Thr Arg. Leu Ala Ala Thr Phe Leu Thr Ala Gly Phe Leu Ala Thr Val
 85 90 95
 Leu Arg Thr Val Leu Leu Ala Val Val Phe Phe Ala Thr Val Phe Leu
 100 105 110
 Ala Ala Val Leu Arg Thr Ala Gly Phe Phe Thr Ala Val Leu Arg Thr
 115 120 125
 Val Ala Phe Leu Thr Val Arg Leu Ala Ala Thr Phe Leu Ala Gly Phe
 130 135 140
 Arg Thr Ala Leu Glu Ala Val Phe Leu Pro Leu Cys Phe Phe Cys Ala
 145 150 155 160
 Pro Ile Ile Phe Ile Pro Leu Ile Arg Gln Val Ile Thr Tyr Leu Ile
 165 170 175
 Tyr Arg Gln Gly Arg Leu Lys Thr Leu Ile Lys Lys Met Thr Phe Ile
 180 185 190
 Leu Lys Lys Leu Lys
 195

<210>404

<211>192

<212>PRT

<213>Chlamydia pneumoniae

<400>404

Met Ser Arg Gly Ser Phe Leu Leu Thr Glu Asn Ala Ile Asp Gly Ala
 1 5 10 15
 Ser Tyr Lys Met Gly Asp Val Tyr Val Gly Met Ser Gly Leu Ser Val
 20 25 30
 Glu Ile Cys Ser Thr Asp Ala Glu Gly Arg Leu Ile Leu Ala Asp Ala
 35 40 45
 Ile Thr Tyr Ala Leu Lys Tyr Cys Lys Pro Thr Arg Ile Ile Asp Phe
 50 55 60
 Ala Thr Leu Thr Gly Ala Met Val Val Ser Leu Gly Glu Glu Val Ala
 65 70 75 80
 Gly Phe Phe Ser Asn Asn Asp Val Leu Ala Glu Asp Leu Leu Glu Ala
 85 90 95
 Ser Ala Glu Thr Ser Glu Pro Leu Trp Arg Leu Pro Leu Val Lys Lys
 100 105 110
 Tyr Asp Lys Thr Leu His Ser Asp Ile Ala Asp Met Lys Asn Leu Gly
 115 120 125
 Ser Asn Arg Ala Gly Ala Ile Thr Ala Ala Leu Phe Leu Gln Arg Phe
 130 135 140
 Leu Glu Glu Ser Ser Val Ala Trp Ala His Leu Asp Ile Ala Gly Thr
 145 150 155 160
 Ala Tyr His Glu Lys Glu Glu Asp Arg Tyr Pro Lys Tyr Ala Ser Gly
 165 170 175
 Phe Gly Val Arg Ser Ile Leu Tyr Tyr Leu Glu Asn Ser Leu Ser Lys
 180 185 190

<210>405

<211>325

<212>PRT

<213>Chlamydia pneumoniae

<400>405

Val Val Leu Phe His Ala Gln Ala Ser Gly Arg Asn Arg Val Lys Ala
 1 5 10 15
 Asp Ala Ile Val Leu Pro Phe Trp His Phe Lys Asp Ala Lys Asn Ala
 20 25 30
 Ala Ser Phe Glu Ala Glu Phe Glu Pro Ser Tyr Leu Pro Ala Leu Glu
 35 40 45
 Asn Phe Gln Gly Lys Thr Gly Glu Ile Glu Leu Leu Tyr Ser Ser Pro
 50 55 60
 Lys Ala Lys Glu Lys Arg Ile Val Leu Leu Gly Leu Gly Lys Asn Glu
 65 70 75 80
 Glu Leu Thr Ser Asp Val Val Phe Gln Thr Tyr Ala Thr Leu Thr Arg
 85 90 95
 Val Leu Arg Lys Ala Lys Cys Ser Thr Val Asn Ile Ile Leu Pro Thr

100 105
 Ile Ser Glu Leu Arg Leu Ser Ala Glu Glu Phe Leu Val Gly Leu Ser
 115 120 125
 Ser Gly Ile Leu Ser Leu Asn Tyr Asp Tyr Pro Arg Tyr Asn Lys Val
 130 135 140
 Asp Arg Asn Leu Glu Thr Pro Leu Ser Lys Val Thr Val Ile Gly Ile
 145 150 155 160
 Val Pro Lys Met Ala Asp Ala Ile Phe Arg Lys Glu Ala Ala Ile Phe
 165 170 175
 Glu Gly Val Tyr Leu Thr Arg Asp Leu Val Asn Arg Asn Ala Asp Glu
 180 185 190
 Ile Thr Pro Lys Lys Leu Ala Glu Val Ala Leu Asn Leu Gly Lys Glu
 195 200 205
 Phe Pro Ser Ile Asp Thr Lys Val Leu Gly Lys Asp Ala Ile Ala Lys
 210 215 220
 Glu Lys Met Gly Leu Leu Leu Ala Val Ser Lys Gly Ser Cys Val Asp
 225 230 235 240
 Pro His Phe Ile Val Val Arg Tyr Gln Gly Arg Pro Lys Ser Lys Asp
 245 250 255
 His Thr Val Leu Ile Gly Lys Gly Val Thr Phe Asp Ser Gly Gly Leu
 260 265 270
 Asp Leu Lys Pro Gly Lys Ser Met Leu Thr Met Lys Glu Asp Met Ala
 275 280 285
 Gly Gly Ala Thr Val Leu Gly Ile Leu Ser Ala Leu Ala Xaa Leu Glu
 290 295 300
 Leu Pro Ile Asn Val Thr Gly Ile Ile Pro Ala Tyr Arg Glu Cys Tyr
 305 310 315 320
 Arg Trp Arg Leu Leu
 325

<210>406

<211>105

<212>PRT

<213>Chlamydia pneumoniae

<400>406

Asp Ala Ser Leu Leu Glu Glu Arg Leu Arg Ser His Cys Cys Trp Arg
 1 5 10 15
 Tyr Leu Cys Arg Glu Leu His Glu Gln Arg Trp Phe His Arg Asn Ser
 20 25 30
 Ser Leu Val Ile Ser Val Asp Ser Leu Lys Phe Ser Pro Phe Gly Arg
 35 40 45
 Asn Glu Gly Ser Arg Ser Pro Ser Leu Glu Asp Asn His Gln Gln Val
 50 55 60
 Gly Tyr Glu Ser Val Ser Val Gly Phe Glu Gly Glu Ala Leu Asp Ala
 65 70 75 80
 Glu Ala Ile Lys Asp Lys Asp Met Tyr Ala Gly Tyr Gly Gln Glu Gln
 85 90 95
 Gln Tyr Val Cys Glu Asp Val Pro Phe
 100 105

<210>407

<211>89

<212>PRT

<213>Chlamydia pneumoniae

<400>407

Met Met Phe Gly His Phe Ala Gly Tyr Leu Gly Ala Asp Pro Glu Glu
 1 5 10 15
 Arg Met Thr Ser Lys Gly Lys Arg Val Ile Thr Leu Arg Leu Gly Val
 20 25 30
 Lys Thr Arg Val Gly Met Lys Asp Glu Thr Val Trp Cys Lys Cys Asn
 35 40 45
 Ile Trp His Asn Arg Tyr Asp Lys Met Leu Pro Tyr Leu Lys Lys Gly
 50 55 60
 Ser Gly Val Ile Val Ala Gly Asp Ile Ser Val Glu Ser Tyr Met Ser
 65 70 75 80
 Lys Asp Gly Phe Thr Ala Ile Leu Leu

<210>408

<211>179

<212>PRT

<213>Chlamydia pneumoniae

<400>408

Leu Glu Thr Thr Thr Ile Tyr Tyr Lys Glu Ile Pro Ser Cys Pro Arg
1 5 10 15
Gln Asn Ala Glu Glu Asn Leu Lys Asn Phe Ala Lys Glu Leu Lys Leu
20 25 30
Pro Asp Val Ala Phe Asp Gln Asn Asn Thr Cys Ile Leu Phe Val Asp
35 40 45
Gly Glu Phe Ser Leu His Leu Thr Tyr Glu Glu His Ser Asp Arg Leu
50 55 60
Tyr Val Tyr Ala Pro Leu Leu Asp Gly Leu Pro Asp Asn Thr Gln Arg
65 70 75 80
Lys Leu Ala Leu Tyr Glu Lys Leu Leu Glu Gly Ser Met Leu Gly Gly
85 90 95
Gln Met Ala Gly Gly Gly Val Gly Val Ala Thr Lys Glu Gln Leu Ile
100 105 110
Leu Met His Cys Val Leu Asp Met Lys Tyr Ala Glu Thr Asn Leu Leu
115 120 125
Lys Ala Phe Ala Gln Leu Phe Ile Glu Thr Val Val Lys Trp Arg Thr
130 135 140
Val Cys Ala Asp Ile Cys Ala Gly Arg Glu Pro Ser Val Asp Thr Met
145 150 155 160
Pro Gln Met Pro Gln Gly Gly Gly Gly Met Gln Pro Pro Pro Thr Gly
165 170 175
Ile Arg Ala

<210>409

<211>666

<212>PRT

<213>Chlamydia pneumoniae

<400>409

Ser Thr Met Glu Lys Val Ser Ser Tyr Pro Ser Val Pro Leu Pro Leu
1 5 10 15
Gly Ala Ser Lys Ile Ser Pro Asn Arg Tyr Arg Phe Ala Leu Tyr Ala
20 25 30
Ser Gln Ala Thr Glu Val Ile Leu Ala Leu Thr Asp Glu Asn Ser Glu
35 40 45
Val Ile Glu Val Pro Leu Tyr Pro Asp Thr His Arg Thr Gly Ala Ile
50 55 60
Trp His Ile Glu Ile Glu Gly Ile Ser Asp Gln Ser Ser Tyr Ala Phe
65 70 75 80
Arg Val His Gly Pro Lys Lys His Gly Met Gln Tyr Ser Phe Lys Glu
85 90 95
Tyr Leu Ala Asp Pro Tyr Ala Lys Asn Ile His Ser Pro Gln Ser Phe
100 105 110
Gly Ser Arg Lys Lys Gln Gly Asp Tyr Ala Phe Cys Tyr Leu Lys Glu
115 120 125
Glu Pro Phe Pro Trp Asp Gly Asp Gln Pro Leu His Leu Pro Lys Glu
130 135 140
Glu Met Ile Ile Tyr Glu Met His Val Arg Ser Phe Thr Gln Ser Ser
145 150 155 160
Ser Ser Arg Val His Ala Pro Gly Thr Phe Leu Gly Ile Ile Glu Lys
165 170 175
Ile Asp His Leu His Lys Leu Gly Ile Asn Ala Val Glu Leu Leu Pro
180 185 190
Ile Phe Glu Phe Asp Glu Thr Ala His Pro Phe Arg Asn Ser Lys Phe
195 200 205
Pro Tyr Leu Cys Asn Tyr Trp Gly Tyr Ala Pro Leu Asn Phe Phe Ser
210 215 220
Pro Cys Arg Arg Tyr Ala Tyr Ala Ser Asp Pro Cys Ala Pro Ser Arg

225 230 235 240
 Glu Phe Lys Thr Leu Val Lys Thr Leu His Gln Glu Gly Ile Glu Val
 245 250 255
 Ile Leu Asp Val Val Phe Asn His Thr Gly Leu Gln Gly Thr Thr Cys
 260 265 270
 Ser Leu Pro Trp Ile Asp Thr Pro Ser Tyr Tyr Ile Leu Asp Ala Gln
 275 280 285
 Gly His Phe Thr Asn Tyr Ser Gly Cys Gly Asn Thr Leu Asn Thr Asn
 290 295 300
 Arg Ala Pro Thr Thr Gln Trp Ile Leu Asp Ile Leu Arg Tyr Trp Val
 305 310 315 320
 Glu Glu Met His Val Asp Gly Phe Arg Phe Asp Leu Ala Ser Val Phe
 325 330 335
 Ser Arg Gly Pro Ser Gly Ser Pro Leu Gln Phe Ala Pro Val Leu Glu
 340 345 350
 Ala Ile Ser Phe Asp Pro Leu Leu Ala Ser Thr Lys Ile Ile Ala Glu
 355 360 365
 Pro Trp Asp Ala Gly Gly Leu Tyr Gln Val Gly Tyr Phe Pro Thr Leu
 370 375 380
 Ser Pro Arg Trp Ser Glu Trp Asn Gly Pro Tyr Arg Asp Asn Val Lys
 385 390 395 400
 Ala Phe Leu Asn Gly Asp Gln Asn Leu Ile Gly Thr Phe Ala Ser Arg
 405 410 415
 Ile Ser Gly Ser Gln Asp Ile Tyr Pro His Gly Ser Pro Thr Asn Ser
 420 425 430
 Ile Asn Tyr Val Ser Cys His Asp Gly Phe Thr Leu Cys Asp Thr Val
 435 440 445
 Thr Tyr Asn His Lys His Asn Glu Ala Asn Gly Glu Asp Asn Arg Asp
 450 455 460
 Gly Thr Asp Ala Asn Tyr Ser Tyr Asn Phe Gly Thr Glu Gly Lys Thr
 465 470 475 480
 Glu Asp Pro Gly Ile Leu Glu Val Arg Glu Arg Gln Leu Arg Asn Phe
 485 490 495
 Phe Leu Thr Leu Met Val Ser Gln Gly Ile Pro Met Ile Gln Ser Gly
 500 505 510
 Asp Glu Tyr Ala His Thr Ala Glu Gly Asn Asn Asn Arg Trp Ala Leu
 515 520 525
 Asp Ser Asn Ala Asn Tyr Phe Leu Trp Asp Gln Leu Thr Ala Lys Pro
 530 535 540
 Thr Leu Met His Phe Leu Cys Asp Leu Ile Ala Phe Arg Lys Lys Tyr
 545 550 555 560
 Lys Thr Leu Phe Asn Arg Gly Phe Leu Ser Asn Lys Glu Ile Ser Trp
 565 570 575
 Val Asp Ala Met Gly Asn Pro Met Thr Trp Arg Pro Gly Asn Phe Leu
 580 585 590
 Ala Phe Lys Ile Lys Ser Pro Lys Ala His Val Tyr Val Ala Phe His
 595 600 605
 Val Gly Ala Gln Asp Gln Leu Ala Thr Leu Pro Lys Ala Ser Ser Asn
 610 615 620
 Phe Leu Pro Tyr Gln Ile Val Ala Glu Ser Gln Gln Gly Phe Val Pro
 625 630 635 640
 Gln Asn Val Ala Thr Pro Thr Val Ser Leu Gln Pro His Thr Thr Leu
 645 650 655
 Ile Ala Ile Ser His Ala Lys Glu Val Thr
 660 665

<210>410

<211>312

<212>PRT

<213>Chlamydia pneumoniae

<400>410

Thr Val Phe Asn Phe Lys Arg Phe Tyr Gln Lys Asp Ser Gln Arg Gln
 1 5 10 15

Asn Gly Asn Thr Thr Cys Leu Arg Pro Phe Lys Lys Thr Cys Lys Glu
 20 25 30

Leu Ile Glu Phe Arg Arg Arg Thr Val Lys Leu Leu Lys Asn Val Leu
 35 40 45
 Leu Gly Leu Phe Phe Ser Met Ser Ile Ser Gly Phe Ser Glu Val Lys
 50 55 60
 Val Ser Asp Thr Phe Val Lys Gln Asp Thr Val Val Glu Pro Lys Ile
 65 70 75 80
 Arg Val Leu Leu Ser Asn Glu Ser Thr Thr Ala Leu Ile Glu Ala Lys
 85 90 95
 Gly Pro Tyr Arg Ile Tyr Gly Asp Asn Val Leu Leu Asp Thr Ala Ile
 100 105 110
 Gln Gly Gln Arg Cys Val Val His Ala Leu Tyr Glu Gly Ile Arg Trp
 115 120 125
 Gly Glu Phe Tyr Pro Gly Leu Gln Cys Leu Lys Ile Glu Pro Val Asp
 130 135 140
 Asp Thr Ala Ser Leu Phe Phe Asn Gly Ile Gln Tyr Gln Gly Ser Leu
 145 150 155 160
 Tyr Val His Arg Lys Asp Asn His Cys Ile Met Val Ser Asn Glu Val
 165 170 175
 Thr Ile Glu Asp Tyr Leu Lys Ser Val Leu Ser Ile Lys Tyr Leu Glu
 180 185 190
 Glu Leu Asp Lys Glu Ala Leu Ser Ala Cys Ile Ile Leu Glu Arg Thr
 195 200 205
 Ala Leu Tyr Glu Lys Leu Leu Ala Arg Asn Pro Gln Asn Phe Trp His
 210 215 220
 Val Lys Ala Glu Glu Glu Gly Tyr Ala Gly Phe Gly Val Thr Lys Gln
 225 230 235 240
 Phe Tyr Gly Val Glu Glu Ala Ile Asp Trp Thr Ala Arg Leu Val Val
 245 250 255
 Asp Ser Pro Gln Gly Leu Ile Ile Asp Ala Gln Gly Leu Leu Gln Ser
 260 265 270
 Asn Val Asp Arg Leu Ala Ile Glu Gly Phe Asn Ala Arg Gln Ile Leu
 275 280 285
 Glu Lys Phe Tyr Lys Asp Val Asp Phe Val Val Ile Glu Ser Trp Asn
 290 295 300
 Glu Glu Leu Asp Gly Glu Ile Arg
 305 310

<210>411

<211>337

<212>PRT

<213>Chlamydia pneumoniae

<400>411

Met Thr His Gln Val Ala Val Leu His Gln Asp Lys Lys Phe Asp Val
 1 5 10 15
 Ser Leu Arg Pro Lys Gly Leu Glu Glu Phe Tyr Gly Gln His His Leu
 20 25 30
 Lys Glu Arg Leu Asp Leu Phe Leu Cys Ala Ala Leu Gln Arg Gly Glu
 35 40 45
 Val Pro Gly His Cys Leu Phe Phe Gly Pro Pro Gly Leu Gly Lys Thr
 50 55 60
 Ser Leu Ala His Ile Val Ala Tyr Thr Val Gly Lys Gly Leu Val Leu
 65 70 75 80
 Ala Ser Gly Pro Gln Leu Ile Lys Pro Ser Asp Leu Leu Gly Leu Leu
 85 90 95
 Thr Ser Leu Gln Glu Gly Asp Val Phe Phe Ile Asp Glu Ile His Arg
 100 105 110
 Met Gly Lys Val Ala Glu Glu Tyr Leu Tyr Ser Ala Met Glu Asp Phe
 115 120 125
 Lys Val Asp Ile Thr Ile Asp Ser Gly Pro Gly Ala Arg Ser Val Arg
 130 135 140
 Val Asp Leu Ala Pro Phe Thr Leu Val Gly Ala Thr Thr Arg Ser Gly
 145 150 155 160
 Met Leu Ser Glu Pro Leu Arg Thr Arg Phe Ala Phe Ser Ala Arg Leu
 165 170 175
 Ser Tyr Tyr Ser Asp Gln Asp Leu Lys Glu Ile Leu Val Arg Ser Ser

180 185
 His Leu Leu Gly Ile Glu Ala Asp Ser Ser Ala Leu Leu Glu Ile Ala
 195 200 205
 Lys Arg Ser Arg Gly Thr Pro Arg Leu Ala Asn His Leu Leu Arg Trp
 210 215 220
 Val Arg Asp Phe Ala Gln Ile Arg Glu Gly Asn Cys Ile Asn Gly Asp
 225 230 235 240
 Val Ala Glu Lys Ala Leu Ala Met Leu Leu Ile Asp Asp Trp Gly Leu
 245 250 255
 Asn Glu Ile Asp Ile Lys Leu Leu Thr Thr Ile Ile Asp Tyr Tyr Gln
 260 265 270
 Gly Gly Pro Val Gly Ile Lys Thr Leu Ser Val Ala Val Gly Glu Asp
 275 280 285
 Ile Lys Thr Leu Glu Asp Val Tyr Glu Pro Phe Leu Ile Leu Lys Gly
 290 295 300
 Phe Ile Lys Lys Thr Pro Arg Gly Arg Met Val Thr Gln Leu Ala Tyr
 305 310 315 320
 Asp His Leu Lys Arg His Ala Lys Asn Leu Leu Ser Leu Gly Glu Gly
 325 330 335
 Gln

<210>412

<211>190

<212>PRT

<213>Chlamydia pneumoniae

<400>412

Met Ser Ile Lys Glu Asp Lys Trp Ile Arg Glu Met Ala Leu Asn Ala
 1 5 10 15
 Asp Met Ile His Pro Phe Val Asn Gly Gln Val Asn Val Asn Glu Glu
 20 25 30
 Thr Gly Glu Lys Leu Ile Ser Tyr Gly Leu Ser Ser Tyr Gly Tyr Asp
 35 40 45
 Leu Arg Leu Ser Arg Glu Phe Lys Val Phe Thr Asn Val Tyr Asn Ser
 50 55 60
 Val Val Asp Pro Lys Cys Phe Thr Glu Asp Ile Phe Ile Ser Ile Thr
 65 70 75 80
 Asp Asp Val Cys Ile Val Pro Pro Asn Ser Phe Ala Leu Ala Arg Ser
 85 90 95
 Val Glu Tyr Phe Arg Ile Pro Arg Asn Val Leu Thr Met Cys Ile Gly
 100 105 110
 Lys Ser Thr Tyr Ala Arg Cys Gly Ile Ile Val Asn Val Thr Pro Phe
 115 120 125
 Glu Pro Glu Trp Glu Gly His Val Thr Ile Glu Ile Ser Asn Thr Thr
 130 135 140
 Pro Leu Pro Ala Lys Ile Tyr Ala Asn Glu Gly Ile Ala Gln Val Leu
 145 150 155 160
 Phe Phe Glu Ser Ser Thr Thr Cys Glu Val Ser Tyr Ala Asp Arg Lys
 165 170 175
 Gly Lys Tyr Gln Lys Gln Gln Gly Ile Thr Val Pro Cys Val
 180 185 190

<210>413

<211>165

<212>PRT

<213>Chlamydia pneumoniae

<400>413

Lys Phe Leu Thr Leu Arg His Cys Gln Arg Lys Phe Thr Leu Met Lys
 1 5 10 15
 Gly Leu Pro Arg Ser Tyr Ser Leu Ser Leu Val Arg Pro Ala Arg Phe
 20 25 30
 Leu Met Gln Thr Glu Lys Glu Ser Ile Lys Ser Asn Lys Ala Ser Pro
 35 40 45
 Tyr Leu Val Ser Lys Val Ser Val Arg Lys Lys Asn Trp Gly Phe Arg
 50 55 60
 Leu Leu Glu Glu Val Met Ile Lys Ser Trp Trp Val Ile Phe Ser Ile

65					70					75				80	
Leu	Ile	Gly	Gly	Phe	Val	Tyr	Asp	Arg	Ala	Ile	Gln	Glu	Leu	Arg	Thr
				85					90					95	
Glu	Glu	Leu	Arg	Leu	Gln	Ser	Lys	Val	Ser	Ser	Leu	Cys	Gln	Asp	Ile
			100					105					110		
Leu	Ser	Ala	Gln	Glu	Lys	Gln	Arg	Gln	Leu	Gln	Leu	His	Leu	Gln	His
		115					120					125			
Trp	Gln	Asp	Ser	Ala	Ala	Ile	Glu	Ala	Ala	Leu	Ile	Gln	Arg	Leu	Gly
	130					135					140				
Leu	Ile	Pro	Lys	Gly	Tyr	Lys	Lys	Leu	Cys	Val	Ser	Pro	Lys	Gln	Gln
145					150					155				160	
Ser	Glu	Asn	Lys	Asp											
				165											

<210>414

<211>414

<212>PRT

<213>Chlamydia pneumoniae

<400>414

Lys	Glu	Thr	Met	Ile	Pro	Thr	Met	Leu	Met	Phe	Phe	Ile	Ile	Cys	Phe
1				5					10					15	
Thr	Leu	Cys	Ser	Gly	Phe	Ile	Ser	Leu	Ser	Gln	Ile	Ala	Leu	Phe	Ser
			20					25					30		
Leu	Pro	Thr	Ser	Leu	Ile	Ser	His	Tyr	Lys	Arg	Ser	Lys	Ser	Lys	Lys
		35					40					45			
Gln	Gln	Arg	Val	Ala	Thr	Leu	Leu	Leu	His	Pro	His	His	Leu	Leu	Ile
	50					55				60					
Thr	Leu	Ile	Phe	Cys	Asp	Ile	Gly	Leu	Asn	Ile	Ala	Ile	Gln	Asn	Cys
65					70					75				80	
Phe	Ala	Ile	Leu	Phe	Gly	Asp	Ala	Ala	Ser	Trp	Trp	Phe	Thr	Val	Gly
				85					90					95	
Leu	Pro	Leu	Ala	Ile	Thr	Leu	Ile	Leu	Gly	Glu	Ile	Leu	Pro	Lys	Ala
		100						105					110		
Val	Ala	Leu	Pro	Phe	Asn	Thr	Gln	Ile	Ala	Ser	Ser	Val	Ala	Pro	Leu
	115						120					125			
Ile	Leu	Cys	Val	Thr	Lys	Ile	Phe	Lys	Pro	Leu	Leu	His	Trp	Gly	Ile
	130					135					140				
Val	Gly	Ile	Asn	Tyr	Val	Val	Gln	Trp	Ile	Leu	Ser	Lys	Gln	Gln	Ile
145					150					155				160	
Asp	Ile	Ile	Gln	Pro	Gln	Glu	Leu	Lys	Glu	Val	Leu	Gln	Ser	Cys	Lys
			165						170					175	
Asp	Phe	Gly	Val	Val	Asn	Gln	Glu	Glu	Ser	Arg	Leu	Leu	Tyr	Gly	Tyr
		180					185						190		
Leu	Ser	Leu	Ser	Asp	Cys	Ser	Val	Lys	Glu	Arg	Met	Gln	Pro	Arg	Gln
	195						200					205			
Asp	Ile	Leu	Phe	Tyr	Asp	Ile	Gln	Thr	Pro	Leu	Glu	Asn	Leu	Tyr	Leu
	210					215					220				
Leu	Phe	Ser	Lys	Gln	His	Cys	Ser	Arg	Val	Pro	Ile	Cys	Asn	Asp	Asn
225					230					235				240	
Leu	Gln	Asn	Leu	Leu	Gly	Ile	Cys	Thr	Ala	Arg	Ser	Leu	Leu	Leu	His
			245						250					255	
Asp	Lys	Pro	Leu	Gln	Ser	Ser	Asp	Asp	Leu	Leu	Pro	Leu	Leu	Lys	Lys
		260						265					270		
Pro	Tyr	Tyr	Met	Pro	Glu	Thr	Ile	Ser	Ala	Lys	Met	Ala	Leu	Cys	Gln
	275						280					285			
Met	Ala	Ala	Glu	Asp	Glu	Thr	Leu	Gly	Met	Ile	Ile	Asp	Glu	Tyr	Gly
	290					295					300				
Ser	Ile	Glu	Gly	Leu	Ile	Thr	Gln	Glu	Asp	Leu	Phe	Glu	Ile	Val	Ala
305					310					315				320	
Gly	Glu	Ile	Val	Asp	Gln	Arg	Asp	Asn	Lys	Ile	Leu	Tyr	Thr	Thr	Ser
			325						330					335	
Gly	Ala	Asp	Val	Ile	Ile	Ala	Ser	Gly	Thr	Leu	Glu	Leu	Arg	Glu	Phe
		340						345					350		
Ser	Glu	Ile	Phe	Asp	Ile	Asn	Leu	Pro	Thr	Asn	Asn	Asn	Ile	Ala	Thr
	355						360					365			

Ile Gly Gly Trp Leu Ile Glu Gln Ile Gly Thr Ile Pro Thr Thr Gly
 370 375 380
 Met Lys Leu Ser Trp Asn Asn Leu Leu Phe Gln Val Leu Asp Ala Ala
 385 390 395 400
 Pro Asn Arg Ile Arg Arg Val Tyr Ile Arg Lys Leu Tyr Asp
 405 410
 <210>415
 <211>404
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>415
 Met Thr Asn Ser Ala Leu Phe Trp Ile Gly Val Asn Ile Ile Cys Ile
 1 5 10 15
 Val Leu Gln Gly Phe Tyr Ser Met Met Glu Met Ala Cys Val Ser Phe
 20 25 30
 Asn Arg Val Arg Leu Gln Tyr Tyr Leu Thr Lys Asp His Lys Lys Ala
 35 40 45
 Arg Tyr Ile Asn Phe Leu Ile Arg Arg Pro Tyr Arg Leu Phe Gly Thr
 50 55 60
 Val Met Leu Gly Val Asn Ile Ala Leu Gln Val Gly Ser Glu Ser Ser
 65 70 75 80
 Arg Asn Cys Tyr Arg Ala Leu Gly Ile Thr Pro Asp Tyr Ala Pro Phe
 85 90 95
 Thr Gln Ile Phe Ile Val Val Ile Phe Ala Glu Leu Leu Pro Leu Thr
 100 105 110
 Ile Ser Arg Lys Ile Pro Glu Lys Leu Ala Leu Trp Gly Ala Pro Ile
 115 120 125
 Leu Tyr Tyr Ser His Tyr Ile Phe Tyr Pro Leu Ile Gln Leu Ile Gly
 130 135 140
 Ser Leu Thr Glu Gly Leu Tyr Tyr Leu Leu Asn Ile Arg Lys Glu Lys
 145 150 155 160
 Leu Asn Ser Thr Leu Ser Arg Asp Glu Phe Gln Lys Ala Leu Glu Thr
 165 170 175
 His His Glu Glu Gln Asp Phe Asn Thr Ile Ala Thr Asn Ile Phe Ser
 180 185 190
 Leu Ser Ala Thr Cys Ala Asp Gln Val Cys Gln Pro Leu Glu Gln Val
 195 200 205
 Thr Met Leu Pro Ser Ser Ala Asn Val Lys Asp Phe Cys Arg Thr Ile
 210 215 220
 Lys Asn Thr Asp Ile Asn Phe Ile Pro Val Tyr His Lys Ala Arg Lys
 225 230 235 240
 Asn Val Ile Gly Ile Ala His Pro Lys Asp Phe Val Asn Lys Ala Leu
 245 250 255
 Asp Glu Pro Leu Ile Asn Asn Leu His Ser Pro Trp Phe Ile Thr Ala
 260 265 270
 Lys Ser Lys Leu Ile Arg Ile Leu Lys Glu Phe Arg Asp Asn Arg Ser
 275 280 285
 Ser Val Ala Val Val Leu Asn Ala Ser Gly Glu Pro Ile Gly Ile Leu
 290 295 300
 Ser Leu Asn Ala Ile Phe Lys Ile Leu Phe Asn Thr Thr Asn Ile Ala
 305 310 315 320
 His Leu Lys Pro Lys Thr Ile Ser Val Ile Glu Arg Thr Phe Pro Gly
 325 330 335
 Asn Ser Arg Ile Lys Asp Leu Gln Lys Glu Leu Asp Ile Gln Phe Pro
 340 345 350
 Gln Tyr Pro Val Glu Thr Leu Ala Gln Leu Val Leu Gln Leu Leu Asp
 355 360 365
 Ser Pro Ala Glu Val Gly Thr Ser Val Ile Ile Asn Asn Leu Leu Leu
 370 375 380
 Glu Val Lys Glu Met Ser Leu Ser Gly Ile Lys Thr Val Ser Ile Lys
 385 390 395 400
 Asn Leu Leu Ser
 <210>416

<211>373
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>416

Tyr Ser Met Ile Tyr Leu Asp Asn Asn Ala Met Thr Pro Pro Glu Arg
 1 5 10 15
 Gly Leu Leu Glu Phe Leu Gln Lys Thr Phe Leu Ile Glu Gly Thr Tyr
 20 25 30
 Ala Asn Pro Ser Ser Val His Gln Leu Gly Lys Lys Ser Arg Gln Leu
 35 40 45
 Val Leu Glu Ala Ser His Trp Met Gln Lys Val Leu Ser Phe Gln Gly
 50 55 60
 Arg Val Leu Tyr Thr Ser Gly Ala Thr Glu Ser Leu Asn Leu Ala Ile
 65 70 75 80
 Ala Ser Leu Pro Lys Asp Ser His Val Ile Thr Ser Gly Ser Glu His
 85 90 95
 Pro Ala Ile Leu Glu Pro Leu Lys His Ser Ser Leu Ser Val Ser Tyr
 100 105 110
 Leu Asn Pro Glu Glu Gly Arg Cys Val Leu Thr Ile Glu Gln Ile Glu
 115 120 125
 Arg Ala Val Thr Pro Lys Thr Ser Ala Ile Ile Leu Gly Trp Val Asn
 130 135 140
 Ser Glu Thr Gly Ala Lys Ala Asp Ile Ala Ala Ile Ala His Phe Ala
 145 150 155 160
 Gln Glu Arg Gln Leu Gln Phe Ile Val Asp Ala Thr Ala Asn Val Gly
 165 170 175
 Lys Glu Arg Ile Val Leu Pro Ser Gly Val Thr Met Ala Ala Phe Ser
 180 185 190
 Gly His Lys Phe His Ala Leu Ser Gly Ile Gly Ala Leu Leu Val Ser
 195 200 205
 Pro Gly Val Lys Leu His Pro Gln Leu Trp Gly Gly Gly Gln Gln Gly
 210 215 220
 Gly Leu Arg Ala Gly Thr Glu Asn Leu Trp Gly Ile Ala Ser Leu Leu
 225 230 235 240
 Tyr Ile Phe Lys Tyr Leu Asp Leu His Gln Glu Arg Ile Ser Gln Glu
 245 250 255
 Ile Leu Thr His Arg Asn Gly Phe Glu Lys Ala Ile Lys Ala Arg Ile
 260 265 270
 Pro Asp Val His Ile His Cys Ala Asp Gln Pro Arg Ala Asn Asn Val
 275 280 285
 Ser Ala Ile Ala Phe Pro Pro Leu Glu Gly Glu Val Leu Gln Ile Ala
 290 295 300
 Leu Asp Ile Glu Gly Val Ala Cys Gly Tyr Gly Ser Ala Cys Ser Ser
 305 310 315 320
 Gly Ala Thr Ala Pro Phe Lys Ser Leu Val Ser Met Gly Val Asp Glu
 325 330 335
 Glu Leu Thr Leu Ala Thr Leu Arg Phe Ser Phe Ser His Leu Leu Leu
 340 345 350
 Gln Glu Asp Val Glu Arg Ala Val Gly Ile Ile Glu Lys Val Val Glu
 355 360 365
 Arg Leu Lys Asn Ser
 370

<210>417
 <211>248
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>417

Glu His Phe Val Asp Phe Asp Tyr Phe Gly Leu Ser Asp Ile Gly Arg
 1 5 10 15
 Val Arg Ala Arg Asn Glu Asp Phe Trp Gln Val Asn Leu Met Ser Gln
 20 25 30
 Val Val Ala Ile Ala Asp Gly Val Gly Gly Arg Leu Gly Gly Asp Ile
 35 40 45
 Ala Ser Gln Glu Ala Val Thr Ser Leu Met Glu Leu Ile Asp Glu Gln

50 55 60
 Gln Ser Lys Leu Met Gly Tyr Glu Asp Asp Gln Tyr Lys Glu Thr Leu
 65 70 75 80
 Lys Lys Ile Leu Leu Glu Val Asn Gly Val Val Tyr Glu His Gly Gln
 85 90 95
 Met Glu Glu His Leu Gln Gly Met Gly Thr Thr Leu Ser Phe Ile Gln
 100 105 110
 Phe Arg Lys Asp Arg Ala Trp Leu Phe His Val Gly Asp Ser Arg Ile
 115 120 125
 Tyr Arg Ile Arg Glu Gly Glu Leu Arg Arg Leu Thr Glu Asp His Ser
 130 135 140
 Leu Glu Asn Gln Leu Lys Asn Arg Tyr Gly Leu Pro Lys Gln Ser Asp
 145 150 155 160
 Lys Val Tyr Ser Tyr Arg His Ile Leu Thr Asn Val Leu Gly Ser Arg
 165 170 175
 Pro Tyr Val Met Pro Asp Ile Arg Asn Leu Pro Cys Glu Lys Glu Asp
 180 185 190
 Leu Tyr Cys Leu Cys Ser Asp Gly Leu Thr Asn Met Val Pro Asp Ile
 195 200 205
 Asp Ile Arg Asp Ile Leu Asn Gln Pro Ala Thr Leu Glu Glu Arg Gly
 210 215 220
 Asn Ala Leu Ile Ser Leu Ala Asn Thr Arg Gly Gly Asp Asp Asn Ala
 225 230 235 240
 Thr Val Val Leu Val Arg Ile Gln
 245

<210>418

<211>255

<212>PRT

<213>Chlamydia pneumoniae

<400>418

Tyr Lys Leu Met Arg Val Leu Asn Gly Lys Ser Leu Asn Cys Glu Ser
 1 5 10 15
 Ile Asp Leu Lys Ser Lys Asn Phe Pro Arg Ala Arg Ile Phe Cys Lys
 20 25 30
 Ile Ser Asn Leu Arg Thr Val Thr Met Arg Lys Met Leu Val Leu Leu
 35 40 45
 Ala Ser Leu Gly Leu Leu Ser Pro Thr Leu Ser Ser Cys Thr His Leu
 50 55 60
 Gly Ser Ser Gly Ser Tyr His Pro Lys Leu Tyr Thr Ser Gly Ser Lys
 65 70 75 80
 Thr Lys Gly Val Ile Ala Met Leu Pro Val Phe His Arg Pro Gly Lys
 85 90 95
 Ser Leu Glu Pro Leu Pro Trp Asn Leu Gln Gly Glu Phe Thr Glu Glu
 100 105 110
 Ile Ser Lys Arg Phe Tyr Ala Ser Glu Lys Val Phe Leu Ile Lys His
 115 120 125
 Asn Ala Ser Pro Gln Thr Val Ser Gln Phe Tyr Ala Pro Ile Ala Asn
 130 135 140
 Arg Leu Pro Glu Thr Ile Ile Glu Gln Phe Leu Pro Ala Glu Phe Ile
 145 150 155 160
 Val Ala Thr Glu Leu Leu Glu Gln Lys Thr Gly Lys Glu Ala Gly Val
 165 170 175
 Asp Ser Val Thr Ala Ser Val Arg Val Arg Val Phe Asp Ile Arg His
 180 185 190
 His Lys Ile Ala Leu Ile Tyr Gln Glu Ile Ile Glu Cys Ser Gln Pro
 195 200 205
 Leu Thr Thr Leu Val Asn Asp Tyr His Arg Tyr Gly Trp Asn Ser Lys
 210 215 220
 His Phe Asp Ser Thr Pro Met Gly Leu Met His Ser Arg Leu Phe Arg
 225 230 235 240
 Glu Val Val Ala Arg Val Glu Gly Tyr Val Cys Ala Asn Tyr Ser
 245 250 255

<210>419

<211>231

<212>PRT
 <213>Chlamydia pneumoniae
 <400>419
 Gly Asn Val Gln Val Tyr Ser Ser Leu Val Pro Trp Arg Arg Cys Ser
 1 5 10 15
 Ser Phe Gln Lys Leu Leu Tyr Leu Ala Ser Thr Leu Trp Glu Asn Thr
 20 25 30
 Phe Lys Xaa Arg Gln Val Leu Phe Gly Gly Ala Leu Leu Val Phe Ser
 35 40 45
 Ser Leu Val Ala Leu Ser Val Ser Ser Gln Thr Ala Glu Leu Leu Ser
 50 55 60
 Thr Met Thr Gly Ile Ser Leu Ala Phe Ala Phe Leu Phe Tyr Leu Xaa
 65 70 75 80
 Phe Leu Pro Lys Asp Ile Thr Arg Ala Ile Leu Phe Ser Gly Glu Arg
 85 90 95
 Xaa Val Lys Thr Ser Trp Arg Ala Leu Gly Ser Ala Ile Arg Met Trp
 100 105 110
 Ile Ile Ile Ile Pro Val Thr Gln Leu Ile Gly Ile Met Met Ser Lys
 115 120 125
 Phe Ile Thr Leu Val Leu Pro Thr Gln Glu Ile His Thr Gln Glu Val
 130 135 140
 Thr Gln Glu Val Gln Asn Ser Leu Pro Ile Thr Gly His Tyr Ile Ser
 145 150 155 160
 Met Ile Leu Asn Leu Gly Val Leu Thr Pro Phe Gly Glu Glu Val Phe
 165 170 175
 Phe Arg Gly Ile Leu Gln Thr Phe Leu Lys Asn Lys Met Thr Arg Ile
 180 185 190
 Ala Ala Val Leu Cys Ser Ser Ile Ile Phe Ser Phe Ile His Ile Glu
 195 200 205
 His Ser Leu Gly Ser Trp Val Phe Cys Pro Arg Ala Leu Cys Phe Ser
 210 215 220
 Leu Ile Cys Arg Val Ser Ile
 225 230

<210>420

<211>130

<212>PRT

<213>Chlamydia pneumoniae

<400>420

Met Arg Asp His Ala Phe Ser Lys Leu Ile Gly Thr Val Arg Ala Met
 1 5 10 15
 Val Val Glu Gly Arg Cys Pro Trp Ser Leu Gln Gln Ser Leu Val Ser
 20 25 30
 Met Val Glu His Ile Leu Gly Glu Cys Gln Glu Phe His Glu Ala Val
 35 40 45
 Leu Gln Gly Lys Thr Val Gln Glu Val Gly Ser Glu Ala Gly Asp Val
 50 55 60
 Leu Thr Leu Val Leu Ile Leu Cys Phe Leu Leu Glu Arg Glu Gly Val
 65 70 75 80
 Leu Ala Ser Glu Asp Val Ala Asn Glu Ala Met Glu Lys Leu Arg Arg
 85 90 95
 Arg Ala Pro Tyr Ile Phe Ala Glu Asp Tyr Lys Pro Val Ser Ile Glu
 100 105 110
 Glu Ala Asp Arg Leu Trp Glu Leu Ala Lys His Arg Glu Lys Asn Glu
 115 120 125
 Ser Thr
 130

<210>421

<211>375

<212>PRT

<213>Chlamydia pneumoniae

<400>421

Asn Phe Lys Arg Phe Cys Met Thr Lys Ile Ala Phe Ser Glu Lys Ala
 1 5 10 15
 Lys Asn Phe Pro Val Glu Ala Leu Lys Lys Trp Phe Glu Lys Asn Lys

20 25
 Arg Ser Leu Pro Trp Arg Asp Asn Pro Thr Pro Tyr Ser Val Trp Val
 35 40 45
 Ser Glu Val Met Leu Gln Gln Thr Arg Ala Glu Val Val Ile Asp Tyr
 50 55 60
 Phe Asn Gln Trp Met Glu Arg Phe Pro Thr Ile Glu Ser Leu Ala Ala
 65 70 75 80
 Ala Lys Glu Glu Asp Val Ile Lys Leu Trp Glu Gly Leu Gly Tyr Tyr
 85 90 95
 Ser Arg Ala Arg His Leu Leu Glu Gly Ala Arg Met Val Met Glu Glu
 100 105 110
 Phe His Gly Lys Ile Pro Asp Asp Ala Ile Ser Leu Ala Gln Ile Arg
 115 120 125
 Gly Val Gly Pro Tyr Thr Val His Ala Ile Leu Ala Phe Ala Phe Lys
 130 135 140
 Arg Arg Ala Ala Ala Val Asp Gly Asn Val Leu Arg Val Leu Ser Arg
 145 150 155 160
 Ile Phe Leu Ile Glu Thr Ser Ile Asp Leu Glu Ser Thr Arg Thr Trp
 165 170 175
 Val Ser Arg Ile Ala Gln Ala Leu Leu Pro His Lys Ser Pro Glu Val
 180 185 190
 Ile Ala Glu Ala Leu Ile Glu Leu Gly Ala Cys Ile Cys Lys Lys Val
 195 200 205
 Pro Gln Cys His Arg Cys Pro Val Arg Gln Ala Cys Gly Ala Trp Arg
 210 215 220
 Glu Asn Lys Gln Phe Val Leu Pro Val Arg His Ala Arg Lys Lys Val
 225 230 235 240
 Ile Phe Leu His Arg Leu Val Ala Ile Val Leu Tyr Asp Gly Ser Leu
 245 250 255
 Val Val Glu Lys Arg Arg Pro Lys Glu Met Met Ala Gly Leu Tyr Glu
 260 265 270
 Phe Pro Tyr Ile Glu Val Glu Pro Glu Glu Gly Leu Gln Asp Ile Glu
 275 280 285
 Gly Phe Thr Lys Lys Met Glu Leu Ser Leu Glu Ser Pro Leu Glu Phe
 290 295 300
 Leu Gly Asn Leu Lys Glu Gln Arg His Ala Phe Thr Asn His Lys Val
 305 310 315 320
 His Leu Cys Pro Ile Ile Phe Lys Ala Thr Ser Leu Pro Gln Phe Gly
 325 330 335
 Glu Leu His Leu Leu Ser Asp Ile Asp His Leu Ala Phe Ser Ser Gly
 340 345 350
 His Lys Lys Ile Lys Asp Ala Leu Leu Ile Tyr Leu Gly Asp Val Arg
 355 360 365
 Ser Arg Glu Ser Ile Gly Val
 370 375

<210>422

<211>234

<212>PRT

<213>Chlamydia pneumoniae

<400>422

Asn Phe Met Gln Leu Ser Asn Asp Lys Arg Ala Ala Leu Gln Tyr Phe
 1 5 10 15
 Met Glu Asn Phe Ser Trp Leu Ala Thr Gln Val Ser Arg Leu Ser Ser
 20 25 30
 Phe Leu Arg Ser Gln Leu Pro Asn His Ser Lys Gln Glu Ile Leu Ala
 35 40 45
 Ser Ile Arg Gln His Arg Cys Arg Val Asn Gly Phe Ile Glu Arg Phe
 50 55 60
 Glu Ser Tyr Lys Val Gln Pro Gly Asp Arg Val Ser Leu Ser Leu Ile
 65 70 75 80
 Pro Ser Thr Lys Gln Gln Pro Ser Ile Leu Trp Glu Asp Asp Tyr Ser
 85 90 95
 Ile Ile Tyr Glu Lys Pro Pro His Leu Thr Thr Glu Gln Met Ala His
 100 105 110

Met Thr Arg Phe Phe Thr Val His Arg Leu Asp Lys Gly Thr Ser Gly
 115 120 125
 Cys Leu Leu Met Gly Lys Ser Lys Gln Ala Ala Thr Glu Leu Met Lys
 130 135 140
 Leu Phe Lys Gln Arg Lys Ile His Lys Gln Tyr Ile Ala Phe Val Phe
 145 150 155
 Gly His Pro Lys Lys Phe Gly Thr Val Lys Ser Tyr Thr Ala Pro
 165 170 175
 Val Tyr Arg Arg Cys Gly Ala Val Ile Phe Gly Ala Ala Gly Pro Ser
 180 185 190
 Gln Gly Glu Pro Ile Lys Ser Ala Tyr Lys Trp Asp Cys Trp Val Ile
 195 200 205
 Leu Leu Ser Glu Met Ser Thr Thr Asp Leu Lys Asn Ser Leu Pro Arg
 210 215 220
 Ser Ser Ala Leu Ser Ser Met Leu Thr Pro
 225 230

<210>423

<211>364

<212>PRT

<213>Chlamydia pneumoniae

<400>423

Glu Leu Glu Ala Leu Glu Gln Lys Tyr Gly Lys Ala Val Leu Leu Ile
 1 5 10 15
 Ala Leu Ser Glu Leu Gly Ile Asp Thr Met Ser Leu Leu Ser Gly His
 20 25 30
 Arg Leu Glu Gly Phe Pro Pro Ile Ala Glu Val Met Ala Ala Cys Asp
 35 40 45
 Arg Cys Ser Met Asp Phe Cys Glu Ile Leu Lys Ser Gln Ser Met Asp
 50 55 60
 Leu Trp Ala Asp Ala Ala Ser Cys Val Asp Gly Leu Leu Gln Asp Pro
 65 70 75 80
 Phe Trp Ser Thr Ala Ile Ala Ser Gly Ile Ala Lys Ser Ser Leu Gln
 85 90 95
 Glu Thr Glu Phe Glu Cys Glu Ser Lys Val Met Val Leu Ser Ser Trp
 100 105 110
 Gly Glu Gln Gly Ala Gln Val Cys Ser Pro Phe Asn Leu Glu Arg Ile
 115 120 125
 Cys Met Ser Phe Pro Ser Leu Lys Val Phe Ser Leu Lys Lys Asn Gly
 130 135 140
 Cys Glu Asn Met Gly Ile Gln Leu Ser Ala Ser Cys Met Asn Leu Leu
 145 150 155 160
 Met Ser Ile Phe Phe Val Ala Thr Asn Gly Gly Ser Thr Pro Ile Trp
 165 170 175
 Ile Thr Lys Glu Asn Leu Met Ala Leu Val Ala Leu Val Leu Ser His
 180 185 190
 Tyr Gln Cys Tyr Phe Val Pro Ala Thr Gly Asp Pro Gln Arg Gly Asn
 195 200 205
 Ile Leu Gly Asn Pro Glu Val Asn Ala Ile Leu Ala Arg Gly Met Gly
 210 215 220
 Met Arg Val Asp Leu Glu Arg Lys Arg Gly Gly Glu Ser Ser Ser Ser
 225 230 235 240
 Arg Tyr Leu Glu Leu Ala Ala Arg Cys Phe Glu Asn Ser Leu Thr Lys
 245 250 255
 Thr Ser Leu Leu Ser Asp Ala Asn Asn Val Gln Glu Arg Asp Lys Cys
 260 265 270
 Leu Leu Gln Met Ser Thr Ser Leu Met His Thr Ala Gly Leu Asn Leu
 275 280 285
 Gln Arg Pro Pro Val Pro Thr Pro Ser Gly Val Thr Ala His Pro Gln
 290 295 300
 Pro Gln Pro Asp Pro Val Val Thr Ser Gln Pro Ser Leu Leu Gly Ala
 305 310 315 320
 Arg Glu Arg Ser Pro Val Ser Ser Arg Gly Arg Phe Pro Val Val Leu
 325 330 335
 Pro Leu Ser Val Ile Ser Pro Arg Ser His Pro Gly Arg Val Glu Arg

340 345
Arg Asp Leu Glu Asp Glu Glu Glu Val Met Phe
355 360

<210>424

<211>283

<212>PRT

<213>Chlamydia pneumoniae

<400>424

Asn Ile Gln Thr Ser His Ser Arg Val Leu Leu Lys Lys Phe Ser Lys
1 5 10 15
Glu Phe Thr Ile Arg Thr Tyr Arg Ser Leu Gly Phe Thr Asp Tyr Leu
20 25 30
Gly Gly Cys Leu Thr Asn Pro Leu Gly Lys Phe Pro Ser Pro Gln Asn
35 40 45
Pro Gln Val Val Thr Ile Ala Pro Ser Ser Thr Thr Pro Gln Ala Val
50 55 60
Ser Ser Ala Val Gln Gly Phe Leu Gln Thr Gly Gly Ala Ala Ser Ser
65 70 75 80
Thr Ala Thr Thr Thr Thr Ala Ser Gly Ala Ser Ala Leu Gly Leu Ser
85 90 95
Pro Asp Gln Val Gln Ala Leu Leu Thr Asn Leu Leu Asn Val Gly Gln
100 105 110
Pro Ser Val Gly Gln Pro Ser Thr Ser Ala Gly Thr Ser Gly Ala Ser
115 120 125
Ser Ser Ser Ala Ser Met Gln Gln Gln Leu Leu Gln Leu Ile Leu Asp
130 135 140
Lys Thr Thr Gly Ser Gly Gly Ser Ser Val Ser Ser Glu Gln Leu Gln
145 150 155 160
Gln Leu Leu Ser Leu Val Ser Gln Met Thr Thr Ser Gln Gly Gly Ser
165 170 175
Gly Gly Thr Gln Ala Gly Gln Ala Ala Ser Val Leu Leu Asn Leu Leu
180 185 190
Ser Ala Thr Gly Ser Ala Ala Ala Asn Pro Leu Gly Thr Ala Ala Ser
195 200 205
Leu Ala Gln Ile Ile Tyr Ala Ala Val Thr Ser Pro Gly Ala Lys Lys
210 215 220
Thr Ser Glu Phe Cys Tyr Asn Tyr Cys Gly Glu Thr Cys Gln Gly Asn
225 230 235 240
Cys Gly Cys Pro Thr Cys Gly Cys Pro Asp Gly Gln Cys Gly Cys Gly
245 250 255
Gly Phe Gly Arg Phe Phe Cys Gly Val Trp Lys Asn Cys Cys Gly Ile
260 265 270
Gly Glu Gly Ser Gln Glu Pro Ala Ile Pro Leu
275 280

<210>425

<211>302

<212>PRT

<213>Chlamydia pneumoniae

<400>425

Gly Gly Phe Met Leu Lys Ile Asp Leu Thr Gly Lys Val Ala Phe Val
1 5 10 15
Ala Gly Ile Gly Asp Asp Gln Gly Tyr Gly Trp Gly Ile Ala Lys Leu
20 25 30
Leu Ala Glu Ala Gly Ala Thr Ile Val Gly Thr Trp Val Pro Ile
35 40 45
Tyr Lys Ile Phe Ser Gln Ser Trp Glu Leu Gly Lys Phe Asn Glu Ser
50 55 60
Arg Lys Leu Ser Asn Gly Thr Leu Leu Glu Ile Ala Lys Ile Tyr Pro
65 70 75 80
Met Asp Ala Ser Phe Asp Ser Pro Glu Asp Val Pro Glu Asp Ile Ala
85 90 95
Glu Asn Lys Arg Tyr Lys Gly Ile Thr Gly Phe Thr Ile Ser Glu Val
100 105 110
Ala Glu Gln Val Lys Lys Asp Phe Gly His Ile Asp Ile Leu Val His

115	120	125
Ser Leu Ala Asn Ser Pro Glu Ile Ser Lys Ser Leu Glu Thr Ser		
130	135	140
Arg Lys Gly Tyr Leu Ala Leu Ser Ala Ser Ser Tyr Ser Phe Val		
145	150	155
Ser Leu Leu Ser His Phe Gly Ser Ile Met Asn Arg Gly Gly Ser Thr		
165	170	175
Ile Ser Leu Thr Tyr Leu Ala Ser Met Arg Ala Val Pro Gly Tyr Gly		
180	185	190
Gly Gly Met Ser Ser Ala Lys Ala Ala Leu Glu Ser Asp Thr Lys Thr		
195	200	205
Leu Ala Trp Glu Ala Gly Arg Arg Trp Gly Ile Arg Val Asn Thr Ile		
210	215	220
Ser Ala Gly Pro Leu Ala Ser Arg Ala Gly Lys Ala Ile Gly Phe Ile		
225	230	235
Glu Arg Met Val Asp Tyr Tyr Gln Glu Trp Ala Pro Ile Pro Glu Ala		
245	250	255
Met Asn Ala Glu Gln Val Gly Ala Val Ala Ala Phe Leu Ala Ser Pro		
260	265	270
Leu Ala Ser Ala Ile Thr Gly Glu Thr Leu Tyr Val Asp His Gly Ala		
275	280	285
Asn Val Met Gly Ile Gly Pro Glu Met Phe Pro Lys Asp Ser		
290	295	300

<210>426

<211>300

<212>PRT

<213>Chlamydia pneumoniae

<400>426

Asn Tyr Gly Asp Ala Met Glu Lys Leu Leu Val Thr Asp Ile Asp Gly		
1	5	10
Thr Ile Thr His Gln Ser His His Leu Asp Lys Lys Val Tyr Glu Arg		
20	25	30
Leu Tyr Ala Leu His Gln Ala Gly Trp Lys Leu Phe Phe Leu Thr Gly		
35	40	45
Arg Tyr Tyr Lys Tyr Ala Ala Arg Leu Phe Ser Asp Phe Asp Ala Pro		
50	55	60
Tyr Leu Leu Gly Cys Gln Asn Gly Ala Ser Val Trp Ser Ser Thr Ser		
65	70	75
Ser Asn Leu Leu Tyr Ser Lys Ser Leu Pro Ser Asp Leu Leu Cys Ile		
85	90	95
Leu Gln Asp Cys Met Glu Gly Ala Thr Ala Leu Phe Ser Val Glu Ser		
100	105	110
Gly Ala Pro Tyr Gly Asp His Tyr Tyr Arg Phe Ser Pro Thr Pro Ile		
115	120	125
Ala Gln Asp Leu His Glu Tyr Val Asp Pro Arg Tyr Phe Pro Asn Ala		
130	135	140
Lys Glu Arg Glu Ile Leu Phe Glu Thr Arg Ser Leu Lys Asp Asp Tyr		
145	150	155
Ala Phe Pro Ser Phe Ala Ala Ala Lys Val Phe Gly Leu Arg Asp Glu		
165	170	175
Val Ile Arg Ile Gln Lys Glu Leu Glu Arg Gln Glu Ala Leu Thr Ser		
180	185	190
Val Ala Thr Met Thr Leu Met Arg Trp Pro Phe Asp Phe Arg Tyr Ala		
195	200	205
Ile Leu Phe Leu Thr Asp Lys Ser Val Ser Lys Gly Lys Ala Leu Asp		
210	215	220
Arg Val Val Asn Ile Leu Tyr Asp Gly Lys Lys Pro Phe Val Met Ala		
225	230	235
Ser Gly Asp Asp Ala Asn Asp Leu Asp Leu Ile Glu Arg Gly Asp Phe		
245	250	255
Lys Ile Val Met Ser Ser Ala Pro Glu Glu Met His Val His Ala Asp		
260	265	270
Phe Leu Ala Pro Pro Ala Asp Lys Asn Gly Ile Leu Ser Ala Trp Glu		
275	280	285

Ala Gly Val Arg Tyr Tyr Asp Asp Leu Met Ser Leu
 290 295 300

<210>427

<211>164

<212>PRT

<213>Chlamydia pneumoniae

<400>427

Ser Arg Val Leu His Met Phe Phe Asn Leu Phe Ser Leu Val Phe Lys
 1 5 10 15
 Leu Ser Asp Glu Leu Ala Leu Ala Glu Thr Ile Gln Glu Pro Ile Ser
 20 25 30
 Val His Glu Met Phe Pro Gly Ser Met Lys Leu Glu Met Phe Lys Met
 35 40 45
 Leu Gly Ser Leu Ile Leu Leu Leu Thr Ile Phe Gly Phe Gly Val Trp
 50 55 60
 Ala Phe Lys Lys Phe Val Arg Ser Arg Ser His Gly Phe Gly Gly Ser
 65 70 75 80
 Ser Gln Ile Lys Ile Leu Glu Arg Arg Ser Leu Thr Pro Lys Thr Ser
 85 90 95
 Ile Tyr Leu Ile Arg Val Val Asn Lys Thr Leu Val Ile Ala Glu Thr
 100 105 110
 Pro Glu Lys Ile Thr Leu Leu Thr Glu Phe Pro Pro Asp Thr Asp Ile
 115 120 125
 Asn His Leu Leu Gln Glu Asn Asn Lys Gln Ser Ser Ser Ser Ala Thr
 130 135 140
 Ser Asp Phe Leu Ser Lys Ala Ile Gln Lys Ile Gln Lys Lys Gln Gln
 145 150 155 160
 Thr Asn Gln Asp

<210>428

<211>161

<212>PRT

<213>Chlamydia pneumoniae

<400>428

Met Thr Thr Trp Thr Leu Asn Gln Asn Asn Leu Thr Lys Phe Leu Lys
 1 5 10 15
 Ser Ser Asp Glu Glu Pro Phe Leu Glu Arg Glu Ser Gly Leu Thr Tyr
 20 25 30
 Ile Asn Ile Gln Ala Asn Gly Asn Glu Leu Pro Leu Phe Phe Val Ile
 35 40 45
 Arg Ser Glu Gly Glu Ile Leu Gln Leu Ile Cys Tyr Leu Pro Tyr Gln
 50 55 60
 Leu His Glu Ser His Lys Ala Ser Thr Ala Arg Leu Leu His Leu Leu
 65 70 75 80
 Asn Arg Asp Ile Asp Ile Pro Gly Phe Gly Met Asp Glu Glu Gln Gly
 85 90 95
 Leu Ile Phe Tyr Arg Leu Val Leu Pro Cys Leu Asn Gly Glu Ile His
 100 105 110
 Asp Thr Leu Leu Arg Ile Tyr Ile Asp Thr Ile Lys Leu Val Cys Asp
 115 120 125
 Ser Phe Ser His Ala Ile Gly Leu Ile Ser Ser Gly Asn Met Asn Leu
 130 135 140
 Asp Glu Leu Arg Arg Gln Ala Leu Gln Glu Gln Gln Glu Lys Arg Asn
 145 150 155 160
 Glu

<210>429

<211>249

<212>PRT

<213>Chlamydia pneumoniae

<400>429

Asp Val Arg Leu Phe Lys Ser Asn Lys Lys Asn Val Met Ser Ser Gln
 1 5 10 15
 Thr Met Asp Val Leu Ile Phe Tyr Asp Thr Glu Thr Thr Gly Thr Gln

			20					25					30				
Ile	Glu	Arg	Asp	Arg	Ile	Ile	Glu	Ile	Ala	Ala	Tyr	Asn	Ser	Val	Thr		
		35					40					45					
Asp	Glu	Ser	Phe	Leu	Thr	Tyr	Val	Asn	Pro	Glu	Ile	Pro	Ile	Pro	Asp		
	50					55					60						
Glu	Ala	Ser	Lys	Ile	His	Gly	Ile	Thr	Thr	Asp	Ala	Val	Leu	Ser	Ala		
65					70					75					80		
Pro	Lys	Phe	Pro	Glu	Ala	Tyr	Glu	Gly	Phe	Arg	Lys	Phe	Cys	Gly	Glu		
			85						90					95			
Asp	Ser	Ile	Leu	Val	Ala	His	Asn	Asn	Asp	Gly	Phe	Asp	Phe	Pro	Leu		
		100						105					110				
Leu	Gly	Lys	Glu	Cys	Arg	Arg	His	Ser	Leu	Glu	Pro	Leu	Thr	Asn	Arg		
	115						120					125					
Thr	Ile	Asp	Ser	Leu	Lys	Trp	Ala	Gln	Lys	Tyr	Arg	Pro	Asp	Leu	Pro		
	130					135					140						
Lys	His	Asn	Leu	Gln	Tyr	Leu	Arg	Gln	Val	Tyr	Gly	Phe	Ala	Glu	Asn		
145				150						155					160		
Gln	Ala	His	Arg	Ala	Leu	Asp	Asp	Val	Val	Ile	Leu	His	Lys	Val	Phe		
			165					170						175			
Thr	Ser	Leu	Ile	Gly	Asp	Leu	Pro	Pro	Gln	Gln	Val	Leu	Asp	Leu	Leu		
		180						185					190				
Gln	Gln	Ser	Tyr	His	Pro	Lys	Val	Phe	Lys	Met	Pro	Phe	Gly	Lys	Tyr		
		195				200					205						
Lys	Gly	Gln	Pro	Leu	Val	Asp	Ile	Pro	Lys	Ser	Tyr	Phe	Glu	Trp	Leu		
	210					215					220						
Glu	Asn	Gln	Gly	Ala	Leu	Asp	Lys	Pro	Glu	Asn	Lys	Asp	Ile	Lys	Ala		
225					230					235					240		
Ala	Ile	Ala	Leu	Leu	His	Gln	Pro	Thr									
				245													

<210>430

<211>259

<212>PRT

<213>Chlamydia pneumoniae

<400>430

Met	Ile	Leu	Thr	Ala	Ala	Phe	Ser	Pro	Cys	Pro	Asn	Asp	Ile	Phe	Leu		
1				5					10				15				
Phe	Arg	Ser	Phe	Leu	Lys	Asp	Pro	Gln	Phe	Arg	Pro	Leu	Leu	Asn	Gln		
		20						25				30					
Val	Thr	Ile	Ala	Asp	Ile	Glu	Thr	Leu	Asn	Thr	Leu	Ala	Leu	Gln	Arg		
	35					40					45						
Arg	Leu	Ser	Leu	Met	Lys	Met	Ser	Ala	Ala	Leu	Phe	Pro	Leu	Val	Ser		
	50				55					60							
Asp	Tyr	Tyr	Asn	Leu	Met	Asp	Val	Gly	Asn	Thr	Leu	Gly	Tyr	Asn	Ser		
65				70					75					80			
Gly	Pro	Ile	Val	Leu	Ser	Leu	Asp	Pro	Glu	Cys	Ser	Leu	Asp	Thr	Leu		
			85					90				95					
Ala	Thr	Pro	Gly	Glu	Met	Thr	Thr	Ala	His	Ala	Leu	Cys	Lys	Leu	Tyr		
		100						105				110					
Tyr	Pro	Lys	Ala	Lys	Leu	Ile	Pro	Met	Pro	Tyr	Asp	Lys	Ile	Leu	Ser		
	115						120					125					
Ala	Ile	Leu	Gln	Gly	Lys	Val	Asp	Gly	Gly	Ala	Leu	Ile	His	Glu	Glu		
	130				135					140							
Arg	Phe	Ser	Tyr	Asp	Leu	Gln	Leu	Thr	Leu	Arg	Ala	Asp	Phe	Gly	Glu		
145				150						155					160		
Leu	Trp	Arg	Arg	Lys	Thr	Ile	Phe	Pro	Leu	Pro	Leu	Gly	Cys	Leu	Ala		
			165					170						175			
Ile	Ala	Lys	Tyr	Val	Pro	Met	Ala	Thr	Val	Asp	Ala	Leu	Thr	Ala	Ala		
	180						185					190					
Leu	Arg	Lys	Ser	Leu	Ile	Cys	Ser	Leu	Lys	Asp	Pro	Ile	Thr	Ala	Gly		
	195					200					205						
Ala	Lys	Ala	Val	Glu	Tyr	Ser	Lys	Asn	Lys	Asn	Val	Thr	Val	Ile	His		
	210					215					220						
Arg	Phe	Ile	Gly	Thr	Tyr	Ile	Asn	Lys	Glu	Thr	Phe	Gln	Leu	Ser	Lys		
225					230					235					240		

Thr Gly Lys Lys Ala Leu His Met Leu Trp Lys Ala Asn Glu Cys Cys
 245 250 255

Gln Tyr Thr

<210>431

<211>168

<212>PRT

<213>Chlamydia pneumoniae

<400>431

Glu Pro Ile Ser Thr Lys Lys Pro Phe Asn Tyr Leu Lys Leu Gly Lys
 1 5 10 15
 Lys Leu Tyr Ile Cys Ser Gly Arg Pro Met Asn Ala Val Asn Thr Pro
 20 25 30
 Lys Lys Ile Leu Cys Ile Val Ala Asp Tyr Arg Glu Ile Ser Pro Leu
 35 40 45
 Ile Glu Gln Leu Asp Phe Thr Gln Ile Asn Glu His Leu Tyr Ser Tyr
 50 55 60
 Arg Cys Thr Asp Tyr His Leu Asp Leu Tyr Ile Val His Val Trp Gly
 65 70 75 80
 Ser Thr Ala Val Leu Asn Ala Leu Gln Ser Tyr Cys Gln Ala Tyr Thr
 85 90 95
 Asp Tyr Asp Leu Trp Ile Asn Pro Gly Phe Val Gly Ala Cys Ser Pro
 100 105 110
 Glu Ile Pro Leu Gly Gln Cys Tyr Thr Ile Glu Lys Ile Ala Asn Leu
 115 120 125
 Thr Thr Asp Thr Pro Pro Val Leu Ser Glu Asp Pro Pro Tyr Ile Phe
 130 135 140
 Asp Ala Leu Pro Asp Ser Leu Pro Lys Ser Ser Leu Val Thr Ser Pro
 145 150 155 160
 Val Leu Tyr His Tyr Gly Phe Gln
 165

<210>432

<211>659

<212>PRT

<213>Chlamydia pneumoniae

<400>432

Met Lys Leu Leu Leu Lys Ala Val Leu Arg His Lys Asn His Leu Val
 1 5 10 15
 Ile Leu Gly Cys Ser Leu Leu Ala Ile Leu Gly Leu Thr Phe Ser Ser
 20 25 30
 Gln Met Glu Ile Phe Ser Leu Gly Met Ile Ala Lys Thr Gly Pro Asp
 35 40 45
 Ala Phe Leu Leu Phe Gly Arg Lys Glu Ser Gly Lys Leu Val Lys Val
 50 55 60
 Ser Glu Leu Ser Gln Lys Asp Ile Leu Glu Asn Trp Gln Ala Ile Ser
 65 70 75 80
 Lys Asp Ser Glu Thr Leu Thr Val Ser Asp Ala Thr Thr Tyr Ile Ala
 85 90 95
 Glu His Gly Lys Ser Thr Ala Ser Leu Thr Ser Lys Leu Ser Lys Phe
 100 105 110
 Val Arg Asn Tyr Ile Asp Val Ser Arg Phe Arg Gly Leu Ala Ile Phe
 115 120 125
 Leu Ile Cys Val Ala Ile Phe Lys Ala Val Thr Leu Phe Phe Gln Arg
 130 135 140
 Phe Leu Gly Gln Val Val Ala Ile Arg Val Ser Arg Asp Leu Arg Gln
 145 150 155 160
 Asp Tyr Phe Lys Ala Leu Gln Gln Leu Pro Met Thr Phe Phe His Asp
 165 170 175
 His Asp Ile Gly Asn Leu Ser Asn Arg Val Met Thr Asp Ser Ala Ser
 180 185 190
 Ile Ala Leu Ala Val Asn Ser Leu Met Ile Asn Tyr Ile Gln Ala Pro
 195 200 205
 Ile Thr Phe Ile Leu Thr Leu Gly Val Cys Leu Ser Ile Ser Trp Lys
 210 215 220

WO 99/27105

20 25
 Tyr Glu Lys Ala Ile Ala Glu Phe Lys Glu Lys Asn Lys Lys Asn Ser
 35 40 45
 Leu Leu Ser Ser Ser Glu Ile Gln Lys Leu Glu Lys Arg Leu Asp Lys
 50 55 60
 Leu Lys Glu Lys Ile Tyr Ser Asp Leu Thr Pro Trp Glu Arg Val Gln
 65 70 75 80
 Ile Cys Arg His Pro Ser Arg Pro Arg Thr Val Asn Tyr Ile Glu Gly
 85 90 95
 Met Cys Glu Glu Phe Val Glu Leu Cys Gly Asp Arg Thr Phe Arg Asp
 100 105 110
 Asp Pro Ala Val Val Gly Gly Phe Val Lys Ile Gln Gly Gln Arg Phe
 115 120 125
 Val Leu Ile Gly Gln Glu Lys Gly Cys Asp Thr Ala Ser Arg Leu His
 130 135 140
 Arg Asn Phe Gly Met Leu Cys Pro Glu Gly Phe Arg Lys Ala Leu Arg
 145 150 155 160
 Leu Gly Lys Leu Ala Glu Lys Phe Gly Leu Pro Val Val Phe Leu Val
 165 170 175
 Asp Thr Pro Gly Ala Tyr Pro Gly Leu Thr Ala Glu Glu Arg Gly Gln
 180 185 190
 Gly Trp Ala Ile Ala Lys Asn Leu Phe Glu Leu Ser Arg Leu Ala Thr
 195 200 205
 Pro Val Ile Ile Val Val Ile Gly Glu Gly Cys Ser Gly Gly Ala Leu
 210 215 220
 Gly Met Ala Val Gly Asp Ser Val Ala Met Leu Glu His Ser Tyr Tyr
 225 230 235 240
 Ser Val Ile Ser Pro Glu Gly Cys Ala Ser Ile Leu Trp Lys Asp Pro
 245 250 255
 Lys Lys Asn Ser Glu Ala Ala Ser Met Leu Lys Met His Gly Glu Asn
 260 265 270
 Leu Lys Gln Phe Gly Ile Ile Asp Thr Val Ile Lys Glu Pro Ile Gly
 275 280 285
 Gly Ala His His Asp Pro Ala Leu Val Tyr Ser Asn Val Arg Glu Phe
 290 295 300
 Ile Ile Gln Glu Trp Leu Arg Leu Lys Asp Leu Ala Ile Glu Glu Leu
 305 310 315 320
 Leu Glu Lys Arg Tyr Glu Lys Phe Arg Ser Ile Gly Leu Tyr Glu Thr
 325 330 335
 Thr Ser Glu Ser Gly Pro Glu Ala
 340

<210>434

<211>434

<212>PRT

<213>Chlamydia pneumoniae

<400>434

Ser Gln Thr Gly Phe Leu Pro Gly Leu Thr Leu Ile Phe Val Ile Ile
 1 5 10 15
 Ile Val Trp Cys Asn Ala Phe Leu Ile Lys Leu Cys Val Ile Met Gly
 20 25 30
 Leu Gln Ser Arg Leu Gln His Cys Ile Glu Val Ser Gln Asn Ser Asn
 35 40 45
 Phe Asp Ser Gln Val Lys Gln Phe Ile Tyr Ala Cys Gln Asp Lys Thr
 50 55 60
 Leu Arg Gln Ser Val Leu Lys Ile Phe Arg Tyr His Pro Leu Leu Lys
 65 70 75 80
 Ile His Asp Ile Ala Arg Ala Val Tyr Leu Leu Met Ala Leu Glu Glu
 85 90 95
 Gly Glu Asp Leu Gly Leu Ser Phe Leu Asn Val Gln Gln Tyr Pro Ser
 100 105 110
 Gly Ala Val Glu Leu Phe Ser Cys Gly Gly Phe Pro Trp Lys Gly Leu
 115 120 125
 Pro Tyr Pro Ala Glu His Ala Glu Phe Gly Leu Leu Leu Gln Ile
 130 135 140

Ala Glu Phe Tyr Gln Glu Ser Gln Ala Tyr Val Ser Lys Met Ser His
 145 150 155 160
 Phe Gln Gln Ala Leu Phe Asp His Gln Gly Ser Val Phe Pro Ser Leu
 165 170 175
 Trp Ser Gln Glu Asn Ser Arg Leu Leu Lys Glu Lys Thr Thr Leu Ser
 180 185 190
 Gln Ser Phe Leu Phe Gln Leu Gly Met Gln Ile His Pro Glu Tyr Ser
 195 200 205
 Leu Glu Asp Pro Ala Leu Gly Phe Trp Met Gln Arg Thr Arg Ser Ser
 210 215 220
 Ser Ala Phe Val Ala Ala Ser Gly Cys Gln Ser Ser Leu Gly Ala Tyr
 225 230 235 240
 Ser Ser Gly Asp Val Gly Val Ile Ala Tyr Gly Pro Cys Ser Gly Asp
 245 250 255
 Ile Ser Asp Cys Tyr Tyr Phe Gly Cys Cys Gly Ile Ala Lys Glu Phe
 260 265 270
 Val Cys Gln Xaa Ser His Gln Thr Thr Glu Ile Ser Phe Leu Thr Ser
 275 280 285
 Thr Gly Lys Pro His Pro Arg Asn Thr Gly Phe Ser Tyr Leu Arg Asp
 290 295 300
 Ser Tyr Val His Leu Pro Ile Arg Cys Lys Ile Thr Ile Ser Asp Lys
 305 310 315 320
 Gln Tyr Arg Val His Ala Ala Leu Ala Glu Ala Thr Ser Ala Met Thr
 325 330 335
 Phe Ser Ile Phe Cys Lys Gly Lys Asn Cys Gln Val Val Asp Gly Pro
 340 345 350
 Arg Leu Arg Ser Cys Ser Leu Asp Ser Tyr Lys Gly Pro Gly Asn Asp
 355 360 365
 Ile Met Ile Leu Gly Glu Asn Asp Ala Ile Asn Ile Val Ser Ala Ser
 370 375 380
 Pro Tyr Met Glu Ile Phe Ala Leu Gln Gly Lys Glu Lys Phe Trp Asn
 385 390 395 400
 Ala Asp Phe Leu Ile Asn Ile Pro Tyr Lys Glu Glu Gly Val Met Leu
 405 410 415
 Ile Phe Glu Lys Lys Val Thr Ser Glu Lys Gly Arg Phe Phe Thr Lys
 420 425 430
 Met Asn

<210>435

<211>85

<212>PRT

<213>Chlamydia pneumoniae

<400>435

Arg Arg Met Pro Asp Ser Leu His Lys Thr Leu Arg Ser Val Thr Gly
 1 5 10 15
 Val Gly Gln Ile Pro His Val Leu Gln Asp Lys Val Ile Leu Ser Lys
 20 25 30
 Glu Ile Pro His Lys Lys Thr Val Leu Gln His Leu Lys Gly Thr Ala
 35 40 45
 Val His Leu Lys Ser Leu Ser Leu Asn Pro Arg Leu Leu Leu Arg Pro
 50 55 60
 Ser Lys Asp Arg Arg Pro Glu Gln Tyr His Glu Phe Leu Val Lys Asp
 65 70 75 80
 Gly Ser Gly Lys Ser
 85

<210>436

<211>105

<212>PRT

<213>Chlamydia pneumoniae

<400>436

Glu Ala Leu Ser Asn Met Ala Thr Met Thr Lys Lys Lys Leu Ile Ser
 1 5 10 15
 Thr Ile Ser Gln Asp His Lys Ile His Pro Asn His Val Arg Thr Val
 20 25 30

WO 99/27105

Ile Gln Asn Phe Leu Asp Lys Met Thr Asp Ala Leu Val Lys Gly Asp
 35 40 45
 Arg Leu Glu Phe Arg Asp Phe Gly Val Leu Gln Val Val Glu Arg Lys
 50 55 60
 Pro Lys Val Gly Arg Asn Pro Arg Asn Ala Ala Val Pro Ile His Ile
 65 70 75 80
 Pro Ala Arg Arg Ala Val Lys Phe Thr Pro Gly Lys Arg Met Lys Arg
 85 90 95
 Leu Ile Glu Thr Pro Asn Lys His Ser
 100 105

<210>437

<211>264

<212>PRT

<213>Chlamydia pneumoniae

<400>437

Met Lys Leu Thr Lys Tyr Leu Asn Thr Lys Gln Leu Arg Ser Met Ile
 1 5 10 15
 Ser Arg Leu Phe Val Arg Tyr Ser Leu Pro Met Ser Lys Gln Leu Ser
 20 25 30
 Phe Phe Ala Leu Cys Val Leu Gly Ser His Pro Ile Phe Ala Gln Thr
 35 40 45
 Pro Asn Pro Pro Gln Arg Val Arg Arg Ser Glu Val Ile Phe Ile Asp
 50 55 60
 Pro Gly His Gly Gly Lys Asp Gln Gly Thr Ala Ser Lys Glu Leu His
 65 70 75 80
 Tyr Glu Glu Lys Ser Leu Thr Leu Ser Leu Ala Leu Thr Val Gln Ser
 85 90 95
 Tyr Leu Lys Arg Met Gly Tyr Lys Pro Gln Leu Thr Arg Ser Ser Asp
 100 105 110
 Val Tyr Val Asp Leu Gly Lys Arg Val Ala Leu Ser Asn Arg Gly Gln
 115 120 125
 Gly Asp Val Phe Ile Ser Ile His Cys Asn His Ser Ser Asn Ala Ala
 130 135 140
 Ala Phe Gly Thr Glu Val Tyr Phe Tyr Asn Gly Lys Val Gly Ser Pro
 145 150 155 160
 Thr Arg Asn Arg Met Ser Glu Val Leu Gly Lys Asn Ile Leu Ala Ala
 165 170 175
 Met Glu Lys Asn Gly Ile Leu Lys Ser Arg Gly Leu Lys Thr Ala Asn
 180 185 190
 Phe Val Val Ile Arg Asp Thr Ser Met Pro Ala Val Leu Val Glu Thr
 195 200 205
 Gly Phe Leu Ser Asn Ser Arg Glu Arg Ala Ala Leu Gln Asp Ala Arg
 210 215 220
 Tyr Arg Met His Val Ala Lys Gly Ile Ala Glu Gly Val His Asn Phe
 225 230 235 240
 Leu Ser Gly Pro Ser Phe Gln Lys Pro Lys Gln Asn Ile Ala Lys Ile
 245 250 255
 Arg Lys Pro Gln Ile Gln Ala Asn
 260

<210>438

<211>483

<212>PRT

<213>Chlamydia pneumoniae

<400>438

Met Asp Leu Lys Glu Leu Leu His Gly Val Gln Ala Lys Ile Tyr Gly
 1 5 10 15
 Lys Val Arg Pro Leu Glu Val Arg Asn Leu Thr Arg Asp Ser Arg Cys
 20 25 30
 Val Ser Val Gly Asp Ile Phe Ile Ala His Lys Gly Gln Arg Tyr Asp
 35 40 45
 Gly Asn Asp Phe Ala Val Asp Ala Leu Ala Asn Gly Ala Ile Ala Ile
 50 55 60
 Ala Ser Ser Leu Tyr Asn Pro Phe Leu Ser Val Val Gln Ile Ile Thr
 65 70 75 80

Pro Asn Leu Glu Glu Leu Glu Ala Glu Leu Ser Ala Lys Tyr Tyr Glu
 85 90 95
 Tyr Pro Ser Ser Lys Leu His Thr Ile Gly Val Thr Gly Thr Asn Gly
 100 105 110
 Lys Thr Thr Val Thr Cys Leu Ile Lys Ala Leu Leu Asp Ser Tyr Gln
 115 120 125
 Lys Pro Ser Gly Leu Leu Gly Thr Ile Glu His Ile Leu Gly Glu Gly
 130 135 140
 Val Ile Lys Asp Gly Phe Thr Thr Pro Thr Pro Ala Leu Leu Gln Lys
 145 150 155 160
 Tyr Leu Ala Thr Met Val Arg Gln Asn Arg Asp Ala Val Val Met Glu
 165 170 175
 Val Ser Ser Ile Gly Leu Ala Ser Gly Arg Val Ala Tyr Thr Asn Phe
 180 185 190
 Asp Thr Ala Val Leu Thr Asn Ile Thr Leu Asp His Leu Asp Phe His
 195 200 205
 Gly Thr Phe Glu Thr Tyr Val Ala Ala Lys Ala Lys Leu Phe Ser Leu
 210 215 220
 Val Pro Pro Ser Gly Met Val Val Ile Asn Thr Asp Ser Pro Tyr Ala
 225 230 235 240
 Ser Gln Cys Ile Glu Ser Ala Lys Ala Pro Val Ile Thr Tyr Gly Ile
 245 250 255
 Glu Ser Ala Ala Asp Tyr Arg Ala Thr Asp Ile Gln Leu Ser Ser Ser
 260 265 270
 Gly Thr Lys Tyr Thr Leu Val Tyr Gly Asp Gln Lys Ile Ala Cys Ser
 275 280 285
 Ser Ser Phe Ile Gly Lys Tyr Asn Val Tyr Asn Leu Leu Ala Ala Ile
 290 295 300
 Ser Thr Val His Ala Ser Leu Arg Cys Asp Leu Glu Asp Leu Leu Glu
 305 310 315 320
 Lys Ile Gly Leu Cys Gln Pro Pro Pro Gly Arg Leu Asp Pro Val Leu
 325 330 335
 Met Gly Pro Cys Pro Val Tyr Ile Asp Tyr Ala His Thr Pro Asp Ala
 340 345 350
 Leu Asp Asn Val Leu Thr Gly Leu His Glu Leu Leu Pro Glu Gly Gly
 355 360 365
 Arg Leu Ile Val Val Phe Gly Cys Gly Gly Asp Arg Asp Arg Ser Lys
 370 375 380
 Arg Lys Leu Met Ala Gln Val Val Glu Arg Tyr Gly Phe Ala Val Val
 385 390 395 400
 Thr Ser Asp Asn Pro Arg Ser Glu Pro Pro Glu Asp Ile Val Asn Glu
 405 410 415
 Ile Cys Asp Gly Phe Tyr Ser Lys Asn Tyr Phe Ile Glu Ile Asp Arg
 420 425 430
 Lys Gln Ala Ile Thr Tyr Ala Leu Ser Ile Ala Ser Asp Arg Asp Ile
 435 440 445
 Val Leu Ile Ala Gly Lys Gly His Glu Ala Tyr Gln Ile Phe Lys His
 450 455 460
 Gln Thr Val Ala Phe Asp Asp Lys Gln Thr Val Cys Glu Val Leu Ala
 465 470 475 480
 Ser Tyr Val

<210>439

<211>653

<212>PRT

<213>Chlamydia pneumoniae

<400>439

Met Ser Tyr Arg Lys Arg Ser Thr Leu Ile Val Leu Gly Val Phe Ala
 1 5 10 15
 Leu Tyr Ala Leu Leu Val Leu Arg Tyr Tyr Lys Xaa Gln Ile Cys Glu
 20 25 30
 Gly Asp His Trp Ala Ala Glu Ala Leu Gly Gln His Glu Phe Cys Val
 35 40 45
 Arg Asp Pro Phe Arg Arg Gly Thr Phe Phe Ala Asn Thr Thr Val Arg

WO 99/27105

50 55 60
 Lys Gly Asp Lys Asp Leu Gln Gln Pro Phe Ala Val Asp Ile Thr Lys
 65 70 75 80
 Phe His Leu Cys Ala Asp Pro Leu Ala Ile Pro Glu Cys His Arg Asp
 85 90 95
 Glu Ile Ile Gln Gly Ile Leu Gln Phe Ile Glu Gly Gln Thr Tyr Asp
 100 105 110
 Asp Leu Ser Leu Lys Leu Asp Lys Lys Ser Arg Tyr Cys Lys Leu Tyr
 115 120 125
 Pro Leu Leu Asp Val Ser Val His Asp Arg Leu Ser Leu Trp Trp Lys
 130 135 140
 Gly Tyr Ala Thr Lys His Arg Leu Pro Thr Asn Ala Leu Phe Phe Ile
 145 150 155 160
 Thr Asp Tyr Gln Arg Ser Tyr Pro Phe Gly Lys Leu Leu Gly Gln Val
 165 170 175
 Leu His Thr Leu Arg Glu Ile Lys Asp Glu Lys Thr Gly Lys Ala Phe
 180 185 190
 Pro Thr Gly Gly Met Glu Ala Tyr Phe Asn His Ile Leu Glu Gly Asp
 195 200 205
 Val Gly Glu Arg Lys Leu Leu Arg Ser Pro Leu Asn Arg Leu Asp Thr
 210 215 220
 Asn Arg Val Ile Lys Leu Pro Lys Asp Gly Ser Asp Ile Tyr Leu Thr
 225 230 235 240
 Ile Asn Pro Val Ile Gln Thr Ile Ala Glu Glu Glu Leu Glu Arg Gly
 245 250 255
 Val Leu Glu Ala Lys Ala Gln Gly Gly Arg Leu Ile Leu Met Asn Ser
 260 265 270
 Gln Thr Gly Glu Ile Leu Ala Leu Ala Gln Tyr Pro Phe Phe Asp Pro
 275 280 285
 Thr Asn Tyr Lys Glu Tyr Phe Asn Asn Lys Glu Arg Ile Glu His Thr
 290 295 300
 Lys Val Ser Phe Val Ser Asp Val Phe Glu Pro Gly Ser Ile Met Lys
 305 310 315 320
 Pro Leu Thr Val Ala Ile Ala Leu Gln Ala Asn Glu Glu Ala Ser Leu
 325 330 335
 Lys Ser Gln Lys Lys Ile Phe Asp Pro Glu Glu Pro Ile Asp Val Thr
 340 345 350
 Arg Thr Leu Phe Pro Gly Arg Lys Gly Ser Pro Leu Lys Asp Ile Ser
 355 360 365
 Arg Asn Ser Gln Leu Asn Met Tyr Met Ala Ile Gln Lys Ser Ser Asn
 370 375 380
 Val Tyr Val Ala Gln Leu Ala Asp Arg Ile Ile Gln Ser Leu Gly Val
 385 390 395 400
 Ala Trp Tyr Gln Gln Lys Leu Leu Ala Leu Gly Phe Gly Arg Lys Thr
 405 410 415
 Gly Ile Glu Leu Pro Ser Glu Ala Ser Gly Leu Val Pro Ser Pro His
 420 425 430
 Arg Phe His Ile Asn Gly Ser Leu Glu Trp Ser Leu Ser Thr Pro Tyr
 435 440 445
 Ser Leu Ala Met Gly Tyr Asn Ile Leu Ala Thr Gly Ile Gln Met Val
 450 455 460
 Gln Ala Tyr Ala Ile Leu Ala Asn Gly Gly Tyr Ala Val Arg Pro Thr
 465 470 475 480
 Leu Val Lys Lys Ile Val Ser Ala Ser Gly Glu Glu Tyr His Leu Pro
 485 490 495
 Thr Lys Glu Lys Thr Arg Leu Phe Ser Glu Glu Ile Thr Arg Glu Val
 500 505 510
 Val Arg Ala Met Arg Phe Thr Thr Leu Pro Gly Gly Ser Gly Phe Arg
 515 520 525
 Ala Ser Pro Lys His His Ser Ser Ala Gly Lys Thr Gly Thr Thr Glu
 530 535 540
 Lys Met Ile His Gly Lys Tyr Asp Lys Arg Arg His Ile Ala Ser Phe
 545 550 555 560
 Ile Gly Phe Thr Pro Val Glu Ser Ser Glu Gly Asn Phe Pro Pro Leu

565 570 575
Val Met Leu Val Ser Ile Asp Asp Pro Glu Tyr Gly Leu Arg Ala Asp
580 585 590
Gly Thr Lys Asn Tyr Met Gly Gly Arg Cys Ala Ala Pro Ile Phe Ser
595 600 605
Arg Val Ala Asp Arg Thr Leu Leu Tyr Leu Gly Ile Leu Pro Asp Lys
610 615 620
Lys Leu Arg Asn Cys Asp Glu Glu Ala Ala Ala Leu Lys Arg Leu Tyr
625 630 635 640
Glu Glu Trp Asn Arg Ser Pro Lys Gln Gly Gly Thr Arg
645 650

<210>440

<211>300

<212>PRT

<213>Chlamydia pneumoniae

<400>440

Glu Ile Leu Met Ser Glu Arg Ala His Ile Pro Val Leu Val Glu Glu
1 5 10 15
Cys Leu Ala Leu Phe Ala Gln Arg Pro Pro Gln Thr Phe Arg Asp Val
20 25 30
Thr Leu Gly Ala Gly Gly His Ala Tyr Ala Phe Leu Glu Ala Tyr Pro
35 40 45
Ser Leu Thr Cys Tyr Asp Gly Ser Asp Arg Asp Leu Gln Ala Leu Ala
50 55 60
Ile Ala Glu Lys Arg Leu Glu Thr Phe Gln Asp Arg Val Ser Phe Ser
65 70 75 80
His Ala Ser Phe Glu Asp Leu Ala Asn Gln Pro Thr Pro Arg Leu Tyr
85 90 95
Asp Gly Val Leu Ala Asp Leu Gly Val Ser Ser Met Gln Leu Asp Thr
100 105 110
Leu Ser Arg Gly Phe Ser Phe Gln Gly Glu Lys Glu Glu Leu Asp Met
115 120 125
Arg Met Asp Gln Thr Gln Glu Leu Ser Ala Ser Asp Val Leu Asn Ser
130 135 140
Leu Lys Glu Glu Glu Leu Gly Arg Ile Phe Arg Glu Tyr Gly Glu Glu
145 150 155 160
Pro Gln Trp Lys Ser Ala Ala Lys Ala Val Val His Phe Arg Lys His
165 170 175
Lys Lys Ile Leu Ser Ile Gln Asp Val Lys Glu Ala Leu Leu Gly Val
180 185 190
Phe Pro His Tyr Arg Phe His Arg Lys Ile His Pro Leu Thr Leu Ile
195 200 205
Phe Gln Ala Leu Arg Val Tyr Val Asn Gly Glu Asp Arg Gln Leu Lys
210 215 220
Ser Leu Leu Thr Ser Ala Ile Ser Trp Leu Ala Pro Gln Gly Arg Leu
225 230 235 240
Val Ile Ile Ser Phe Cys Ser Ser Glu Asp Arg Pro Val Lys Trp Phe
245 250 255
Phe Lys Glu Ala Glu Ala Ser Gly Leu Gly Lys Val Ile Thr Lys Lys
260 265 270
Val Ile Gln Pro Thr Tyr Gln Glu Val Arg Arg Asn Pro Arg Ser Arg
275 280 285
Ser Ala Lys Leu Arg Cys Phe Glu Lys Ala Ser Gln
290 295 300

<210>441

<211>184

<212>PRT

<213>Chlamydia pneumoniae

<400>441

Gly Leu Ala Met Val Glu Ile Phe Asn Tyr Ser Thr Ser Ile Tyr Glu
1 5 10 15
Gln His Ala Ser Asn Asn Arg Ile Val Ser Asp Phe Arg Lys Glu Ile
20 25 30
Gln Met Glu Gly Ile Ser Ile Arg Asp Val Ala Lys His Ala Gln Ile

35 40 45
 Leu Asp Met Asn Pro Lys Pro Ser Ala Leu Thr Ser Leu Leu Gln Thr
 50 55 60
 Asn Gln Lys Ser His Trp Ala Cys Phe Ser Pro Pro Asn Asn Phe Tyr
 65 70 75 80
 Lys Gln Arg Phe Ser Thr Pro Tyr Leu Ala Pro Ser Leu Gly Ser Pro
 85 90 95
 Asp Gln Gln Asp Glu Asp Ile Glu Lys Ile Ser Ser Phe Leu Lys Val
 100 105 110
 Leu Thr Arg Gly Lys Phe Ser Tyr Arg Ser Gln Ile Thr Pro Phe Leu
 115 120 125
 Ser Tyr Lys Asp Lys Glu Glu Glu Asp Glu Asp Pro Glu Glu Asp
 130 135 140
 Asp Asp Asp Pro Arg Val Gln Gln Gly Lys Val Leu Leu Lys Ala Leu
 145 150 155 160
 Asp Leu Gly Val Lys Ser Thr Asn Val Met Ile Asp Tyr Val Ile Ser
 165 170 175
 Arg Ile Phe Gln Phe Val Gln Gly
 180

<210>442

<211>143

<212>PRT

<213>Chlamydia pneumoniae

<400>442

Cys Met Leu Asp Asn Glu Trp Lys Ala Ile Leu Gly Trp Gly Asp Asp
 1 5 10 15
 Glu Leu Glu Glu Leu Arg Ile Ser Gly Tyr Ser Phe Leu Arg Gln Gly
 20 25 30
 His Tyr Ser Lys Ala Ile Leu Phe Phe Glu Ala Leu Val Ile Leu Asp
 35 40 45
 Pro Leu Ser Ile Tyr Asp His Gln Thr Leu Gly Gly Leu Tyr Leu Gln
 50 55 60
 Ile Gly Glu Asn Ser Gln Ala Leu Ala Val Leu Asp Gln Ala Leu Arg
 65 70 75 80
 Met Gln Gly Asp His Leu Pro Thr Leu Leu Asn Lys Thr Lys Ala Leu
 85 90 95
 Phe Cys Leu Gly Arg Ile Glu Glu Ala Thr Ala Ile Ala Thr Tyr Leu
 100 105 110
 Ser Ser Cys Pro Ile Pro Ala Ile Ala Asn Asp Ala Glu Ala Leu Leu
 115 120 125
 Met Ser Tyr Ser Lys Ala Thr Lys Lys Asn Ala Ala Leu Val Arg
 130 135 140

<210>443

<211>467

<212>PRT

<213>Chlamydia pneumoniae

<400>443

Met Gly Trp Val Asp Cys Ile Trp Glu Ser Phe Ile Asn Lys Glu Ser
 1 5 10 15
 Gly Met Leu Thr Cys Asn Glu Cys Thr Thr Trp Glu Gln Phe Leu Asn
 20 25 30
 Tyr Val Lys Thr Arg Cys Ser Lys Thr Ala Phe Glu Asn Trp Ile Ser
 35 40 45
 Pro Ile Gln Val Leu Glu Glu Thr Gln Glu Lys Ile Arg Leu Glu Val
 50 55 60
 Pro Asn Ile Phe Val Gln Asn Tyr Leu Leu Asp Asn Tyr Lys Arg Asp
 65 70 75 80
 Leu Cys Ser Phe Val Pro Leu Asp Val His Gly Glu Pro Ala Leu Glu
 85 90 95
 Phe Val Val Ala Glu His Lys Lys Pro Ser Ala Pro Val Ala Ser Gln
 100 105 110
 Lys Glu Ser Asn Glu Gly Ile Ser Glu Val Phe Glu Glu Thr Lys Asp
 115 120 125
 Phe Glu Leu Lys Leu Asn Leu Ser Tyr Arg Phe Asp Asn Phe Ile Glu

130	135	140
Gly Pro Ser Asn Gln Phe Val Lys Ser Ala Ala Val Gly Ile Ala Gly		
145	150	155
Lys Pro Gly Arg Ser Tyr Asn Pro Leu Phe Ile His Gly Gly Val Gly		160
	165	170
Leu Gly Lys Thr His Leu Leu His Ala Val Gly His Tyr Val Arg Glu		175
	180	185
His His Lys Asn Leu Arg Ile His Cys Ile Thr Thr Glu Ala Phe Ile		190
	195	200
Asn Asp Leu Val Tyr His Leu Lys Ser Lys Ser Val Asp Lys Met Lys		205
	210	215
Asn Phe Tyr Arg Ser Leu Asp Leu Leu Leu Val Asp Asp Ile Gln Phe		220
225	230	235
Leu Gln Asn Arg Gln Asn Phe Glu Glu Glu Phe Cys Asn Thr Phe Glu		240
	245	250
Thr Leu Ile Asn Leu Ser Lys Gln Ile Val Ile Thr Ser Asp Lys Pro		255
	260	265
Pro Ser Gln Leu Lys Leu Ser Glu Arg Ile Ile Ala Arg Met Glu Trp		270
	275	280
Gly Leu Val Ala His Val Gly Ile Pro Asp Leu Glu Thr Arg Val Ala		285
290	295	300
Ile Leu Gln His Lys Ala Glu Gln Lys Gly Leu Leu Ile Pro Asn Glu		305
	310	315
Met Ala Phe Tyr Ile Ala Asp His Ile Tyr Gly Asn Val Arg Gln Leu		320
	325	330
Glu Gly Ala Ile Asn Lys Leu Thr Ala Tyr Cys Arg Leu Phe Gly Lys		335
	340	345
Ser Leu Thr Glu Thr Thr Val Arg Glu Thr Leu Lys Glu Leu Phe Arg		350
	355	360
Ser Pro Thr Lys Gln Lys Ile Ser Val Glu Thr Ile Leu Lys Ser Val		365
	370	375
Ala Thr Val Phe Gln Val Lys Leu Asn Asp Leu Lys Gly Asn Ser Arg		380
385	390	395
Ser Lys Asp Leu Val Leu Ala Arg Gln Ile Ala Met Tyr Leu Ala Lys		400
	405	410
Thr Leu Ile Thr Asp Ser Leu Val Ala Ile Gly Ala Ala Phe Gly Lys		415
	420	425
Thr His Ser Thr Val Leu Tyr Ala Cys Lys Thr Ile Glu His Lys Leu		430
	435	440
Gln Asn Asp Glu Thr Leu Lys Arg Gln Val Asn Leu Cys Lys Asn His		445
	450	455
Ile Val Gly		460

465

<210>444

<211>195

<212>PRT

<213>Chlamydia pneumoniae

<400>444

Met Phe Arg Arg Thr Gly Lys Gly Pro Phe Glu Asp Val Gln Thr Leu	
1 5 10 15	
Tyr Glu Glu Glu Thr Ser Ser Pro Ser Ser Tyr Ser Pro Tyr Ser Arg	
20 25 30	
Ser Glu Arg Pro Glu Thr Pro Pro Ser Leu Phe Asp Asn Pro Lys Ala	
35 40 45	
Ser Glu Ala Arg Pro Leu Asn His Asn Leu Thr Glu Glu Ser Ser Leu	
50 55 60	
Pro Gln Trp Ser Ser Thr Pro Arg Thr Glu Ser Leu Leu Pro Leu Glu	
65 70 75 80	
Glu Pro Glu Thr Thr Leu Gly Glu Gly Val Thr Phe Lys Gly Glu Leu	
85 90 95	
Ala Phe Glu Arg Leu Leu Arg Ile Asp Gly Thr Phe Glu Gly Ile Leu	
100 105 110	
Val Ser Lys Gly Lys Ile Ile Ile Gly Pro Lys Gly Val Val Lys Ala	
115 120 125	

Asp Ile Gln Leu Gln Glu Ala Ile Ile Glu Gly Val Val Glu Gly Asn
 130 135 140
 Ile Thr Val Ser Gly Lys Val Glu Leu Arg Gly Gly Ala Ile Ile Lys
 145 150 155 160
 Gly Asp Ile Gln Ala Asn Thr Leu Cys Val Asp Glu Gly Val Arg Ile
 165 170 175
 Leu Gly Tyr Leu Ala Ile Ala Gly Ile Thr Asp His Ser Glu Arg Glu
 180 185 190
 Arg Asp Leu
 195

<210>445

<211>192

<212>PRT

<213>Chlamydia pneumoniae

<400>445

Met Val Leu Phe Ser Leu Leu Phe Pro Lys Leu Cys Tyr Gly Cys Gln
 1 5 10 15
 Ala Pro Gly Ala Tyr Phe Cys Ser Asn Cys Leu Glu Lys Leu Val
 20 25 30
 Glu Asp Arg Glu Gly Arg Cys Leu His Cys Phe Arg Tyr Leu Gly Ser
 35 40 45
 Ser Glu Thr Arg Leu Cys Ser Gln Cys Ser Pro Ser Ser Gln Leu Gln
 50 55 60
 Ala Phe Ser Leu Tyr Leu Pro Ser Gln Thr Ala Leu Ser Val Tyr Ala
 65 70 75 80
 Arg Ala Cys Glu Gly Lys Arg Pro Ala Leu Gln Phe Phe Ser Lys Ser
 85 90 95
 Ile Ala Phe Glu Leu Ala Ser Leu Asp Glu Thr Pro Ser Cys Ile Ala
 100 105 110
 Tyr Ile Thr Ser Thr Ile Ser Arg Lys Ile Val Val Glu Val Ala Lys
 115 120 125
 Leu Glu Lys Leu Leu Arg Ile Pro Leu Trp Pro Trp Leu Pro Lys Lys
 130 135 140
 Arg Gln Ile Glu Lys Leu Pro Lys Gly Glu Gly Ile Cys Phe Leu Ser
 145 150 155 160
 Ala Tyr Pro Leu Ser Gln Lys Trp Met Gln Thr Ile Val Gly Gly Ser
 165 170 175
 Ala Ser Pro Leu Val Ser Ile Ser Leu Phe Leu Ser Gln Asn Asp Gln
 180 185 190

<210>446

<211>517

<212>PRT

<213>Chlamydia pneumoniae

<400>446

Val Phe Glu Arg Val Glu Ala Ser Thr Phe Leu Ser Ile Thr Met Leu
 1 5 10 15
 Lys Lys Phe Ile Asn Ser Leu Trp Lys Leu Cys Gln Gln Asp Lys Tyr
 20 25 30
 Gln Arg Phe Thr Pro Ile Val Asp Ala Ile Asp Thr Phe Cys Tyr Glu
 35 40 45
 Pro Ile Glu Thr Pro Ser Lys Pro Pro Phe Ile Arg Asp Ser Val Asp
 50 55 60
 Val Lys Arg Trp Met Met Leu Val Val Ile Ala Leu Phe Pro Ala Thr
 65 70 75 80
 Phe Val Ala Ile Trp Asn Ser Gly Leu Gln Ser Ile Val Tyr Ser Ser
 85 90 95
 Gly Asn Pro Val Leu Met Glu Gln Phe Leu His Ile Ser Gly Phe Gly
 100 105 110
 Ser Tyr Leu Ser Phe Val Tyr Lys Glu Ile His Ile Val Pro Ile Leu
 115 120 125
 Trp Glu Gly Leu Lys Ile Phe Ile Pro Leu Leu Thr Ile Ser Tyr Val
 130 135 140
 Val Gly Gly Thr Cys Glu Val Leu Phe Ala Val Val Arg Gly His Lys
 145 150 155 160

Ile Ala Glu Gly Leu Leu Val Thr Gly Ile Leu Tyr Pro Leu Thr Leu
 165 170 175
 Pro Pro Thr Ile Pro Tyr Trp Met Ala Ala Leu Gly Ile Ala Phe Gly
 180 185 190
 Ile Val Val Ser Lys Glu Leu Phe Gly Gly Thr Gly Met Asn Ile Leu
 195 200 205
 Asn Pro Ala Leu Ser Gly Arg Ala Phe Leu Phe Phe Thr Phe Pro Ala
 210 215 220
 Lys Met Ser Gly Asp Val Trp Val Gly Ser Asn Pro Gly Val Ile Lys
 225 230 235 240
 Asp Ser Leu Met Lys Met Asn Ser Ser Thr Gly Lys Val Leu Ile Asp
 245 250 255
 Gly Phe Ser Gln Ser Thr Cys Leu Gln Thr Leu Asn Ser Thr Pro Pro
 260 265 270
 Ser Val Lys Arg Leu His Val Asp Ala Ile Ala Ala Asn Met Leu His
 275 280 285
 Ile Pro His Val Pro Thr Gln Asp Val Ile His Ser Gln Phe Ser Leu
 290 295 300
 Trp Thr Glu Thr His Pro Gly Trp Val Leu Asp Asn Leu Thr Leu Thr
 305 310 315 320
 Gln Leu Gln Thr Phe Val Thr Ala Pro Val Ala Glu Gly Gly Leu Gly
 325 330 335
 Leu Leu Pro Thr Gln Phe Asp Ser Ala Tyr Ala Ile Thr Asp Val Ile
 340 345 350
 Tyr Gly Ile Gly Lys Phe Ser Ala Gly Asn Leu Phe Trp Gly Asn Ile
 355 360 365
 Ile Gly Ser Leu Gly Glu Thr Ser Thr Phe Ala Cys Leu Leu Gly Ala
 370 375 380
 Ile Phe Leu Ile Val Thr Gly Ile Ala Ser Trp Arg Thr Met Ala Ala
 385 390 395 400
 Phe Gly Ile Gly Ala Phe Leu Thr Gly Trp Leu Phe Lys Phe Ile Ser
 405 410 415
 Val Leu Ile Val Gly Gln Asn Gly Ala Trp Ala Pro Ala Arg Phe Phe
 420 425 430
 Ile Pro Ala Tyr Arg Gln Leu Phe Leu Gly Gly Leu Ala Phe Gly Leu
 435 440 445
 Val Phe Met Ala Thr Asp Pro Val Ser Ser Pro Thr Met Lys Leu Gly
 450 455 460
 Lys Trp Ile Tyr Gly Phe Phe Ile Gly Phe Met Thr Ile Val Ile Arg
 465 470 475 480
 Leu Ile Asn Pro Ala Tyr Pro Glu Gly Val Met Leu Ala Ile Leu Leu
 485 490 495
 Gly Asn Val Phe Ala Pro Leu Ile Asp Tyr Phe Ala Val Arg Lys Tyr
 500 505 510
 Arg Lys Arg Gly Val
 515

<210>447

<211>320

<212>PRT

<213>Chlamydia pneumoniae

<400>447

Met Ser Lys Gly Ser Ser Lys His Thr Val Arg Ile Asn Gln Thr Trp
 1 5 10 15
 Tyr Ile Val Ser Phe Ile Leu Gly Leu Ser Leu Phe Ala Gly Val Leu
 20 25 30
 Leu Ser Thr Ile Tyr Tyr Val Leu Ser Pro Ile Gln Glu Gln Ala Ala
 35 40 45
 Thr Phe Asp Arg Asn Lys Gln Met Leu Leu Ala Ala His Ile Leu Asp
 50 55 60
 Phe Lys Gly Arg Phe Gln Ile Gln Glu Lys Lys Glu Trp Val Pro Ala
 65 70 75 80
 Thr Phe Asp Lys Lys Thr Gln Leu Leu Glu Val Ala Thr Lys Lys Val
 85 90 95
 Ser Glu Val Ser Tyr Pro Glu Leu Glu Leu Tyr Ala Glu Arg Phe Val

100 105
 Arg Pro Leu Leu Thr Asp Ala Gln Gly Lys Val Phe Ser Phe Glu Glu
 115 120 125
 Lys Asn Leu Asn Pro Ile Glu Phe Phe Glu Lys Tyr Gln Glu Ser Pro
 130 135 140
 Pro Cys Gln Gln Ser Pro Leu Pro Phe Tyr Val Ile Leu Glu Asn Thr
 145 150 155 160
 Ser Arg Thr Glu Asn Met Ser Gly Ala Asp Val Ala Lys Asp Leu Ser
 165 170 175
 Thr Val Gln Ala Leu Ile Phe Pro Ile Ser Gly Phe Gly Leu Trp Gly
 180 185 190
 Pro Ile His Gly Tyr Leu Gly Val Lys Asn Asp Gly Asp Thr Val Leu
 195 200 205
 Gly Thr Ala Trp Tyr Gln Gln Gly Glu Thr Pro Gly Leu Gly Ala Asn
 210 215 220
 Ile Thr Asn Pro Glu Trp Gln Glu Gln Phe Tyr Gly Lys Lys Ile Phe
 225 230 235 240
 Leu Gln Asp Ser Ser Gly Thr Thr Asn Phe Ala Thr Thr Asp Leu Gly
 245 250 255
 Leu Glu Val Val Lys Gly Ser Val Arg Thr Thr Leu Gly Asp Ser Pro
 260 265 270
 Lys Ala Leu Ser Ala Ile Asp Gly Ile Ser Gly Ala Thr Leu Thr Cys
 275 280 285
 Asn Gly Val Thr Glu Ala Tyr Val Gln Ser Leu Ala Cys Tyr Arg Gln
 290 295 300
 Leu Leu Ile Asn Phe Ser Asn Leu Thr His Glu Lys Lys Thr Gly Glu
 305 310 315 320

<210>448

<211>223

<212>PRT

<213>Chlamydia pneumoniae

<400>448

Met Thr Ser Lys Lys Ser Tyr Lys Ser Tyr Phe Phe Asp Pro Leu Trp
 1 5 10 15
 Ser Asn Asn Gln Ile Leu Ile Ala Ile Leu Gly Ile Cys Ser Ala Leu
 20 25 30
 Ala Val Thr Thr Thr Val Gln Thr Ala Ile Thr Met Gly Ile Ala Val
 35 40 45
 Ser Ile Val Thr Gly Cys Ser Ser Phe Phe Val Ser Leu Leu Arg Lys
 50 55 60
 Phe Thr Pro Asp Ser Val Arg Met Ile Thr Gln Leu Ile Ile Ile Ser
 65 70 75 80
 Leu Phe Val Ile Val Ile Asp Gln Phe Leu Lys Ala Phe Phe Phe Asp
 85 90 95
 Ile Ser Lys Thr Leu Ser Val Phe Val Gly Leu Ile Ile Thr Asn Cys
 100 105 110
 Xaa Xaa Met Gly Arg Ser Glu Ser Leu Ala Arg His Val Thr Pro Ile
 115 120 125
 Pro Ala Phe Leu Asp Gly Phe Ala Ser Gly Leu Gly Tyr Gly Trp Val
 130 135 140
 Leu Leu Val Ile Gly Val Ile Arg Glu Leu Phe Gly Phe Gly Thr Pro
 145 150 155 160
 Tyr Gly Val Ser His Pro Ser Ile Cys Tyr Ala Ser Glu Thr His
 165 170 175
 Pro Asp Gly Tyr Gln Asn Leu Ser Leu Met Val Leu Ala Pro Ser Ala
 180 185 190
 Phe Phe Leu Leu Gly Ile Met Ile Trp Leu Val Asn Ile Arg Asp Ser
 195 200 205
 Lys Glu Lys Xaa Val Val Tyr Val Val Arg Cys Val Tyr Leu Ala
 210 215 220

<210>449

<211>256

<212>PRT

<213>Chlamydia pneumoniae

<400>449

Met Trp Leu Gly Ala Tyr Thr Trp Leu Asn Val Phe Gly Ile Leu Leu
1 5 10 15
Gln Ala Ala Phe Ile Gln Asn Ile Leu Ala Asn Phe Leu Gly Met
20 25 30
Cys Ser Tyr Leu Ala Cys Ser Thr Arg Val Ser Thr Ala Asn Gly Leu
35 40 45
Gly Met Ser Val Ala Leu Val Leu Thr Val Thr Gly Ser Ile Asn Trp
50 55 60
Phe Val His Ala Phe Ile Thr Gly Pro Lys Ala Leu Thr Trp Ile Ser
65 70 75 80
Pro Ser Leu Ala Ser Val Asn Leu Gly Phe Leu Glu Leu Ile Ile Phe
85 90 95
Ile Val Val Ile Ala Ala Phe Thr Gln Ile Leu Glu Leu Leu Leu Glu
100 105 110
Lys Val Ser Arg Asn Leu Tyr Leu Ser Leu Gly Ile Phe Leu Pro Leu
115 120 125
Ile Ala Val Asn Cys Ala Ile Leu Gly Gly Val Leu Phe Gly Ile Thr
130 135 140
Arg Ser Tyr Pro Phe Ile Pro Met Met Ile Phe Ser Leu Gly Ala Gly
145 150 155 160
Cys Gly Trp Trp Leu Ala Ile Val Ile Leu Ala Thr Ile Lys Glu Lys
165 170 175
Leu Ala Tyr Ser Asp Ile Pro Lys Asn Leu Gln Gly Met Gly Ile Ser
180 185 190
Phe Ile Thr Thr Gly Leu Ile Ala Met Ala Phe Met Ser Leu Thr Gly
195 200 205
Ile Asp Ile Ser Lys Pro Ser Ala Lys Ile Gln Arg Ala Pro Leu Glu
210 215 220
Thr Glu Val Val Glu Asn Thr Thr Asn Pro Leu Lys Glu Ser Ser Ser
225 230 235 240
Lys His Gln Pro Ser Ile Ser Lys Ala Arg Thr Gln Arg Arg Ser Leu
245 250 255

<210>450

<211>113

<212>PRT

<213>Chlamydia pneumoniae

<400>450

Lys Ile Met Thr Thr Leu Pro Lys Tyr Val Pro Arg Ser Arg Gln Asn
1 5 10 15
Pro Asp Thr Leu Thr Phe Leu Lys Arg Tyr Ser Ser Val Leu Leu His
20 25 30
Ser Glu Asn Ser Leu Ser Tyr Arg Ile Phe Ala Lys Val Leu Ala Ile
35 40 45
Leu Leu Thr Ser Leu Ala Val Ala Phe Ala Val Thr Leu Phe Ser Cys
50 55 60
Glu Gly Ser Gln Leu Arg Leu Cys Ala Leu Tyr Ile Gly Ile Ala Leu
65 70 75 80
Ala Ile Cys Val Leu Leu Thr Ile Val Val Tyr Cys Ile Ala Ser Lys
85 90 95
Ile Ala Thr Ala Cys Lys Lys Pro Pro Ser Ile Ser Arg Ile Glu Ile
100 105 110
Val

<210>451

<211>436

<212>PRT

<213>Chlamydia pneumoniae

<400>451

Gly Glu Xaa Ala Tyr Thr Lys Ile Ser Lys Asn Lys Glu Phe Ser Leu
1 5 10 15
Gly Phe Glu Glu Phe Val Asn Ser Tyr Phe Gln Phe Leu Glu Ile Ser
20 25 30
Glu Ser Glu Phe Phe Asn Met Tyr Arg Asp Ile Leu Leu Cys Lys Arg

35 40 45
 Ala Leu Leu Leu Leu Gln Gly Gly Val Ser Phe Asp Phe Gln Pro Leu
 50 55 60
 Thr Thr Phe Phe Val Gln Gly Lys Asp Ser Ile Gln Val Glu Phe Phe
 65 70 75 80
 Arg Leu Pro Lys Glu Tyr Ser Phe Lys Thr Lys Gln Glu Leu Lys Ala
 85 90 95
 Phe Glu Val Tyr Leu Lys Leu Val Ser Leu Pro Lys Ser Asp Ser Leu
 100 105 110
 Asp Val Pro Asn Glu Ile Leu Pro Ile Ala Thr Ile Lys Ala Lys Glu
 115 120 125
 Pro Arg Leu Val Gly Arg Arg Phe Ser Ile Asp Tyr Lys Arg Val Ala
 130 135 140
 Leu Gln Asp Leu Ala Ala Thr Val Pro Met Val Glu Val Leu His Trp
 145 150 155 160
 Gln Gln Asn Ser Glu His Phe Gln Glu Ile Leu Gln Gln Phe Pro Asp
 165 170 175
 Val Glu Thr Cys Gln Ser Tyr Lys Asp Phe Gln His Leu Lys Pro Ala
 180 185 190
 Leu Arg Asp Lys Ile Ser Leu Phe Thr Arg Lys Glu Ile Leu Arg Ala
 195 200 205
 Arg Pro Glu Arg Ile Leu Gln Ser Leu Gln Gln Val Pro Lys Gln Ser
 210 215 220
 Gln Glu Val Leu Leu Ser Ala Gly Lys Asn Ser Ala Leu Pro Gly Ile
 225 230 235 240
 Ser Asp Gly Gln Gln Leu Ala Lys Val Leu Leu Glu Asn Glu Val Leu
 245 250 255
 Asp Leu Tyr Ser Gln Asp Ala Glu Thr Tyr Tyr Thr Ile Ile Val Asn
 260 265 270
 Ser Ser Phe Glu Lys Glu Glu Val Leu Pro Tyr Arg Glu Val Leu Lys
 275 280 285
 Arg Asp Leu Ala Ser Gln Leu Leu Thr Ser His Gly His Leu Val Asp
 290 295 300
 Met Glu Arg Leu Glu Ser Ala Leu Arg Thr Arg Tyr Pro Gly Glu Glu
 305 310 315 320
 Gly Ala Ser Leu Trp Gln Arg Arg Leu Trp Lys Val Val Glu Asn His
 325 330 335
 Arg Leu Gly Arg His Leu Glu Gly Ser Phe Ser Trp Ser Leu Asp Arg
 340 345 350
 Ser Leu Lys Thr Phe Ser Arg Gly Asp Lys Glu Leu Pro Gln Glu Phe
 355 360 365
 Asp Arg Ile Phe Ser Met Lys Val Gly Asp Tyr Ser Ser Val Phe Met
 370 375 380
 Ser Pro Asn Glu Gly Pro Cys Tyr Tyr Gln Cys Leu Ser His Leu Leu
 385 390 395 400
 Tyr Asp Arg Pro Ala Ser Val Asp Lys Leu Phe Leu Ala Lys Ser Gln
 405 410 415
 Leu Asp Glu Glu Leu Leu Gly Ser Tyr Met Glu Arg Phe Ile Glu Gln
 420 425 430
 Gly Val Val Arg
 435

<210>452

<211>84

<212>PRT

<213>Chlamydia pneumoniae

<400>452

Ser Gln Ala Leu Phe Arg Arg Glu Lys Val Pro Ser Leu Cys Ala Ser
 1 5 10 15
 Thr Asn Val Gly Val Pro Gln Gln Met Phe Ala Leu Pro Pro Asp Glu
 20 25 30
 Ala Leu Ser Arg Gly Lys Asp Leu Arg Leu Phe Gly Tyr Gln Thr Ile
 35 40 45
 Gln Asp Trp Phe Gly Asp Ala Tyr Leu Ser Ala Ala Val Glu Leu Leu
 50 55 60

Ile Arg Phe Ile Asp Glu Gln Lys Lys Val Leu Pro Arg Pro Ser Lys
 65 70 75 80
 Gln Glu Ser Ser

<210>453

<211>269

<212>PRT

<213>Chlamydia pneumoniae

<400>453

Arg Pro Trp Val Arg Ile Tyr Gln Gln Asp Leu Phe Cys Arg Leu Cys
 1 5 10 15
 Arg Asp Pro Ala Trp Phe Phe Ser Leu Leu Ser Phe Thr Leu Arg Phe
 20 25 30
 Tyr Cys Leu Gly Arg Gly Trp Thr Leu Leu Ser Phe Phe Tyr Lys His
 35 40 45
 Gln Lys Lys Phe Ile Gly Ile Val Ile Ala Val Val Cys Val Ser Gly
 50 55 60
 Ile Gly Val Gly Trp Gly Arg Phe Ser Arg Lys Gly Ser Ala Glu Ser
 65 70 75 80
 Thr Ser Arg Arg Thr Val Phe Thr Thr Ala Ser Gly Lys Arg Tyr Val
 85 90 95
 Glu Lys Asp Phe Met Ala Met Lys Lys Phe Phe Ala His Glu Ala Tyr
 100 105 110
 Pro Phe Thr Gly Asn Pro Arg Ala Trp Asn Phe Ile Asn Glu Gly Leu
 115 120 125
 Leu Thr Asp Tyr Phe Leu Thr Thr Arg Val Gly Glu Lys Leu Phe Leu
 130 135 140
 Lys Val Tyr His Pro Gly Glu Lys Ile Phe Ser Lys Glu Lys Ala Tyr
 145 150 155 160
 Gln Pro Tyr Arg Arg Phe Asp Ala Pro Phe Ile Ser Ser Glu Glu Val
 165 170 175
 Trp Lys Ser Ser Ala Pro Gln Leu Leu Glu Ile Leu Lys Val Phe Gln
 180 185 190
 Gln Ile Glu Asn Pro Ile Ser Lys Glu Gly Phe Leu Ala Arg Ala Lys
 195 200 205
 Leu Phe Leu Glu Glu Arg Arg Phe Pro His Tyr Val Leu Arg Gln Met
 210 215 220
 Leu Glu Tyr Arg Ser Lys Cys Leu Leu Phe Pro Gln Met Lys Pro Tyr
 225 230 235 240
 Leu Ala Gly Lys Thr Cys Gly Tyr Leu Ala Thr Arg Arg Phe Lys Thr
 245 250 255
 Gly Leu Gly Met Pro Thr Phe Leu Leu Leu Ser Ser
 260 265

<210>454

<211>196

<212>PRT

<213>Chlamydia pneumoniae

<400>454

Ala Thr Gln Ser Trp Thr Gln Glu Tyr Leu Lys Leu Ile Gln Gly Ala
 1 5 10 15
 Arg Ser Ser Val Lys Leu Ala His Met Tyr Phe Ile Pro Lys Asp Glu
 20 25 30
 Leu Leu Asn Ala Leu Val Asp Val Ser His Asn His Gly Val His Leu
 35 40 45
 Ser Leu Ile Thr Asn Gly Cys His Glu Leu Ser Pro Ala Ile Thr Gly
 50 55 60
 Pro Tyr Ala Trp Gly Asn Arg Ile Asn Tyr Phe Ala Leu Leu Tyr Gly
 65 70 75 80
 Lys Arg Tyr Pro Leu Trp Lys Lys Trp Phe Cys Glu Lys Leu Lys Pro
 85 90 95
 Tyr Glu Arg Val Ser Ile Tyr Glu Phe Ala Ile Trp Glu Thr Gln Leu
 100 105 110
 His Lys Lys Cys Met Ile Ile Asp Asp Glu Ile Phe Val Ile Gly Ser
 115 120 125

Tyr Asn Phe Gly Lys Lys Ser Asp Ala Phe Asp Tyr Glu Ile Val
 130 135 140
 Val Ile Glu Ser Pro Glu Val Ala Ala Lys Ala Asn Lys Val Phe Asn
 145 150 155 160
 Lys Asp Ile Gly Leu Ser Ile Pro Val Ser His Gly Asp Ile Phe Ser
 165 170 175
 Trp Tyr Phe His Ser Val His His Thr Leu Gly His Leu Gln Leu Thr
 180 185 190
 Tyr Met Pro Ala
 195

<210>455

<211>214

<212>PRT

<213>Chlamydia pneumoniae

<400>455

Arg Asp Gly Lys Ile Thr Ser Arg Leu Val Trp Ile Trp Phe Gln Ser
 1 5 10 15
 Ser Val Ala Asn Ile Ile Ile Gln Pro Thr Phe Thr Asp Ala Glu Asp
 20 25 30
 Gln Lys Leu Leu Lys Ala Leu Lys Glu Arg His Pro Asn Arg Phe Phe
 35 40 45
 Tyr Val Phe Thr Gly Cys Pro Pro Ser Thr Ser Ile Leu Ala Pro Asn
 50 55 60
 Val Ile Glu Met His Ile Lys Leu Ser Ile Ile Asp Gly Lys Tyr Cys
 65 70 75 80
 Ile Leu Gly Gly Thr Asn Phe Glu Glu Phe Met Cys Thr Pro Gly Asp
 85 90 95
 Glu Val Pro Glu Lys Val Asp Asn Pro Arg Leu Phe Val Ser Gly Val
 100 105 110
 Arg Arg Pro Leu Ala Phe Arg Asp Gln Asp Ile Met Leu Arg Ser Thr
 115 120 125
 Ala Phe Gly Leu Gln Leu Arg Glu Glu Tyr His Lys Gln Phe Ala Met
 130 135 140
 Trp Asp Tyr Tyr Ala His His Met Trp Phe Ile Asp Asn Pro Glu Gln
 145 150 155 160
 Phe Ala Gly Ala Cys Pro Pro Leu Thr Leu Glu Gln Ala Glu Glu Thr
 165 170 175
 Val Phe Pro Gly Phe Asp Lys His Glu Asp Leu Val Leu Val Asp Ser
 180 185 190
 Ser Lys Ile Arg Ile Val Leu Gly Gly Pro His Asp Lys Gln Pro Asn
 195 200 205
 Pro Gly Leu Lys Asn Ile
 210

<210>456

<211>95

<212>PRT

<213>Chlamydia pneumoniae

<400>456

Gly Val Met Met Ser Arg Leu Arg Phe Arg Leu Ala Ala Leu Gly Ile
 1 5 10 15
 Phe Phe Ile Leu Leu Val Pro Asn Ser Val Ser Ala Lys Thr Ile Val
 20 25 30
 Ala Ser Asp Lys Glu Lys Val Gly Val Leu Val Tyr Asp Asn Ser Val
 35 40 45
 Glu Ala Phe Gln Gln Ile Leu Asp Cys Ile Asp His Ala Asn Phe Tyr
 50 55 60
 Val Glu Leu Cys Pro Cys Met Thr Gly Gly Arg Thr Leu Lys Glu Met
 65 70 75 80
 Val Arg Ser Pro Arg Gly Ser Tyr Gly Ser Gly Ser Arg Ala Leu
 85 90 95

<210>457

<211>244

<212>PRT

<213>Chlamydia pneumoniae

<400>457

Phe Tyr Val Cys Tyr Met Lys Val Arg Ile Val Asp Ser Gly Lys Ser
1 5 10 15
Ser Ala Ala Ser His Met Ala Lys Asp Arg Asp Leu Leu Glu Ser Leu
20 25 30
Gln Asp Gly Glu Leu Ile Leu His Leu Tyr Glu Trp Glu Asn Pro Cys
35 40 45
Ser Leu Thr Tyr Gly His Phe Met Arg Pro Glu Lys Phe Leu Leu Ser
50 55 60
Asn Tyr Ala Asp Leu Gly Leu Asp Ala Ala Val Arg Pro Thr Gly Gly
65 70 75 80
Gly Phe Val Phe His Lys Gly Asp Tyr Ala Phe Ser Val Leu Met Ser
85 90 95
Ala Thr His Pro Ser Tyr Ser Ser Ser Val Leu Glu Asn Tyr His Thr
100 105 110
Val Asn Ser Phe Val Ala Lys Val Leu Glu Lys Val Phe Arg Ile Gln
115 120 125
Gly Met Leu Ala Pro Glu Asp Glu Asn Ser Ser Ser Arg Asp Ser Gly
130 135 140
Asn Phe Cys Met Ala Lys Thr Ser Lys Tyr Asp Val Leu Xaa Trp Gly
145 150 155 160
Gln Glu Asp Arg Gly Ala Ala Gln Arg Lys Val Gln Gln Gly Phe Leu
165 170 175
His Gln Gly Ser Leu Phe Leu Ser Gly Ser Ser Ser Glu Phe Tyr Gln
180 185 190
Arg Phe Leu Lys Pro Glu Val Leu Glu Glu Ile Ile Glu Gln Ile Gln
195 200 205
Ile His Ala Phe Phe Pro Leu Gly Leu Glu Ala Ala Asp Glu Val Leu
210 215 220
Gln Glu Ala Arg Gln Gln Val Lys Glu Ala Phe Ile Lys Leu Phe Cys
225 230 235 240
Gly Glu Gly Leu

<210>458

<211>845

<212>PRT

<213>Chlamydia pneumoniae

<400>458

Met Phe Glu Lys Phe Thr Asn Arg Ala Lys Gln Val Ile Lys Leu Ala
1 5 10 15
Lys Lys Glu Ala Gln Arg Leu Asn His Asn Tyr Leu Gly Thr Glu His
20 25 30
Ile Leu Leu Gly Leu Leu Lys Leu Gly Gln Gly Val Ala Val Asn Val
35 40 45
Leu Arg Asn Leu Gly Ile Asp Phe Asp Thr Ala Arg Gln Glu Val Glu
50 55 60
Arg Leu Ile Gly Tyr Gly Pro Glu Ile Gln Val Tyr Gly Asp Ala Ala
65 70 75 80
Leu Thr Gly Arg Val Lys Lys Ser Phe Glu Ser Ala Asn Glu Glu Ala
85 90 95
Ser Leu Leu Glu His Asn Tyr Val Gly Thr Glu His Leu Leu Leu Gly
100 105 110
Ile Leu His Gln Ser Asp Ser Val Ala Leu Gln Val Leu Glu Asn Leu
115 120 125
His Ile Asp Pro Arg Glu Val Arg Lys Glu Ile Leu Lys Glu Leu Glu
130 135 140
Thr Phe Asn Leu Gln Leu Pro Pro Ser Ser Ser Ser Ser Ser
145 150 155 160
Ser Arg Ser Asn Pro Ser Ser Ser Lys Ser Pro Leu Gly Gln Ser Leu
165 170 175
Gly Ser Asp Lys Asn Glu Lys Leu Ser Ala Leu Lys Ala Tyr Gly Tyr
180 185 190
Asp Leu Thr Glu Met Val Arg Glu Ser Lys Leu Asp Pro Val Ile Gly
195 200 205

Arg Ser Ser Glu Val Glu Arg Leu Ile Leu Ile Leu Cys Arg Arg Arg
 210 215 220
 Lys Asn Asn Pro Val Leu Ile Gly Glu Ala Gly Val Gly Lys Thr Ala
 225 230 235 240
 Ile Val Glu Gly Leu Ala Gln Lys Ile Ile Leu Asn Glu Val Pro Asp
 245 250 255
 Ala Leu Arg Lys Lys Arg Leu Ile Thr Leu Asp Leu Ala Leu Met Ile
 260 265 270
 Ala Gly Thr Lys Tyr Arg Gly Gln Phe Glu Glu Arg Ile Lys Ala Val
 275 280 285
 Met Asp Glu Val Arg Lys His Gly Asn Ile Leu Leu Phe Ile Asp Glu
 290 295 300
 Leu His Thr Ile Val Gly Ala Gly Ala Ala Glu Gly Ala Ile Asp Ala
 305 310 315 320
 Ser Asn Ile Leu Lys Pro Ala Leu Ala Arg Gly Glu Ile Gln Cys Ile
 325 330 335
 Gly Ala Thr Thr Ile Asp Glu Tyr Arg Lys His Ile Glu Lys Asp Ala
 340 345 350
 Ala Leu Glu Arg Arg Phe Gln Lys Ile Val Val His Pro Pro Ser Val
 355 360 365
 Asp Glu Thr Ile Glu Ile Leu Arg Gly Leu Lys Lys Lys Tyr Glu Glu
 370 375 380
 His His Asn Val Phe Ile Thr Glu Glu Ala Leu Lys Ala Ala Thr
 385 390 395 400
 Leu Ser Asp Gln Tyr Val His Gly Arg Phe Leu Pro Asp Lys Ala Ile
 405 410 415
 Asp Leu Leu Asp Glu Ala Gly Ala Arg Val Arg Val Asn Thr Met Gly
 420 425 430
 Gln Pro Thr Asp Leu Met Lys Leu Glu Ala Glu Ile Glu Asn Thr Lys
 435 440 445
 Leu Ala Lys Glu Gln Ala Ile Gly Thr Gln Glu Tyr Glu Lys Ala Ala
 450 455 460
 Gly Leu Arg Asp Glu Glu Lys Lys Leu Arg Glu Arg Leu Gln Ser Met
 465 470 475 480
 Lys Gln Glu Trp Glu Asn His Lys Glu Glu His Gln Val Pro Val Asp
 485 490 495
 Glu Glu Ala Val Ala Gln Val Val Ser Leu Gln Thr Gly Ile Pro Ser
 500 505 510
 Ala Arg Leu Thr Glu Ala Glu Ser Glu Lys Leu Leu Lys Leu Glu Asp
 515 520 525
 Thr Leu Arg Arg Lys Val Ile Gly Gln Asn Asp Ala Val Thr Ser Ile
 530 535 540
 Cys Arg Ala Ile Arg Arg Ser Arg Thr Gly Ile Lys Asp Pro Asn Arg
 545 550 555 560
 Pro Thr Gly Ser Phe Leu Phe Leu Gly Pro Thr Gly Val Gly Lys Ser
 565 570 575
 Leu Leu Ala Gln Gln Ile Ala Ile Glu Met Phe Gly Gly Glu Asp Ala
 580 585 590
 Leu Ile Gln Val Asp Met Ser Glu Tyr Met Glu Lys Phe Ala Ala Thr
 595 600 605
 Lys Met Met Gly Ser Pro Pro Gly Tyr Val Gly His Glu Glu Gly Gly
 610 615 620
 His Leu Thr Glu Gln Val Arg Arg Arg Pro Tyr Cys Val Val Leu Phe
 625 630 635 640
 Asp Glu Ile Glu Lys Ala His Pro Asp Ile Met Asp Leu Met Leu Gln
 645 650 655
 Ile Leu Glu Gln Gly Arg Leu Thr Asp Ser Phe Gly Arg Lys Val Asp
 660 665 670
 Phe Arg His Ala Ile Ile Ile Met Thr Ser Asn Leu Gly Ala Asp Leu
 675 680 685
 Ile Arg Lys Ser Gly Glu Ile Gly Phe Gly Leu Lys Ser His Met Asp
 690 695 700
 Tyr Lys Val Ile Gln Glu Lys Ile Glu His Ala Met Lys Lys His Leu
 705 710 715 720

Lys Pro Glu Phe Ile Asn Arg Leu Asp Glu Ser Val Ile Phe Arg Pro
 725 730 735
 Leu Glu Lys Glu Ser Leu Ser Glu Ile Ile His Leu Glu Ile Asn Lys
 740 745 750
 Leu Asp Ser Arg Leu Lys Asn Tyr Gln Met Ala Leu Asn Ile Pro Asp
 755 760 765
 Ser Val Ile Ser Phe Leu Val Thr Lys Gly His Ser Pro Glu Met Gly
 770 775 780
 Ala Arg Pro Leu Arg Arg Val Ile Glu Gln Tyr Leu Glu Asp Pro Leu
 785 790 795 800
 Ala Glu Leu Leu Leu Lys Glu Ser Cys Arg Gln Glu Ala Arg Lys Leu
 805 810 815
 Arg Ala Thr Leu Val Glu Asn Arg Val Ala Phe Glu Arg Glu Glu Glu
 820 825 830
 Glu Gln Glu Ala Ala Leu Pro Ser Pro His Leu Glu Ser
 835 840 845

<210>459

<211>374

<212>PRT

<213>Chlamydia pneumoniae

<400>459

Asn Leu Thr Leu Pro Met Arg Arg Gln Val Arg Glu Ile Met Gln Gln
 1 5 10 15
 Thr Val Ile Val Ala Met Ser Gly Gly Val Asp Ser Ser Val Val Ala
 20 25 30
 Tyr Leu Phe Lys Lys Phe Thr Asn Tyr Lys Val Ile Gly Leu Phe Met
 35 40 45
 Lys Asn Trp Glu Glu Asp Ser Glu Gly Gly Leu Cys Ser Ser Thr Lys
 50 55 60
 Asp Tyr Glu Asp Val Glu Arg Val Cys Leu Gln Leu Asp Ile Pro Tyr
 65 70 75 80
 Tyr Thr Val Ser Phe Ala Lys Glu Tyr Arg Glu Arg Val Phe Ala Arg
 85 90 95
 Phe Leu Lys Glu Tyr Ser Leu Gly Tyr Thr Pro Asn Pro Asp Ile Leu
 100 105 110
 Cys Asn Arg Glu Ile Lys Phe Asp Leu Leu Gln Lys Lys Val Gln Glu
 115 120 125
 Leu Gly Gly Asp Tyr Leu Ala Thr Gly His Tyr Cys Arg Leu Asn Thr
 130 135 140
 Glu Leu Gln Glu Thr Gln Leu Leu Arg Gly Cys Asp Pro Gln Lys Asp
 145 150 155 160
 Gln Ser Tyr Phe Leu Ser Gly Thr Pro Lys Ser Ala Leu His Asn Val
 165 170 175
 Leu Phe Pro Leu Gly Glu Met Asn Lys Thr Glu Val Arg Ala Ile Ala
 180 185 190
 Ala Gln Ala Ala Leu Pro Thr Ala Glu Lys Lys Asp Ser Thr Gly Ile
 195 200 205
 Cys Phe Ile Gly Lys Arg Pro Phe Lys Glu Phe Leu Glu Lys Phe Leu
 210 215 220
 Pro Asn Lys Thr Gly Asn Val Ile Asp Trp Asp Thr Lys Glu Ile Val
 225 230 235 240
 Gly Gln His Gln Gly Ser His Tyr Tyr Thr Ile Gly Gln Arg Arg Gly
 245 250 255
 Leu Asp Leu Gly Gly Ser Glu Lys Pro Xaa Tyr Val Val Gly Lys Asn
 260 265 270
 Ile Glu Glu Asn Ser Ile Tyr Ile Val Arg Gly Glu Asp His Pro Gln
 275 280 285
 Leu Tyr Leu Arg Glu Leu Thr Ala Arg Glu Leu Asn Trp Phe Thr Pro
 290 295 300
 Pro Lys Ser Gly Cys His Cys Ser Ala Lys Val Arg Tyr Arg Ser Pro
 305 310 315 320
 Asp Glu Ala Cys Thr Ile Asp Tyr Ser Ser Gly Asp Glu Val Lys Val
 325 330 335
 Arg Phe Ser Gln Pro Val Lys Ala Val Thr Pro Gly Gln Thr Ile Ala

WO 99/27105

340
 Phe Tyr Gln Gly Asp Thr Cys Leu Gly Ser Gly Val Ile Asp Val Pro
 355 360 365
 Met Ile Pro Ser Glu Gly

370
 <210>460
 <211>185
 <212>PRT
 <213>Chlamydia pneumoniae

<400>460
 Ile Ile Ser Ser Asn Asn Arg Val Leu Phe Val Ser Ser Thr Leu Asn
 1 5 10 15
 Gly Val Phe Pro Ser Ser Leu Pro Glu Ser Ala Asp Leu Phe Ile
 20 25 30
 Thr Asn Lys Glu Ile Val Ala Leu Gly Glu Lys Gly Asn Val Phe Leu
 35 40 45
 Thr His Ser Ile Pro Met His Ile Ala Ala Ile Thr Ile Leu Val Ile
 50 55 60
 Val Ala Leu Ala Gly Ile Ala Ile Ile Cys Leu Gly Cys Tyr Ser Gln
 65 70 75 80
 Ser Ile Leu Leu Ile Ala Val Gly Ile Val Leu Thr Ile Leu Thr Leu
 85 90 95
 Leu Cys Leu Gln Ala Leu Val Gly Phe Ile Lys Phe Ile Arg Gln Leu
 100 105 110
 Pro Gln Gln Leu His Thr Thr Val Gln Phe Ile Arg Glu Lys Ile Arg
 115 120 125
 Pro Glu Ser Ser Leu Gln Leu Val Thr Asn Ala Gln Arg Lys Thr Thr
 130 135 140
 Gln Asp Thr Leu Lys Leu Tyr Glu Glu Leu Cys Asp Leu Ser Gln Lys
 145 150 155 160
 Glu Phe Lys Leu Gln Ser Thr Leu Tyr Gln Lys Arg Phe Glu Leu Ser
 165 170 175
 His Lys Asn Glu Lys Thr Asn Gln Asn
 180 185

<210>461
 <211>220
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>461

Leu Ala Thr Ile Arg Gly Asn Asn Met Ala Thr Ser Val Ala Pro Ser
 1 5 10 15
 Pro Val Pro Glu Ser Ser Pro Leu Ser His Ala Thr Glu Val Leu Asn
 20 25 30
 Leu Pro Asn Ala Tyr Ile Thr Gln Pro His Pro Ile Pro Ala Ala Pro
 35 40 45
 Trp Glu Thr Phe Arg Ser Lys Leu Ser Thr Lys His Thr Leu Cys Phe
 50 55 60
 Ala Leu Thr Leu Leu Leu Thr Leu Gly Gly Thr Ile Ser Ala Gly Tyr
 65 70 75 80
 Ala Gly Tyr Thr Gly Asn Trp Ile Ile Cys Gly Ile Gly Leu Gly Ile
 85 90 95
 Ile Val Leu Thr Leu Ile Leu Ala Leu Leu Leu Ala Ile Pro Leu Lys
 100 105 110
 Asn Lys Gln Thr Gly Thr Lys Leu Ile Asp Glu Ile Ser Gln Asp Ile
 115 120 125
 Ser Ser Ile Gly Ser Gly Phe Val Gln Arg Tyr Gly Leu Met Phe Ser
 130 135 140
 Thr Ile Lys Ser Val His Leu Pro Glu Leu Thr Thr Gln Asn Gln Glu
 145 150 155 160
 Lys Thr Arg Ile Leu Asn Glu Ile Glu Ala Lys Lys Glu Ser Ile Gln
 165 170 175
 Asn Leu Glu Leu Lys Ile Thr Glu Cys Gln Asn Lys Leu Ala Gln Lys
 180 185 190
 Gln Pro Lys Arg Lys Ser Ser Gln Lys Ser Phe Met Arg Ser Ile Lys

195 200 205
 His Leu Ser Lys Asn Pro Val Ile Leu Phe Asp Cys
 210 215 220
 <210>462
 <211>159
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>462
 Arg Trp Arg Ile Leu Gln Asn Met Phe Lys Leu Leu Phe His Ile Ala
 1 5 10 15
 Ala Phe Ala Gly His Val Leu Ser Thr Pro Ile Phe Ile Val Gln Asp
 20 25 30
 Ala Cys Gly Ile Asp Glu Glu Ala Cys Lys Asn Pro Pro Arg Pro
 35 40 45
 Phe Ser Ala Gln Val Gln Tyr Leu Lys Val Asn Asp Ala Lys Phe Lys
 50 55 60
 Lys Leu Pro His Gln Thr Ile Gly Tyr Arg Gln Tyr Asp Gly Thr Phe
 65 70 75 80
 Leu Cys Thr Leu Pro Ile Thr Glu His Ser Gly Leu Leu Phe Ser Thr
 85 90 95
 Gly Tyr Ile Gly Ala Asp Ile Gln Trp Lys Ser Ser Leu Pro Ile Ser
 100 105 110
 Glu Thr Asp Pro Asn Gly Leu Gly Trp Ala Thr Phe Gln Asp Thr Ser
 115 120 125
 Phe Tyr Asn Tyr Val Leu Leu Ser Leu Gly Ala Tyr Thr Leu Ser Xaa
 130 135 140
 Lys Lys Leu Ala Val Val Tyr His Ser Phe Trp Ala Cys Gly Ser
 145 150 155
 <210>463
 <211>186
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>463
 Glu Leu Ile His Ser Pro Leu Lys Asn Trp Gln Trp Ser Ile Ile Leu
 1 5 10 15
 Ser Gly Leu Val Asp Pro Lys Asn Ile Glu Met Gly Tyr Gly Leu Tyr
 20 25 30
 Gln Gly Val Leu Ser Gly Lys Tyr Gln Ala Thr Glu Lys Leu Ser Ala
 35 40 45
 Ile Phe Gly Val Ile Asn Glu Thr Gly Leu His Gln Glu Lys Ala Trp
 50 55 60
 Pro Leu Val Gly Val Ser Tyr Lys Ala Thr Asp Gln Leu Thr Leu Asn
 65 70 75 80
 Cys Ile Tyr Pro Val Asn Phe Ser Ile Asp Tyr Arg Ser Thr Ser Val
 85 90 95
 Cys Asn Leu Gly Leu Ala Tyr Arg Leu Thr Arg Phe Arg Lys Lys Leu
 100 105 110
 Tyr Lys Asn His Leu Ile Ser Ser Arg Gly Ile Phe Glu Tyr Gln Gly
 115 120 125
 Arg Glu Ile Glu Ala Asn Val Lys Leu Thr Pro Trp Pro Gly Ser Phe
 130 135 140
 Ile Lys Gly Phe Tyr Gly Trp Ser Ile Gly Asn Asp Ile Ser Ile Ala
 145 150 155 160
 Asp Asp His Asn Asn Asn Lys Thr Ser His Thr Phe Lys Thr Ser Ala
 165 170 175
 Phe Phe Gly Gly Ser Ala Val Met Asn Phe
 180 185
 <210>464
 <211>127
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>464
 Val Asp Ser Met Ser Gln Pro Pro Ile Asn Pro Leu Gly Gln Pro Gln
 1 5 10 15

Val Pro Ala Ala Ala Ser Pro Ser Gly Gln Pro Ser Val Val Lys Arg
 20 25 30
 Leu Lys Thr Ser Ser Thr Gly Leu Phe Lys Arg Phe Ile Thr Val Pro
 35 40 45
 Asp Lys Tyr Pro Lys Met Arg Tyr Val Tyr Asp Thr Gly Ile Ile Ala
 50 55 60
 Leu Ala Ala Ile Ala Ile Leu Ser Ile Leu Leu Thr Ala Ser Gly Asn
 65 70 75 80
 Ser Leu Met Leu Tyr Ala Leu Ala Pro Ala Leu Ala Leu Gly Ala Leu
 85 90 95
 Gly Val Thr Leu Leu Ile Ser Asp Ile Leu Asp Ser Pro Lys Pro Arg
 100 105 110
 Lys Ser Val Arg Gln Ser Leu Leu Ser Ser Phe Leu Ser Leu Tyr
 115 120 125

<210>465

<211>91

<212>PRT

<213>Chlamydia pneumoniae

<400>465

Tyr Ser Gly Gln Ser Glu Ala Lys Lys Ile Gly Glu Ala Ile Thr Ala
 1 5 10 15
 Ile Val Val Pro Ile Ile Val Leu Ala Ile Ala Ala Gly Leu Ile Ala
 20 25 30
 Gly Ala Phe Val Ala Ser Ser Gly Thr Met Leu Val Phe Ala Asn Pro
 35 40 45
 Met Phe Val Met Gly Leu Ile Thr Val Gly Leu Tyr Phe Met Ser Leu
 50 55 60
 Asn Lys Leu Thr Leu Asp Tyr Phe Arg Arg Glu His Leu Leu Arg Met
 65 70 75 80
 Glu Lys Lys Thr Gln Glu Thr Ala Asp Leu Phe
 85 90

<210>466

<211>1132

<212>PRT

<213>Chlamydia pneumoniae

<400>466

Met Lys Tyr Ser Leu Pro Trp Leu Leu Thr Ser Ser Ala Leu Val Phe
 1 5 10 15
 Ser Leu His Pro Leu Met Ala Ala Asn Thr Asp Leu Ser Ser Ser Asp
 20 25 30
 Asn Tyr Glu Asn Gly Ser Ser Gly Ser Ala Ala Phe Thr Ala Lys Glu
 35 40 45
 Thr Ser Asp Ala Ser Gly Thr Thr Tyr Thr Leu Thr Ser Asp Val Ser
 50 55 60
 Ile Thr Asn Val Ser Ala Ile Thr Pro Ala Asp Lys Ser Cys Phe Thr
 65 70 75 80
 Asn Thr Gly Gly Ala Leu Ser Phe Val Gly Ala Asp His Ser Leu Val
 85 90 95
 Leu Gln Thr Ile Ala Leu Thr His Asp Gly Ala Ala Ile Asn Asn Thr
 100 105 110
 Asn Thr Ala Leu Ser Phe Ser Gly Phe Ser Ser Leu Leu Ile Asp Ser
 115 120 125
 Ala Pro Ala Thr Gly Thr Ser Gly Gly Lys Gly Ala Ile Cys Val Thr
 130 135 140
 Asn Thr Glu Gly Gly Thr Ala Thr Phe Thr Asp Asn Ala Ser Val Thr
 145 150 155 160
 Leu Gln Lys Asn Thr Ser Glu Lys Asp Gly Ala Ala Val Ser Ala Tyr
 165 170 175
 Ser Ile Asp Leu Ala Lys Thr Thr Thr Ala Ala Leu Leu Asp Gln Asn
 180 185 190
 Thr Ser Thr Lys Asn Gly Gly Ala Leu Cys Ser Thr Ala Asn Thr Thr
 195 200 205
 Val Gln Gly Asn Ser Gly Thr Val Thr Phe Ser Ser Asn Thr Ala Thr
 210 215 220

Asp	Lys	Gly	Gly	Gly	Ile	Tyr	Ser	Lys	Glu	Lys	Asp	Ser	Thr	Leu	Asp	225	230	235	240
Ala	Asn	Thr	Gly	Val	Val	Thr	Phe	Lys	Ser	Asn	Thr	Ala	Lys	Thr	Gly	245	250	255	
Gly	Ala	Trp	Ser	Ser	Asp	Asp	Asn	Leu	Ala	Leu	Thr	Gly	Asn	Thr	Gln	260	265	270	
Val	Leu	Phe	Gln	Glu	Asn	Lys	Thr	Thr	Gly	Ser	Ala	Ala	Gln	Ala	Asn	275	280	285	
Asn	Pro	Glu	Gly	Cys	Gly	Gly	Ala	Ile	Cys	Cys	Tyr	Leu	Ala	Thr	Ala	290	295	300	
Thr	Asp	Lys	Thr	Gly	Leu	Ala	Ile	Ser	Gln	Asn	Gln	Glu	Met	Ser	Phe	305	310	315	320
Thr	Ser	Asn	Thr	Thr	Thr	Ala	Asn	Gly	Gly	Ala	Ile	Tyr	Ala	Thr	Lys	325	330	335	
Cys	Thr	Leu	Asp	Gly	Asn	Thr	Thr	Leu	Thr	Phe	Asp	Gln	Asn	Thr	Ala	340	345	350	
Thr	Ala	Gly	Cys	Gly	Gly	Ala	Ile	Tyr	Thr	Glu	Thr	Glu	Asp	Phe	Ser	355	360	365	
Leu	Lys	Gly	Ser	Thr	Gly	Thr	Val	Thr	Phe	Ser	Thr	Asn	Thr	Ala	Lys	370	375	380	
Thr	Gly	Gly	Ala	Leu	Tyr	Ser	Lys	Glu	Asn	Ser	Ser	Leu	Thr	Gly	Asn	385	390	395	400
Thr	Asn	Leu	Leu	Phe	Ser	Gly	Asn	Lys	Ala	Thr	Gly	Pro	Ser	Asn	Ser	405	410	415	
Ser	Ala	Asn	Gln	Glu	Gly	Cys	Gly	Gly	Ala	Ile	Leu	Ser	Phe	Leu	Glu	420	425	430	
Ser	Ala	Ser	Val	Ser	Thr	Lys	Lys	Gly	Leu	Trp	Ile	Glu	Asp	Asn	Glu	435	440	445	
Asn	Val	Ser	Leu	Ser	Gly	Asn	Thr	Ala	Thr	Val	Ser	Gly	Gly	Ala	Ile	450	455	460	
Tyr	Ala	Thr	Lys	Cys	Ala	Leu	His	Gly	Asn	Thr	Thr	Leu	Thr	Phe	Asp	465	470	475	480
Gly	Asn	Thr	Ala	Glu	Thr	Ala	Gly	Gly	Ala	Ile	Tyr	Thr	Glu	Thr	Glu	485	490	495	
Asp	Phe	Thr	Leu	Thr	Gly	Ser	Thr	Gly	Thr	Val	Thr	Phe	Ser	Thr	Asn	500	505	510	
Thr	Ala	Lys	Thr	Ala	Gly	Ala	Leu	His	Thr	Lys	Gly	Asn	Thr	Ser	Phe	515	520	525	
Thr	Lys	Asn	Lys	Ala	Leu	Val	Phe	Ser	Gly	Asn	Ser	Ala	Thr	Ala	Thr	530	535	540	
Ala	Thr	Thr	Thr	Thr	Asp	Gln	Glu	Gly	Cys	Gly	Gly	Ala	Ile	Leu	Cys	545	550	555	560
Asn	Ile	Ser	Glu	Ser	Asp	Ile	Ala	Thr	Lys	Ser	Leu	Thr	Leu	Thr	Glu	565	570	575	
Asn	Glu	Ser	Leu	Ser	Phe	Ile	Asn	Asn	Thr	Ala	Lys	Arg	Ser	Gly	Gly	580	585	590	
Gly	Ile	Tyr	Ala	Pro	Lys	Cys	Val	Ile	Ser	Gly	Ser	Glu	Ser	Ile	Asn	595	600	605	
Phe	Asp	Gly	Asn	Thr	Ala	Glu	Thr	Ser	Gly	Gly	Ala	Ile	Tyr	Ser	Lys	610	615	620	
Asn	Leu	Ser	Ile	Thr	Ala	Asn	Gly	Pro	Val	Ser	Phe	Thr	Asn	Asn	Ser	625	630	635	640
Gly	Gly	Lys	Gly	Gly	Ala	Ile	Tyr	Ile	Ala	Asp	Ser	Gly	Glu	Leu	Ser	645	650	655	
Leu	Glu	Ala	Ile	Asp	Gly	Asp	Ile	Thr	Phe	Ser	Gly	Asn	Arg	Ala	Thr	660	665	670	
Glu	Gly	Thr	Ser	Thr	Pro	Asn	Ser	Ile	His	Leu	Gly	Ala	Gly	Ala	Lys	675	680	685	
Ile	Thr	Lys	Leu	Ala	Ala	Ala	Pro	Gly	His	Thr	Ile	Tyr	Phe	Tyr	Asp	690	695	700	
Pro	Ile	Thr	Met	Glu	Ala	Pro	Ala	Ser	Gly	Gly	Thr	Ile	Glu	Glu	Leu	705	710	715	720
Val	Ile	Asn	Pro	Val	Val	Lys	Ala	Ile	Val	Pro	Pro	Pro	Gln	Pro	Lys	725	730	735	

Asn Gly Pro Ile Ala Ser Val Pro Val Val Pro Val Ala Ala Asn
 740 745 750
 Pro Asn Thr Gly Thr Ile Val Phe Ser Ser Gly Lys Leu Pro Ser Gln
 755 760 765
 Asp Ala Ser Ile Pro Ala Asn Thr Thr Thr Ile Leu Asn Gln Lys Ile
 770 775 780
 Asn Leu Ala Gly Gly Asn Val Val Leu Lys Glu Gly Ala Thr Leu Gln
 785 790 795 800
 Val Tyr Ser Phe Thr Gln Gln Pro Asp Ser Thr Val Phe Met Asp Ala
 805 810 815
 Gly Thr Thr Leu Glu Thr Thr Thr Thr Asn Asn Thr Asp Gly Ser Ile
 820 825 830
 Asp Leu Lys Asn Leu Ser Val Asn Leu Asp Ala Leu Asp Gly Lys Arg
 835 840 845
 Met Ile Thr Ile Ala Val Asn Ser Thr Ser Gly Gly Leu Lys Ile Ser
 850 855 860
 Gly Asp Leu Lys Phe His Asn Asn Glu Gly Ser Phe Tyr Asp Asn Pro
 865 870 875 880
 Gly Leu Lys Ala Asn Leu Asn Leu Pro Phe Leu Asp Leu Ser Ser Thr
 885 890 895
 Ser Gly Thr Val Asn Leu Asp Asp Phe Asn Pro Ile Pro Ser Ser Met
 900 905 910
 Ala Ala Pro Asp Tyr Gly Tyr Gln Gly Ser Trp Thr Leu Val Pro Lys
 915 920 925
 Val Gly Ala Gly Gly Lys Val Thr Leu Val Ala Glu Trp Gln Ala Leu
 930 935 940
 Gly Tyr Thr Pro Lys Pro Glu Leu Arg Ala Thr Leu Val Pro Asn Ser
 945 950 955 960
 Leu Trp Asn Ala Tyr Val Asn Ile His Ser Ile Gln Gln Glu Ile Ala
 965 970 975
 Thr Ala Met Ser Asp Ala Pro Ser His Pro Gly Ile Trp Ile Gly Gly
 980 985 990
 Ile Gly Asn Ala Phe His Gln Asp Lys Gln Lys Glu Asn Ala Gly Phe
 995 1000 1005
 Arg Leu Ile Ser Arg Gly Tyr Ile Val Gly Gly Ser Met Thr Thr Pro
 1010 1015 1020
 Gln Glu Tyr Thr Phe Ala Val Ala Phe Ser Gln Leu Phe Gly Lys Ser
 1025 1030 1035 1040
 Lys Asp Tyr Val Val Ser Asp Ile Lys Ser Gln Val Tyr Ala Gly Ser
 1045 1050 1055
 Leu Cys Ala Gln Ser Ser Tyr Val Ile Pro Leu His Ser Ser Leu Arg
 1060 1065 1070
 Arg His Val Leu Ser Lys Val Leu Pro Glu Leu Pro Gly Glu Thr Pro
 1075 1080 1085
 Leu Val Leu His Gly Gln Val Ser Tyr Gly Arg Asn His His Asn Met
 1090 1095 1100
 Thr Thr Lys Leu Ala Asn Asn Thr Gln Gly Lys Ser Asp Trp Asp Ser
 1105 1110 1115 1120
 His Ser Ser Leu Leu Lys Ser Val Val Leu Phe Leu
 1125 1130

<210>467

<211>154

<212>PRT

<213>Chlamydia pneumoniae

<400>467

Phe Ala Val Glu Val Gly Gly Ser Leu Pro Val Asp Leu Asn Tyr Arg
 1 5 10 15
 Tyr Leu Thr Ser Tyr Ser Pro Tyr Val Lys Leu Gln Val Val Ser Val
 20 25 30
 Asn Gln Lys Gly Phe Gln Glu Val Ala Ala Asp Pro Arg Ile Phe Asp
 35 40 45
 Ala Ser His Leu Val Asn Val Ser Ile Pro Met Gly Leu Thr Phe Lys
 50 55 60
 His Glu Ser Ala Lys Pro Pro Ser Ala Leu Leu Leu Thr Leu Gly Tyr

65	70	75	80
Ala Val Asp Ala Tyr Arg Asp His Pro His Cys Leu Thr Ser Leu Thr			
	85	90	95
Asn Gly Thr Ser Trp Ser Thr Phe Ala Thr Asn Leu Ser Arg Gln Ala			
	100	105	110
Phe Phe Ala Glu Ala Ser Gly His Leu Lys Leu Leu His Gly Leu Asp			
	115	120	125
Cys Phe Ala Ser Gly Ser Cys Glu Leu Arg Ser Ser Ser Arg Ser Tyr			
	130	135	140
Asn Ala Asn Cys Gly Thr Arg Tyr Ser Phe			
145	150		
<210>468			
<211>671			
<212>PRT			
<213>Chlamydia pneumoniae			
<400>468			
Met Lys Ser Ser Val Ser Trp Leu Phe Phe Ser Ser Ile Pro Leu Phe			
1	5	10	15
Ser Ser Leu Ser Ile Val Ala Ala Glu Val Thr Leu Asp Ser Ser Asn			
	20	25	30
Asn Ser Tyr Asp Gly Ser Asn Gly Thr Thr Phe Thr Val Phe Ser Thr			
	35	40	45
Thr Asp Ala Ala Ala Gly Thr Thr Tyr Ser Leu Leu Ser Asp Val Ser			
	50	55	60
Phe Gln Asn Ala Gly Ala Leu Gly Ile Pro Leu Ala Ser Gly Cys Phe			
	65	70	75
Leu Glu Ala Gly Gly Asp Leu Thr Phe Gln Gly Asn Gln His Ala Leu			
	85	90	95
Lys Phe Ala Phe Ile Asn Ala Gly Ser Ser Ala Gly Thr Val Ala Ser			
	100	105	110
Thr Ser Ala Ala Asp Lys Asn Leu Leu Phe Asn Asp Phe Ser Arg Leu			
	115	120	125
Ser Ile Ile Ser Cys Pro Ser Leu Leu Leu Ser Pro Thr Gly Gln Cys			
	130	135	140
Ala Leu Lys Ser Val Gly Asn Leu Ser Leu Thr Gly Asn Ser Gln Ile			
	145	150	155
Ile Phe Thr Gln Asn Phe Ser Ser Asp Asn Gly Gly Val Ile Asn Thr			
	165	170	175
Lys Asn Phe Leu Leu Ser Gly Thr Ser Gln Phe Ala Ser Phe Ser Arg			
	180	185	190
Asn Gln Ala Phe Thr Gly Lys Gln Gly Gly Val Val Tyr Ala Thr Gly			
	195	200	205
Thr Ile Thr Ile Glu Asn Ser Pro Gly Ile Val Ser Phe Ser Gln Asn			
	210	215	220
Leu Ala Lys Gly Ser Gly Gly Ala Leu Tyr Ser Thr Asp Asn Cys Ser			
	225	230	235
Ile Thr Asp Asn Phe Gln Val Ile Phe Asp Gly Asn Ser Ala Trp Glu			
	245	250	255
Ala Ala Gln Ala Gln Gly Gly Ala Ile Cys Cys Thr Thr Thr Asp Lys			
	260	265	270
Thr Val Thr Leu Thr Gly Asn Lys Asn Leu Ser Phe Thr Asn Asn Thr			
	275	280	285
Ala Leu Thr Tyr Gly Gly Ala Ile Ser Gly Leu Lys Val Ser Ile Ser			
	290	295	300
Ala Gly Gly Pro Thr Leu Phe Gln Ser Asn Ile Ser Gly Ser Ser Ala			
	305	310	315
Gly Gln Gly Gly Gly Ala Ile Asn Ile Ala Ser Ala Gly Glu Leu			
	325	330	335
Ala Leu Ser Ala Thr Ser Gly Asp Ile Thr Phe Asn Asn Asn Gln Val			
	340	345	350
Thr Asn Gly Ser Thr Ser Thr Arg Asn Ala Ile Asn Ile Ile Asp Thr			
	355	360	365
Ala Lys Val Thr Ser Ile Arg Ala Ala Thr Gly Gln Ser Ile Tyr Phe			
	370	375	380

Tyr Asp Pro Ile Thr Asn Pro Gly Thr Ala Ala Ser Thr Asp Thr Leu
 385 390 395 400
 Asn Leu Asn Leu Ala Asp Ala Asn Ser Glu Ile Glu Tyr Gly Gly Ala
 405 410 415
 Ile Val Phe Ser Gly Glu Lys Leu Ser Pro Thr Glu Lys Ala Ile Ala
 420 425 430
 Ala Asn Val Thr Ser Thr Ile Arg Gln Pro Ala Val Leu Ala Arg Gly
 435 440 445
 Asp Leu Val Leu Arg Asp Gly Val Thr Val Thr Phe Lys Asp Leu Thr
 450 455 460
 Gln Ser Pro Gly Ser Arg Ile Leu Met Asp Gly Gly Thr Thr Leu Ser
 465 470 475 480
 Ala Lys Glu Ala Asn Leu Ser Leu Asn Gly Leu Ala Val Asn Leu Ser
 485 490 495
 Ser Leu Asp Gly Thr Asn Lys Ala Ala Leu Lys Thr Glu Ala Ala Asp
 500 505 510
 Lys Asn Ile Ser Leu Ser Gly Thr Ile Ala Leu Ile Asp Thr Glu Gly
 515 520 525
 Ser Phe Tyr Glu Asn His Asn Leu Lys Ser Ala Ser Thr Tyr Pro Leu
 530 535 540
 Leu Glu Leu Thr Thr Ala Gly Ala Asn Gly Thr Ile Thr Leu Gly Ala
 545 550 555 560
 Leu Ser Thr Leu Thr Leu Gln Glu Pro Glu Thr His Tyr Gly Tyr Gln
 565 570 575
 Gly Asn Trp Gln Leu Ser Trp Ala Asn Ala Thr Ser Ser Lys Ile Gly
 580 585 590
 Ser Ile Asn Trp Thr Arg Thr Gly Tyr Ile Pro Ser Pro Glu Arg Lys
 595 600 605
 Ser Asn Leu Pro Leu Asn Ser Leu Trp Gly Asn Phe Ile Asp Ile Arg
 610 615 620
 Ser Ile Asn Gln Leu Ile Glu Thr Lys Ser Ser Gly Glu Pro Phe Glu
 625 630 635 640
 Arg Glu Tyr Gly Phe Gln Glu Leu Arg Ile Ser Ser Ile Glu Ile Leu
 645 650 655
 Cys Pro Pro Ala Met Val Ser Ala Ile Ser Ala Gly Val Met His
 660 665 670

<210>469

<211>294

<212>PRT

<213>Chlamydia pneumoniae

<400>469

Val Trp Leu Ser Gly Ile Ala Asn Phe Phe Tyr Arg Asp Ser Met Pro
 1 5 10 15
 Thr Arg His Gly Phe Arg His Ile Ser Gly Gly Tyr Ala Leu Gly Ile
 20 25 30
 Thr Ala Thr Thr Pro Ala Glu Asp Gln Leu Thr Phe Ala Phe Cys Gln
 35 40 45
 Leu Phe Ala Arg Asp Arg Asn His Ile Thr Gly Lys Asn His Gly Asp
 50 55 60
 Thr Tyr Gly Ala Ser Leu Tyr Phe His His Thr Glu Gly Leu Phe Asp
 65 70 75 80
 Ile Ala Asn Phe Leu Trp Gly Lys Ala Thr Arg Ala Pro Trp Val Leu
 85 90 95
 Ser Glu Ile Ser Gln Ile Ile Pro Leu Ser Phe Asp Ala Lys Phe Ser
 100 105 110
 Tyr Leu His Thr Asp Asn His Met Lys Thr Tyr Tyr Thr Asp Asn Ser
 115 120 125
 Ile Ile Lys Gly Ser Trp Arg Asn Asp Ala Phe Cys Ala Asp Leu Gly
 130 135 140
 Ala Ser Leu Pro Phe Val Ile Ser Val Pro Tyr Leu Leu Lys Glu Val
 145 150 155 160
 Glu Pro Phe Val Lys Val Gln Tyr Ile Tyr Ala His Gln Gln Asp Phe
 165 170 175
 Tyr Glu Arg Tyr Ala Glu Gly Arg Ala Phe Asn Lys Ser Glu Leu Ile

180	185	190
Asn Val Glu Ile Pro Ile Gly Val Thr Phe Glu Arg Asp Ser Lys Ser		
195	200	205
Glu Lys Gly Thr Tyr Asp Leu Thr Leu Met Tyr Ile Leu Asp Ala Tyr		
210	215	220
Arg Arg Asn Pro Lys Cys Gln Thr Ser Leu Ile Ala Ser Asp Ala Asn		
225	230	235
Trp Met Ala Tyr Gly Thr Asn Leu Ala Arg Gln Gly Phe Ser Val Arg		
245	250	255
Ala Ala Asn His Phe Gln Val Asn Pro His Met Glu Ile Phe Gly Gln		
260	265	270
Phe Ala Phe Glu Val Arg Ser Ser Ser Arg Asn Tyr Asn Thr Asn Leu		
275	280	285
Gly Ser Lys Phe Cys Phe		
290		
<210>470		
<211>930		
<212>PRT		
<213>Chlamydia pneumoniae		
<400>470		
Met Lys Ile Pro Leu His Lys Leu Leu Ile Ser Ser Thr Leu Val Thr		
1	5	10
Pro Ile Leu Leu Ser Ile Ala Thr Tyr Gly Ala Asp Ala Ser Leu Ser		
20	25	30
Pro Thr Asp Ser Phe Asp Gly Ala Gly Gly Ser Thr Phe Thr Pro Lys		
35	40	45
Ser Thr Ala Asp Ala Asn Gly Thr Asn Tyr Val Leu Ser Gly Asn Val		
50	55	60
Tyr Ile Asn Asp Ala Gly Lys Gly Thr Ala Leu Thr Gly Cys Cys Phe		
65	70	75
Thr Glu Thr Thr Gly Asp Leu Thr Phe Thr Gly Lys Gly Tyr Ser Phe		
85	90	95
Ser Phe Asn Thr Val Asp Ala Gly Ser Asn Ala Gly Ala Ala Ser		
100	105	110
Thr Thr Ala Asp Lys Ala Leu Thr Phe Thr Gly Phe Ser Asn Leu Ser		
115	120	125
Phe Ile Ala Ala Pro Gly Thr Thr Val Ala Ser Gly Lys Ser Thr Leu		
130	135	140
Ser Ser Ala Gly Ala Leu Asn Leu Thr Asp Asn Gly Thr Ile Leu Phe		
145	150	155
Ser Gln Asn Val Ser Asn Glu Ala Asn Asn Asn Gly Gly Ala Ile Thr		
165	170	175
Ala Lys Thr Leu Ser Ile Ser Gly Asn Thr Ser Ser Ile Thr Phe Thr		
180	185	190
Ser Asn Ser Ala Lys Lys Leu Gly Gly Ala Ile Tyr Ser Ser Ala Ala		
195	200	205
Ala Ser Ile Ser Gly Asn Thr Gly Gln Leu Val Phe Met Asn Asn Lys		
210	215	220
Gly Glu Thr Gly Gly Gly Ala Leu Gly Phe Glu Ala Ser Ser Ser Ile		
225	230	235
Thr Gln Asn Ser Ser Leu Phe Phe Ser Gly Asn Thr Ala Thr Asp Ala		
245	250	255
Ala Gly Lys Gly Gly Ala Ile Tyr Cys Glu Lys Thr Gly Glu Thr Pro		
260	265	270
Thr Leu Thr Ile Ser Gly Asn Lys Ser Leu Thr Phe Ala Glu Asn Ser		
275	280	285
Ser Val Thr Gln Gly Gly Ala Ile Cys Ala His Gly Leu Asp Leu Ser		
290	295	300
Ala Ala Gly Pro Thr Leu Phe Ser Asn Asn Arg Cys Gly Asn Thr Ala		
305	310	315
Ala Gly Lys Gly Gly Ala Ile Ala Ile Ala Asp Ser Gly Ser Leu Ser		
325	330	335
Leu Ser Ala Asn Gln Gly Asp Ile Thr Phe Leu Gly Asn Thr Leu Thr		
340	345	350

WO 99/27105

Ser Thr Ser Ala Pro Thr Ser Thr Arg Asn Ala Ile Tyr Leu Gly Ser
 355 360 365
 Ser Ala Lys Ile Thr Asn Leu Arg Ala Ala Gln Gly Gln Ser Ile Tyr
 370 375 380
 Phe Tyr Asp Pro Ile Ala Ser Asn Thr Thr Gly Ala Ser Asp Val Leu
 385 390 395 400
 Thr Ile Asn Gln Pro Asp Ser Asn Ser Pro Leu Asp Tyr Ser Gly Thr
 405 410 415
 Ile Val Phe Ser Gly Glu Lys Leu Ser Ala Asp Glu Ala Lys Ala Ala
 420 425 430
 Asp Asn Phe Thr Ser Ile Leu Lys Gln Pro Leu Ala Leu Ala Ser Gly
 435 440 445
 Thr Leu Ala Leu Lys Gly Asn Val Glu Leu Asp Val Asn Gly Phe Thr
 450 455 460
 Gln Thr Glu Gly Ser Thr Leu Leu Met Gln Pro Gly Thr Lys Leu Lys
 465 470 475 480
 Ala Asp Thr Glu Ala Ile Ser Leu Thr Lys Leu Val Val Asp Leu Ser
 485 490 495
 Ala Leu Glu Gly Asn Lys Ser Val Ser Ile Glu Thr Ala Gly Ala Asn
 500 505 510
 Lys Thr Ile Thr Leu Thr Ser Pro Leu Val Phe Gln Asp Ser Ser Gly
 515 520 525
 Asn Phe Tyr Glu Ser His Thr Ile Asn Gln Ala Phe Thr Gln Pro Leu
 530 535 540
 Val Val Phe Thr Ala Ala Thr Ala Ala Ser Asp Ile Tyr Ile Asp Ala
 545 550 555 560
 Leu Leu Thr Ser Pro Val Gln Thr Pro Glu Pro His Tyr Gly Tyr Gln
 565 570 575
 Gly His Trp Glu Ala Thr Trp Ala Asp Thr Ser Thr Ala Lys Ser Gly
 580 585 590
 Thr Met Thr Trp Val Thr Thr Gly Tyr Asn Pro Asn Pro Glu Arg Arg
 595 600 605
 Ala Ser Val Val Pro Asp Ser Leu Trp Ala Ser Phe Thr Asp Ile Arg
 610 615 620
 Thr Leu Gln Gln Ile Met Thr Ser Gln Ala Asn Ser Ile Tyr Gln Gln
 625 630 635 640
 Arg Gly Leu Trp Ala Ser Gly Thr Ala Asn Phe Phe His Lys Asp Lys
 645 650 655
 Ser Gly Thr Asn Gln Ala Phe Arg His Lys Ser Tyr Gly Tyr Ile Val
 660 665 670
 Gly Gly Ser Ala Glu Asp Phe Ser Glu Asn Ile Phe Ser Val Ala Phe
 675 680 685
 Cys Gln Leu Phe Gly Lys Asp Lys Asp Leu Phe Ile Val Glu Asn Thr
 690 695 700
 Ser His Asn Tyr Leu Ala Ser Leu Tyr Leu Gln His Arg Ala Phe Leu
 705 710 715 720
 Gly Gly Leu Pro Met Pro Ser Phe Gly Ser Ile Thr Asp Met Leu Lys
 725 730 735
 Asp Ile Pro Leu Ile Leu Asn Ala Gln Leu Ser Tyr Ser Tyr Thr Lys
 740 745 750
 Asn Asp Met Asp Thr Arg Tyr Thr Ser Tyr Pro Glu Ala Gln Gly Ser
 755 760 765
 Trp Thr Asn Asn Ser Gly Ala Leu Glu Leu Gly Gly Ser Leu Ala Leu
 770 775 780
 Tyr Leu Pro Lys Glu Ala Pro Phe Phe Gln Gly Tyr Phe Pro Phe Leu
 785 790 795 800
 Lys Phe Gln Ala Val Tyr Ser Arg Gln Gln Asn Phe Lys Glu Ser Gly
 805 810 815
 Ala Glu Ala Arg Ala Phe Asp Asp Gly Asp Leu Val Asn Cys Ser Ile
 820 825 830
 Pro Val Gly Ile Arg Leu Glu Lys Ile Ser Glu Asp Glu Lys Asn Asn
 835 840 845
 Phe Glu Ile Ser Leu Ala Tyr Ile Gly Asp Val Tyr Arg Lys Asn Pro
 850 855 860

Arg Ser Arg Thr Ser Leu Met Val Ser Gly Ala Ser Trp Thr Ser Leu
 865 870 875 880
 Cys Lys Asn Leu Ala Arg Gln Ala Phe Leu Ala Ser Ala Gly Ser His
 885 890 895
 Leu Thr Leu Ser Pro His Val Glu Leu Ser Gly Glu Ala Tyr Glu
 900 905 910
 Leu Arg Gly Ser Ala His Ile Tyr Asn Val Asp Cys Gly Leu Arg Tyr
 915 920 925
 Ser Phe
 930

<210>471

<211>138

<212>PRT

<213>Chlamydia pneumoniae

<400>471

Ile Ala Pro Pro Asn Phe Phe Ala Leu Leu Leu Val Lys Val Ile Glu
 1 5 10 15
 Glu Val Phe Pro Glu Ile Glu Arg Val Phe Ala Val Ile Ala Pro Pro
 20 25 30
 Leu Leu Leu Ala Ser Leu Glu Thr Phe Trp Leu Lys Arg Ile Val Pro
 35 40 45
 Leu Ser Val Arg Phe Lys Ala Pro Ala Glu Leu Lys Val Leu Phe Pro
 50 55 60
 Glu Ala Thr Val Val Pro Gly Ala Ala Met Lys Glu Arg Leu Glu Asn
 65 70 75 80
 Pro Val Asn Val Arg Ala Leu Ser Ala Val Val Leu Ala Ala Ala Pro
 85 90 95
 Ala Phe Glu Pro Ala Ser Thr Val Leu Asn Glu Asn Glu Tyr Pro Phe
 100 105 110
 Pro Val Asn Val Arg Ser Pro Val Val Ser Val Lys Gln Gln Pro Val
 115 120 125
 Asn Ala Val Pro Phe Pro Ala Ser Phe Ile
 130 135

<210>472

<211>927

<212>PRT

<213>Chlamydia pneumoniae

<400>472

Met Lys Ser Ser Leu His Trp Phe Leu Ile Ser Ser Ser Leu Ala Leu
 1 5 10 15
 Pro Leu Ser Leu Asn Phe Ser Ala Phe Ala Ala Val Val Glu Ile Asn
 20 25 30
 Leu Gly Pro Thr Asn Ser Phe Ser Gly Pro Gly Thr Tyr Thr Pro Pro
 35 40 45
 Ala Gln Thr Thr Asn Ala Asp Gly Thr Ile Tyr Asn Leu Thr Gly Asp
 50 55 60
 Val Ser Ile Thr Asn Ala Gly Ser Pro Thr Ala Leu Thr Ala Ser Cys
 65 70 75 80
 Phe Lys Glu Thr Thr Gly Asn Leu Ser Phe Gln Gly His Gly Tyr Gln
 85 90 95
 Phe Leu Leu Gln Asn Ile Asp Ala Gly Ala Asn Cys Thr Phe Thr Asn
 100 105 110
 Thr Ala Ala Asn Lys Leu Leu Ser Phe Ser Gly Phe Ser Tyr Leu Ser
 115 120 125
 Leu Ile Gln Thr Thr Asn Ala Thr Thr Gly Thr Gly Ala Ile Lys Ser
 130 135 140
 Thr Gly Ala Cys Ser Ile Gln Ser Asn Tyr Ser Cys Tyr Phe Gly Gln
 145 150 155 160
 Asn Phe Ser Asn Asp Asn Gly Gly Ala Leu Gln Gly Ser Ser Ile Ser
 165 170 175
 Leu Ser Leu Asn Pro Asn Leu Thr Phe Ala Lys Asn Lys Ala Thr Gln
 180 185 190
 Lys Gly Gly Ala Leu Tyr Ser Thr Gly Gly Ile Thr Ile Asn Asn Thr
 195 200 205

WO 99/27105

Leu Asn Ser Ala Ser Phe Ser Glu Asn Thr Ala Ala Asn A Gly Gly
 210 215 220
 Ala Ile Tyr Thr Glu Ala Ser Ser Phe Ile Ser Ser Asn Lys Ala Ile
 225 230 235 240
 Ser Phe Ile Asn Asn Ser Val Thr Ala Thr Ser Ala Thr Gly Gly Ala
 245 250 255
 Ile Tyr Cys Ser Ser Thr Ser Ala Pro Lys Pro Val Leu Thr Leu Ser
 260 265 270
 Asp Asn Gly Glu Leu Asn Phe Ile Gly Asn Thr Ala Ile Thr Ser Gly
 275 280 285
 Gly Ala Ile Tyr Thr Asp Asn Leu Val Leu Ser Ser Gly Gly Pro Thr
 290 295 300
 Leu Phe Lys Asn Asn Ser Ala Ile Asp Thr Ala Ala Pro Leu Gly Gly
 305 310 315 320
 Ala Ile Ala Ile Ala Asp Ser Gly Ser Leu Ser Leu Ser Ala Leu Gly
 325 330 335
 Gly Asp Ile Thr Phe Glu Gly Asn Thr Val Val Lys Gly Ala Ser Ser
 340 345 350
 Ser Gln Thr Thr Thr Arg Asn Ser Ile Asn Ile Gly Asn Thr Asn Ala
 355 360 365
 Lys Ile Val Gln Leu Arg Ala Ser Gln Gly Asn Thr Ile Tyr Phe Tyr
 370 375 380
 Asp Pro Ile Thr Thr Ser Ile Thr Ala Ala Leu Ser Asp Ala Leu Asn
 385 390 395 400
 Leu Asn Gly Pro Asp Leu Ala Gly Asn Pro Ala Tyr Gln Gly Thr Ile
 405 410 415
 Val Phe Ser Gly Glu Lys Leu Ser Glu Ala Glu Ala Ala Glu Ala Asp
 420 425 430
 Asn Leu Lys Ser Thr Ile Gln Gln Pro Leu Thr Leu Ala Gly Gly Gln
 435 440 445
 Leu Ser Leu Lys Ser Gly Val Thr Leu Val Ala Lys Ser Phe Ser Gln
 450 455 460
 Ser Pro Gly Ser Thr Leu Leu Met Asp Ala Gly Thr Thr Leu Glu Thr
 465 470 475 480
 Ala Asp Gly Ser Leu Ser Ile Ile Cys Ser Gln Cys Arg Phe Leu Lys
 485 490 495
 Arg Asp Gln Glu Xaa Thr Leu Lys Ala Thr Gln Ala Ser Gln Thr Val
 500 505 510
 Thr Leu Ser Gly Ser Leu Ser Leu Val Asp Pro Ser Gly Asn Val Tyr
 515 520 525
 Glu Asp Val Ser Trp Asn Asn Pro Gln Val Phe Ser Cys Leu Thr Leu
 530 535 540
 Thr Ala Asp Asp Pro Ala Asn Ile His Ile Thr Asp Leu Ala Ala Asp
 545 550 555 560
 Pro Leu Glu Lys Asn Pro Ile His Trp Gly Tyr Gln Gly Asn Trp Ala
 565 570 575
 Leu Ser Trp Gln Glu Asp Thr Ala Thr Lys Ser Lys Ala Ala Thr Leu
 580 585 590
 Thr Trp Thr Lys Thr Gly Tyr Asn Pro Asn Pro Glu Arg Arg Gly Thr
 595 600 605
 Leu Val Ala Asn Thr Leu Trp Gly Ser Phe Val Asp Val Arg Ser Ile
 610 615 620
 Gln Gln Leu Val Ala Thr Lys Val Arg Gln Ser Gln Glu Thr Arg Gly
 625 630 635 640
 Ile Trp Cys Glu Gly Ile Ser Asn Phe Phe His Lys Asp Ser Thr Lys
 645 650 655
 Ile Asn Lys Gly Phe Arg His Ile Ser Ala Gly Tyr Val Val Gly Ala
 660 665 670
 Thr Thr Thr Leu Ala Ser Asp Asn Leu Ile Thr Ala Ala Phe Cys Gln
 675 680 685
 Leu Phe Gly Lys Asp Arg Asp His Phe Ile Asn Lys Asn Arg Ala Ser
 690 695 700
 Ala Tyr Ala Ala Ser Leu His Leu Gln His Leu Ala Thr Leu Ser Ser
 705 710 715 720

Pro Ser Leu Leu Arg Tyr Leu Pro Gly Ser Glu Ser Glu Gln Pro Val
 725 730 735
 Leu Phe Asp Ala Gln Ile Ser Tyr Ile Tyr Ser Lys Asn Thr Met Lys
 740 745 750
 Thr Tyr Tyr Thr Gln Ala Pro Lys Gly Glu Ser Ser Trp Tyr Asn Asp
 755 760 765
 Gly Cys Ala Leu Glu Leu Ala Ser Ser Leu Pro His Thr Ala Leu Ser
 770 775 780
 His Glu Gly Leu Phe His Ala Tyr Phe Pro Phe Ile Lys Val Glu Ala
 785 790 795 800
 Ser Tyr Ile His Gln Asp Ser Phe Lys Glu Arg Asn Thr Thr Leu Val
 805 810 815
 Arg Ser Phe Asp Ser Gly Asp Leu Ile Asn Val Ser Val Pro Ile Gly
 820 825 830
 Ile Thr Phe Glu Arg Phe Ser Arg Asn Glu Arg Ala Ser Tyr Glu Ala
 835 840 845
 Thr Val Ile Tyr Val Ala Asp Val Tyr Arg Lys Asn Pro Asp Cys Thr
 850 855 860
 Thr Ala Leu Leu Ile Asn Asn Thr Ser Trp Lys Thr Thr Gly Thr Asn
 865 870 875 880
 Leu Ser Arg Gln Ala Gly Ile Gly Arg Ala Gly Ile Phe Tyr Ala Phe
 885 890 895
 Ser Pro Asn Leu Glu Val Thr Ser Asn Leu Ser Met Glu Ile Arg Gly
 900 905 910
 Ser Ser Arg Ser Tyr Asn Ala Asp Leu Gly Gly Lys Phe Gln Phe
 915 920 925

<210>473

<211>393

<212>PRT

<213>Chlamydia pneumoniae

<400>473

Phe Ile Gln Pro Ser Arg Arg Glu Ile His Glu Trp Lys Cys Ile Leu
 1 5 10 15
 Leu Gly Ser Ser Leu Arg Met Glu Met Met Ser Pro Phe Gln Gln Pro
 20 25 30
 Glu Gln Cys His Phe Asp Val Val Gly Ser Phe Leu Arg Pro Glu Ser
 35 40 45
 Leu Thr Arg Ala Arg Ser Asp Phe Glu Glu Gly Arg Ile Val Tyr Glu
 50 55 60
 Gln Met Arg Val Val Glu Asp Ala Ala Ile Arg Asn Leu Ile Lys Lys
 65 70 75 80
 Gln Thr Glu Ala Gly Leu Ile Phe Phe Thr Asp Gly Glu Phe Arg Arg
 85 90 95
 Tyr Ser Trp Asp Phe Asp Phe Met Trp Gly Phe His Gly Val Asp Arg
 100 105 110
 Arg Arg Asp Ser Asn Asp Pro Glu Ile Gly Val Tyr Leu Lys Asp Lys
 115 120 125
 Ile Ser Val Ser Lys His Pro Phe Ile Glu His Phe Glu Phe Val Lys
 130 135 140
 Thr Phe Glu Lys Gly Asn Ala Lys Ala Lys Gln Thr Ile Pro Ser Pro
 145 150 155 160
 Ser Gln Phe Phe His Glu Met Ile Phe Ala Pro Asn Leu Lys Asn Thr
 165 170 175
 Arg Lys Phe Tyr Pro Thr Asn Gln Glu Leu Ile Asp Asp Ile Val Phe
 180 185 190
 Tyr Tyr Arg Gln Val Ile Gln Asp Leu Tyr Ala Ala Gly Cys Arg Asn
 195 200 205
 Leu Gln Leu Asp Asp Cys Ala Trp Cys Arg Leu Leu Asp Ile Arg Ala
 210 215 220
 Pro Ser Trp Tyr Gly Val Asp Ser His Asp Arg Leu Gln Glu Ile Leu
 225 230 235 240
 Glu Gln Phe Leu Trp Ile His Asn Leu Val Met Lys Asp Arg Pro Glu
 245 250 255
 Asp Leu Phe Val Ser Leu His Val Cys Arg Gly Asp Tyr Gln Ala Glu

260 265
 Phe Phe Ser Arg Arg Ala Tyr Asp Ser Ile Glu Glu Pro Leu Phe Ala
 275 280 285
 Lys Thr Asp Val Asp Ser Tyr His Tyr Tyr Trp Ala Leu Asp Asp Lys
 290 295 300
 Tyr Ser Gly Gly Ala Glu Pro Leu Ala Tyr Val Ser Gly Glu Lys His
 305 310 315 320
 Val Cys Leu Gly Leu Ile Ser Ser Asn His Ser Cys Ile Glu Asp Arg
 325 330 335
 Asp Ala Val Val Ser Arg Ile Tyr Glu Ala Ala Ser Tyr Ile Pro Leu
 340 345 350
 Glu Arg Leu Ser Leu Ser Pro Gln Cys Gly Phe Ala Ser Cys Glu Gly
 355 360 365
 Asp His Arg Met Thr Glu Glu Glu Gln Trp Lys Lys Ile Ala Phe Val
 370 375 380
 Lys Glu Ile Ala Lys Glu Ile Trp Gly
 385 390
 <210>474
 <211>643
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>474
 Leu Met Ala Glu Pro Phe Met Leu Arg Ser Leu His Trp Leu Pro Gly
 1 5 10 15
 Gly Gly Gly Gly Ile Ser Phe Ser Asn Asn Ile Val Gln Gly Thr Thr
 20 25 30
 Ala Gly Asn Gly Gly Ala Ile Ser Ile Leu Ala Ala Gly Glu Cys Ser
 35 40 45
 Leu Ser Ala Glu Ala Gly Asp Ile Thr Phe Asn Gly Asn Ala Ile Val
 50 55 60
 Ala Thr Thr Pro Gln Thr Thr Lys Arg Asn Ser Ile Asp Ile Gly Ser
 65 70 75 80
 Thr Ala Lys Ile Thr Asn Leu Arg Ala Ile Ser Gly His Ser Ile Phe
 85 90 95
 Phe Tyr Asp Pro Ile Thr Ala Asn Thr Ala Ala Asp Ser Thr Asp Thr
 100 105 110
 Leu Asn Leu Asn Lys Ala Asp Ala Gly Asn Ser Thr Asp Tyr Ser Gly
 115 120 125
 Ser Ile Val Phe Ser Gly Glu Lys Leu Ser Glu Asp Glu Ala Lys Val
 130 135 140
 Ala Asp Asn Leu Thr Ser Thr Leu Lys Gln Pro Val Thr Leu Thr Ala
 145 150 155 160
 Gly Asn Leu Val Leu Lys Arg Gly Val Thr Leu Asp Thr Lys Gly Phe
 165 170 175
 Thr Gln Thr Ala Gly Ser Ser Val Ile Met Asp Ala Gly Thr Thr Leu
 180 185 190
 Lys Ala Ser Thr Glu Glu Val Thr Leu Thr Gly Leu Ser Ile Pro Val
 195 200 205
 Asp Ser Leu Gly Glu Gly Lys Lys Val Val Ile Ala Ala Ser Ala Ala
 210 215 220
 Ser Lys Asn Val Ala Leu Ser Gly Pro Ile Leu Leu Leu Asp Asn Gln
 225 230 235 240
 Gly Asn Ala Tyr Glu Asn His Asp Leu Gly Lys Thr Gln Asp Phe Ser
 245 250 255
 Phe Val Gln Leu Ser Ala Leu Gly Thr Ala Thr Thr Thr Asp Val Pro
 260 265 270
 Ala Val Pro Thr Val Ala Thr Pro Thr His Tyr Gly Tyr Gln Gly Thr
 275 280 285
 Trp Gly Met Thr Trp Val Asp Asp Thr Ala Ser Thr Pro Lys Thr Lys
 290 295 300
 Thr Ala Thr Leu Ala Trp Thr Asn Thr Gly Tyr Leu Pro Asn Pro Glu
 305 310 315 320
 Arg Gln Gly Pro Leu Val Pro Asn Ser Leu Trp Gly Ser Phe Ser Asp
 325 330 335

Ile Gln Ala Ile Gln Gly Val Ile Glu Arg Ser Ala Leu Thr Leu Cys
 340 345 350
 Ser Asp Arg Gly Phe Trp Ala Ala Gly Val Ala Asn Phe Leu Asp Lys
 355 360 365
 Asp Lys Lys Gly Glu Lys Arg Lys Tyr Arg His Lys Ser Gly Gly Tyr
 370 375 380
 Ala Ile Gly Gly Ala Ala Gln Thr Cys Ser Glu Asn Leu Ile Ser Phe
 385 390 395 400
 Ala Phe Cys Gln Leu Phe Gly Ser Asp Lys Asp Phe Leu Val Ala Lys
 405 410 415
 Asn His Thr Asp Thr Tyr Ala Gly Ala Phe Tyr Ile Gln His Ile Thr
 420 425 430
 Glu Cys Ser Gly Phe Ile Gly Cys Leu Leu Asp Lys Leu Pro Gly Ser
 435 440 445
 Trp Ser His Lys Pro Leu Val Leu Glu Gly Gln Leu Ala Tyr Ser His
 450 455 460
 Val Ser Asn Asp Leu Lys Thr Lys Tyr Thr Ala Tyr Pro Glu Val Lys
 465 470 475 480
 Gly Ser Trp Gly Asn Asn Ala Phe Asn Met Met Leu Gly Ala Ser Ser
 485 490 495
 His Ser Tyr Pro Glu Tyr Leu His Cys Phe Asp Thr Tyr Ala Pro Tyr
 500 505 510
 Ile Lys Leu Asn Leu Thr Tyr Ile Arg Gln Asp Ser Phe Ser Glu Lys
 515 520 525
 Gly Thr Glu Gly Arg Ser Phe Asp Asp Ser Asn Leu Phe Asn Leu Ser
 530 535 540
 Leu Pro Ile Gly Val Lys Phe Glu Lys Phe Ser Asp Cys Asn Asp Phe
 545 550 555 560
 Ser Tyr Asp Leu Thr Leu Ser Tyr Val Pro Asp Leu Ile Arg Asn Asp
 565 570 575
 Pro Lys Cys Thr Thr Ala Leu Val Ile Ser Gly Ala Ser Trp Glu Thr
 580 585 590
 Tyr Ala Asn Asn Leu Ala Arg Gln Ala Leu Gln Val Arg Ala Gly Ser
 595 600 605
 His Tyr Ala Phe Ser Pro Met Phe Glu Val Leu Gly Gln Phe Val Phe
 610 615 620
 Glu Val Arg Gly Ser Ser Arg Ile Tyr Asn Val Asp Leu Gly Gly Lys
 625 630 635 640
 Phe Gln Phe

<210>475

<211>102

<212>PRT

<213>Chlamydia pneumoniae

<400>475

Lys Lys Met Leu Cys Pro Asp Ile Ala Arg Lys Phe Val Ile Phe Ala
 1 5 10 15
 Val Asp Pro Met Ser Ile Glu Phe Leu Phe Val Val Cys Gly Val Val
 20 25 30
 Ala Thr Met Ala Phe Pro Leu Lys Val Met Ser Pro Ala Ser Ala Glu
 35 40 45
 Arg Leu His Ser Pro Ala Ala Ser Ile Glu Met Ala Pro Pro Leu Pro
 50 55 60
 Ala Val Val Pro Trp Thr Ile Leu Leu Glu Lys Glu Ile Pro Pro Pro
 65 70 75 80
 Pro Pro Gly Ser Gln Cys Lys Leu Leu Ser Ile Asn Gly Ser Ala Ile
 85 90 95
 Ser Tyr Ser Leu Val Ser
 100

<210>476

<211>174

<212>PRT

<213>Chlamydia pneumoniae

<400>476

Ser Gln Pro Pro Gln Glu Lys Val Gln Leu Asn Val Glu Ile Leu
 1 5 10 15
 His Leu Ile Thr Met Glu Leu Phe Tyr Leu Asn Lys Ile Thr Val Arg
 20 25 30
 Lys Met Ala Asp Ile Ser Thr Lys Asn Leu Ser Leu Lys Asn Ser Thr
 35 40 45
 Gly Ser Ile Ser Phe Glu Gly Asn Lys Ser Ser Ala Thr Gly Lys Lys
 50 55 60
 Gly Gly Ala Ile Cys Ala Thr Gly Thr Val Asp Ile Thr Asn Asn Thr
 65 70 75 80
 Ala Pro Thr Leu Phe Ser Asn Asn Ile Ala Glu Ala Ala Gly Gly Ala
 85 90 95
 Ile Asn Ser Thr Gly Asn Cys Thr Ile Thr Gly Asn Thr Ser Leu Val
 100 105 110
 Phe Ser Glu Asn Ser Val Thr Ala Thr Ala Gly Asn Gly Gly Ala Leu
 115 120 125
 Ser Gly Asp Ala Asp Val Thr Ile Ser Gly Asn Gln Ser Val Thr Phe
 130 135 140
 Ser Gly Asn Gln Ala Val Ala Asn Gly Gly Ala Ile Tyr Ala Lys Lys
 145 150 155 160
 Leu Thr Leu Ala Ser Gly Gly Gly Gly Tyr Leu Leu Phe
 165 170

<210>477

<211>118

<212>PRT

<213>Chlamydia pneumoniae

<400>477

Met Lys Ser Gln Phe Ser Trp Leu Val Leu Ser Ser Thr Leu Ala Cys
 1 5 10 15
 Phe Thr Ser Cys Ser Thr Val Phe Ala Ala Thr Ala Glu Asn Ile Gly
 20 25 30
 Pro Ser Asp Ser Phe Asp Gly Ser Thr Asn Thr Gly Thr Tyr Thr Pro
 35 40 45
 Lys Asn Thr Thr Thr Gly Ile Asp Tyr Thr Leu Thr Gly Asp Ile Thr
 50 55 60
 Leu Gln Asn Leu Gly Asp Ser Ala Ala Leu Thr Lys Gly Cys Phe Ser
 65 70 75 80
 Asp Thr Thr Glu Ser Leu Ser Phe Ala Gly Lys Gly Tyr Ser Leu Ser
 85 90 95
 Phe Leu Asn Xaa Lys Ser Ser Ala Glu Gly Ala Xaa Phe Leu Leu Gln
 100 105 110
 Leu Ile Lys Ile Cys Arg
 115

<210>478

<211>949

<212>PRT

<213>Chlamydia pneumoniae

<400>478

Leu Ile Tyr Leu Phe Cys Phe Tyr Ile Asp Ala Asn Ser Ser Leu Lys
 1 5 10 15
 Asn Lys Ser Ile Thr Met Lys Thr Ser Ile Pro Trp Val Leu Val Ser
 20 25 30
 Ser Val Leu Ala Phe Ser Cys His Leu Gln Ser Leu Ala Asn Glu Glu
 35 40 45
 Leu Leu Ser Pro Asp Asp Ser Phe Asn Gly Asn Ile Asp Ser Gly Thr
 50 55 60
 Phe Thr Pro Lys Thr Ser Ala Thr Thr Tyr Ser Leu Thr Gly Asp Val
 65 70 75 80
 Phe Phe Tyr Glu Pro Gly Lys Gly Thr Pro Leu Ser Asp Ser Cys Phe
 85 90 95
 Lys Gln Thr Thr Asp Asn Leu Thr Phe Leu Gly Asn Gly His Ser Leu
 100 105 110
 Thr Phe Gly Phe Ile Asp Ala Gly Thr His Ala Gly Ala Ala Ser
 115 120 125

Thr	Thr	Ala	Asn	Lys	Asn	Leu	Thr	Phe	Ser	Gly	Phe	Ser	Leu	Leu	Ser
130						135					140				
Phe	Asp	Ser	Ser	Pro	Ser	Thr	Thr	Val	Thr	Thr	Gly	Gln	Gly	Thr	Leu
145						150					155				160
Ser	Ser	Ala	Gly	Gly	Val	Asn	Leu	Glu	Asn	Ile	Arg	Lys	Leu	Val	Val
					165					170					175
Ala	Gly	Asn	Phe	Ser	Thr	Ala	Asp	Gly	Gly	Ala	Ile	Lys	Gly	Ala	Ser
					180					185					190
Phe	Leu	Leu	Thr	Gly	Thr	Ser	Gly	Asp	Ala	Leu	Phe	Ser	Asn	Asn	Ser
					195					200					205
Ser	Ser	Thr	Lys	Gly	Gly	Ala	Ile	Ala	Thr	Thr	Ala	Gly	Ala	Arg	Ile
					210						220				
Ala	Asn	Asn	Thr	Gly	Xaa	Val	Arg	Phe	Leu	Ser	Asn	Ile	Ala	Ser	Thr
225					230						235				240
Ser	Gly	Gly	Ala	Ile	Asp	Asp	Glu	Gly	Thr	Ser	Ile	Leu	Ser	Asn	Asn
					245						250				255
Lys	Phe	Leu	Tyr	Phe	Glu	Gly	Asn	Ala	Lys	Thr	Thr	Gly	Gly	Ala	
					260						265				270
Ile	Cys	Asn	Thr	Lys	Ala	Ser	Gly	Ser	Pro	Glu	Leu	Ile	Ile	Ser	Asn
					275						280				285
Asn	Lys	Thr	Leu	Ile	Phe	Ala	Ser	Asn	Val	Ala	Glu	Thr	Ser	Gly	Gly
					290						300				
Ala	Ile	His	Ala	Lys	Lys	Leu	Ala	Leu	Ser	Ser	Gly	Gly	Phe	Thr	Glu
305					310						315				320
Phe	Leu	Arg	Asn	Asn	Val	Ser	Ser	Ala	Thr	Pro	Lys	Gly	Gly	Ala	Ile
					325						330				335
Ser	Ile	Asp	Ala	Ser	Gly	Glu	Leu	Ser	Leu	Ser	Ala	Glu	Thr	Gly	Asn
					340						345				350
Ile	Thr	Phe	Val	Arg	Asn	Thr	Leu	Thr	Thr	Thr	Gly	Ser	Thr	Asp	Thr
					355						360				365
Pro	Lys	Arg	Asn	Ala	Ile	Asn	Ile	Gly	Ser	Asn	Gly	Lys	Phe	Thr	Glu
					370						375				380
Leu	Arg	Ala	Ala	Lys	Asn	His	Thr	Ile	Phe	Phe	Tyr	Asp	Pro	Ile	Thr
385					390						395				400
Ser	Glu	Gly	Thr	Ser	Ser	Asp	Val	Leu	Lys	Ile	Asn	Asn	Gly	Ser	Ala
					405						410				415
Gly	Ala	Leu	Asn	Pro	Tyr	Gln	Gly	Thr	Ile	Leu	Phe	Ser	Gly	Glu	Thr
					420						425				430
Leu	Thr	Ala	Asp	Glu	Leu	Lys	Val	Ala	Asp	Asn	Leu	Lys	Ser	Ser	Phe
					435						440				445
Thr	Gln	Pro	Val	Ser	Leu	Ser	Gly	Gly	Lys	Leu	Leu	Leu	Gln	Lys	Gly
					450						455				460
Val	Thr	Leu	Glu	Ser	Thr	Ser	Phe	Ser	Gln	Glu	Ala	Gly	Ser	Leu	Leu
465					470						475				480
Gly	Met	Asp	Ser	Gly	Thr	Thr	Leu	Ser	Thr	Thr	Ala	Gly	Ser	Ile	Thr
					485						490				495
Ile	Thr	Asn	Leu	Gly	Ile	Asn	Val	Asp	Ser	Leu	Gly	Leu	Lys	Gln	Pro
					500						505				510
Val	Ser	Leu	Thr	Ala	Lys	Gly	Ala	Ser	Asn	Lys	Val	Ile	Val	Ser	Gly
					515						520				525
Lys	Leu	Asn	Leu	Ile	Asp	Ile	Glu	Gly	Asn	Ile	Tyr	Glu	Ser	His	Met
					530						535				540
Phe	Ser	His	Asp	Gln	Leu	Phe	Ser	Leu	Leu	Lys	Ile	Thr	Val	Asp	Ala
545					550						555				560
Asp	Val	Asp	Thr	Asn	Val	Asp	Ile	Ser	Ser	Leu	Ile	Pro	Val	Pro	Ala
					565						570				575
Glu	Asp	Pro	Asn	Ser	Glu	Tyr	Gly	Phe	Gln	Gly	Gln	Trp	Asn	Val	Asn
					580						585				590
Trp	Thr	Thr	Asp	Thr	Ala	Thr	Asn	Thr	Lys	Glu	Ala	Thr	Ala	Thr	Trp
					595						600				605
Thr	Lys	Thr	Gly	Phe	Val	Pro	Ser	Pro	Glu	Arg	Lys	Ser	Ala	Leu	Val
					610						615				620
Cys	Asn	Thr	Leu	Trp	Gly	Val	Phe	Thr	Asp	Ile	Arg	Ser	Leu	Gln	Gln
625					630						635				640

Leu Val Glu Ile Gly Ala Thr Gly Met Glu His Lys Gln G Phe Trp
 645 650 655
 Val Ser Ser Met Thr Asn Phe Leu His Lys Thr Gly Asp Glu Asn Arg
 660 665 670
 Lys Gly Phe Arg His Thr Ser Gly Gly Tyr Val Ile Gly Gly Ser Ala
 675 680 685
 His Thr Pro Lys Asp Asp Leu Phe Thr Phe Ala Phe Cys His Leu Phe
 690 695 700
 Ala Arg Asp Lys Asp Cys Phe Ile Ala His Asn Asn Ser Arg Thr Tyr
 705 710 715 720
 Gly Gly Thr Leu Phe Phe Lys His Ser His Thr Leu Gln Pro Gln Asn
 725 730 735
 Tyr Leu Arg Leu Gly Arg Ala Lys Phe Ser Glu Ser Ala Ile Glu Lys
 740 745 750
 Phe Pro Arg Glu Ile Pro Leu Ala Leu Asp Val Gln Val Ser Phe Ser
 755 760 765
 His Ser Asp Asn Arg Met Glu Thr His Tyr Thr Ser Leu Pro Glu Ser
 770 775 780
 Glu Gly Ser Trp Ser Asn Glu Cys Ile Ala Gly Gly Ile Gly Leu Asp
 785 790 795 800
 Leu Pro Phe Val Leu Ser Asn Pro His Pro Leu Phe Lys Thr Phe Ile
 805 810 815
 Pro Gln Met Lys Val Glu Met Val Tyr Val Ser Gln Asn Ser Phe Phe
 820 825 830
 Glu Ser Ser Ser Asp Gly Arg Gly Phe Ser Ile Gly Arg Leu Leu Asn
 835 840 845
 Leu Ser Ile Pro Val Gly Ala Lys Phe Val Gln Gly Asp Ile Gly Asp
 850 855 860
 Ser Tyr Thr Tyr Asp Leu Ser Gly Phe Phe Val Ser Asp Val Tyr Arg
 865 870 875 880
 Asn Asn Pro Gln Ser Thr Ala Thr Leu Val Met Ser Pro Asp Ser Trp
 885 890 895
 Lys Ile Arg Gly Gly Asn Leu Ser Arg Gln Ala Phe Leu Leu Arg Gly
 900 905 910
 Ser Asn Asn Tyr Val Tyr Asn Ser Asn Cys Glu Leu Phe Gly His Tyr
 915 920 925
 Ala Met Glu Leu Arg Gly Ser Ser Arg Asn Tyr Asn Val Asp Val Gly
 930 935 940
 Thr Lys Leu Arg Phe
 945

<210>479

<211>519

<212>PRT

<213>Chlamydia pneumoniae

<400>479

Phe Asn Glu Glu Thr Met Thr Ile Leu Arg Asn Phe Leu Thr Cys Ser
 1 5 10 15
 Ala Leu Phe Leu Ala Leu Pro Ala Ala Ala Gln Val Val Tyr Leu His
 20 25 30
 Glu Ser Asp Gly Tyr Asn Gly Ala Ile Asn Asn Lys Ser Leu Glu Pro
 35 40 45
 Lys Ile Thr Cys Tyr Pro Glu Gly Thr Ser Tyr Ile Phe Leu Asp Asp
 50 55 60
 Val Arg Ile Ser Asn Val Lys His Asp Gln Glu Asp Ala Gly Val Phe
 65 70 75 80
 Ile Asn Arg Ser Gly Asn Leu Phe Phe Met Gly Asn Arg Cys Asn Phe
 85 90 95
 Thr Phe His Asn Leu Met Thr Glu Gly Phe Gly Ala Ala Ile Ser Asn
 100 105 110
 Arg Val Gly Asp Thr Thr Leu Thr Leu Ser Asn Phe Ser Tyr Leu Ala
 115 120 125
 Phe Thr Ser Ala Pro Leu Leu Pro Gln Gly Gln Gly Ala Ile Tyr Ser
 130 135 140
 Leu Gly Ser Val Met Ile Glu Asn Ser Glu Glu Val Thr Phe Cys Gly

145	Asn	Tyr	Ser	Ser	Trp	Ser	Gly	Ala	Ala	Ile	Tyr	Thr	Pro	Tyr	Leu	Leu	160
					165					170							175
Gly	Ser	Lys	Ala	Ser	Arg	Pro	Ser	Val	Asn	Leu	Ser	Gly	Asn	Arg	Tyr		
			180					185					190				
Leu	Val	Phe	Arg	Asp	Asn	Val	Ser	Gln	Gly	Tyr	Gly	Gly	Ala	Ile	Ser		
		195					200					205					
Thr	His	Asn	Leu	Thr	Leu	Thr	Thr	Arg	Gly	Pro	Ser	Cys	Phe	Glu	Asn		
		210					215					220					
Asn	His	Ala	Tyr	His	Asp	Val	Asn	Ser	Asn	Gly	Gly	Ala	Ile	Ala	Ile		
225					230					235					240		
Ala	Pro	Gly	Gly	Ser	Ile	Ser	Ile	Ser	Val	Lys	Ser	Gly	Asp	Leu	Ile		
			245						250					255			
Phe	Lys	Gly	Asn	Thr	Ala	Ser	Gln	Asp	Gly	Asn	Thr	Ile	His	Asn	Ser		
			260						265					270			
Ile	His	Leu	Gln	Ser	Gly	Ala	Gln	Phe	Lys	Asn	Leu	Arg	Ala	Val	Ser		
			275					280					285				
Glu	Ser	Gly	Val	Tyr	Phe	Tyr	Asp	Pro	Ile	Ser	His	Ser	Glu	Ser	His		
		290					295				300						
Lys	Ile	Thr	Asp	Leu	Val	Ile	Asn	Ala	Pro	Glu	Gly	Lys	Glu	Thr	Tyr		
305					310					315					320		
Glu	Gly	Thr	Ile	Ser	Phe	Ser	Gly	Leu	Cys	Leu	Asp	Asp	His	Glu	Val		
			325						330					335			
Cys	Ala	Glu	Asn	Leu	Thr	Ser	Thr	Ile	Leu	Gln	Asp	Val	Thr	Leu	Ala		
			340					345					350				
Gly	Gly	Thr	Leu	Ser	Leu	Ser	Asp	Gly	Val	Thr	Leu	Gln	Leu	His	Ser		
		355					360					365					
Phe	Lys	Gln	Glu	Ala	Ser	Ser	Thr	Leu	Thr	Met	Ser	Pro	Gly	Thr	Thr		
		370					375				380						
Leu	Leu	Cys	Ser	Gly	Asp	Ala	Arg	Val	Gln	Asn	Leu	His	Ile	Leu	Ile		
385					390					395					400		
Glu	Asp	Thr	Asp	Asn	Phe	Val	Pro	Val	Arg	Ile	Arg	Ala	Glu	Asp	Lys		
			405						410					415			
Asp	Ala	Leu	Val	Ser	Leu	Glu	Lys	Leu	Lys	Val	Ala	Phe	Glu	Ala	Tyr		
			420					425					430				
Trp	Ser	Val	Tyr	Asp	Phe	Pro	Gln	Phe	Lys	Glu	Ala	Phe	Thr	Ile	Pro		
		435					440					445					
Leu	Leu	Glu	Leu	Leu	Gly	Pro	Ser	Phe	Asp	Ser	Leu	Leu	Leu	Gly	Glu		
		450				455					460						
Thr	Thr	Leu	Glu	Arg	Thr	Gln	Val	Thr	Thr	Glu	Asn	Asp	Ala	Val	Arg		
465					470					475					480		
Gly	Phe	Trp	Ser	Leu	Ser	Trp	Glu	Glu	Tyr	Pro	Pro	Ser	Leu	Asp	Lys		
			485						490					495			
Asp	Arg	Arg	Ile	Thr	Pro	Thr	Lys	Lys	Thr	Val	Phe	Leu	Thr	Trp	Asn		
			500					505					510				
Pro	Glu	Ile	Thr	Ser	Thr	Pro											
			515														

<210>480

<211>522

<212>PRT

<213>Chlamydia pneumoniae

<400>480

Asn	Cys	Val	Leu	Leu	Tyr	Leu	Phe	Phe	Tyr	Ser	Leu	Ser	Leu	Ile	Cys		
1				5					10					15			
Arg	Ile	Ile	Trp	Phe	His	Leu	Tyr	Val	Gln	Met	Lys	Thr	Ser	Ile	Arg		
			20					25					30				
Lys	Phe	Leu	Ile	Ser	Thr	Thr	Leu	Ala	Pro	Cys	Phe	Ala	Ser	Thr	Ala		
		35					40					45					
Phe	Thr	Val	Glu	Val	Ile	Met	Pro	Ser	Glu	Asn	Phe	Asp	Gly	Ser	Ser		
		50				55					60						
Gly	Lys	Ile	Phe	Pro	Tyr	Thr	Thr	Leu	Ser	Asp	Pro	Arg	Gly	Thr	Leu		
65					70					75					80		
Cys	Ile	Phe	Ser	Gly	Asp	Leu	Tyr	Ile	Ala	Asn	Leu	Asp	Asn	Ala	Ile		
				85					90					95			

Ser Arg Thr Ser Ser Cys Phe Ser Asn Arg Ala Gly A Leu Gln
 100 105 110
 Ile Leu Gly Lys Gly Gly Val Phe Ser Phe Leu Asn Ile Arg Ser Ser
 115 120 125
 Ala Asp Gly Ala Ala Ile Ser Ser Val Ile Thr Gln Asn Pro Glu Leu
 130 135 140
 Cys Pro Leu Ser Phe Ser Gly Phe Ser Gln Met Ile Phe Asp Asn Cys
 145 150 155 160
 Glu Ser Leu Thr Ser Asp Thr Ser Ala Ser Asn Val Ile Pro His Ala
 165 170 175
 Ser Ala Ile Tyr Ala Thr Thr Pro Met Leu Phe Thr Asn Asn Asp Ser
 180 185 190
 Ile Leu Phe Gln Tyr Asn Arg Ser Ala Gly Phe Gly Ala Ala Ile Arg
 195 200 205
 Gly Thr Ser Ile Thr Ile Glu Asn Thr Lys Lys Ser Leu Leu Phe Asn
 210 215 220
 Gly Asn Gly Ser Ile Ser Asn Gly Gly Ala Leu Thr Gly Ser Ala Ala
 225 230 235 240
 Ile Asn Leu Ile Asn Asn Ser Ala Pro Val Ile Phe Ser Thr Asn Ala
 245 250 255
 Thr Gly Ile Tyr Gly Gly Ala Ile Tyr Leu Thr Gly Gly Ser Met Leu
 260 265 270
 Thr Ser Gly Asn Leu Ser Gly Val Leu Phe Val Asn Asn Ser Ser Arg
 275 280 285
 Ser Gly Gly Ala Ile Tyr Ala Asn Gly Asn Val Thr Phe Ser Asn Asn
 290 295 300
 Ser Asp Leu Thr Phe Gln Asn Asn Thr Ala Ser Pro Gln Asn Ser Leu
 305 310 315 320
 Pro Ala Pro Thr Pro Pro Pro Thr Pro Pro Ala Val Thr Pro Leu Leu
 325 330 335
 Gly Tyr Gly Gly Ala Ile Phe Cys Thr Pro Pro Ala Thr Pro Pro Pro
 340 345 350
 Thr Gly Val Ser Leu Thr Ile Ser Gly Glu Asn Ser Val Thr Phe Leu
 355 360 365
 Glu Asn Ile Ala Ser Glu Gln Gly Gly Ala Leu Tyr Gly Lys Lys Ile
 370 375 380
 Ser Ile Asp Ser Asn Lys Ser Thr Ile Phe Leu Gly Asn Thr Ala Gly
 385 390 395 400
 Lys Gly Gly Ala Ile Ala Ile Pro Glu Ser Gly Glu Leu Ser Leu Ser
 405 410 415
 Ala Asn Gln Gly Asp Ile Leu Phe Asn Lys Asn Leu Ser Ile Thr Ser
 420 425 430
 Gly Thr Pro Thr Arg Asn Ser Ile His Phe Gly Lys Asp Ala Lys Phe
 435 440 445
 Ala Thr Leu Gly Leu Arg Lys Ala Ile Pro Tyr Thr Ser Met Ile Arg
 450 455 460
 Leu His Leu Met Ile Tyr Leu Cys Ile Arg Ser Arg Tyr Cys Gly Arg
 465 470 475 480
 Gln Ser Gln Ser Gln Cys Arg Trp Cys Val Phe Arg Asp Tyr Cys Leu
 485 490 495
 Phe Arg Arg Asn Pro His Cys Tyr Arg Ser Ser Asn Pro Cys Lys Cys
 500 505 510
 Tyr Ile Tyr Ile Lys Pro Lys Ala Arg Thr
 515 520

<210>481

<211>85

<212>PRT

<213>Chlamydia pneumoniae

<400>481

Arg Ala Pro Pro Cys Ser Glu Ala Met Phe Ser Arg Asn Val Thr Leu
 1 5 10 15
 Phe Ser Pro Asp Ile Val Arg Leu Thr Pro Val Gly Gly Gly Val Ala
 20 25 30
 Gly Gly Val Gln Lys Met Ala Pro Pro Tyr Pro Asn Lys Gly Val Thr

35 40 45
 Ala Gly Val Gly Gly Gly Val Gly Ala Gly Lys Glu Phe Cys Gly
 50 55 60
 Asp Ala Val Leu Phe Trp Lys Val Arg Ser Leu Leu Glu Asn Val
 65 70 75 80
 Thr Phe Pro Leu Ala
 85
 <210>482
 <211>530
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>482
 Phe Ile Ser Ala Ser Ala Ala Ala Thr Val Val Val Asn Pro Lys Ala
 1 5 10 15
 Ser Ala Asp Gly Ala Tyr Ser Gly Thr Ile Val Phe Ser Gly Glu Thr
 20 25 30
 Leu Thr Ala Thr Glu Ala Ala Thr Pro Ala Asn Ala Thr Ser Thr Leu
 35 40 45
 Asn Gln Lys Leu Glu Leu Glu Gly Gly Thr Leu Ala Leu Arg Asn Gly
 50 55 60
 Ala Thr Leu Asn Val His Asn Phe Thr Gln Asp Glu Lys Ser Val Val
 65 70 75 80
 Ile Met Asp Ala Gly Thr Thr Leu Ala Thr Thr Asn Gly Ala Asn Asn
 85 90 95
 Thr Asp Gly Ala Ile Thr Leu Asn Lys Leu Val Ile Asn Leu Asp Ser
 100 105 110
 Leu Asp Gly Thr Lys Ala Ala Val Val Asn Val Gln Ser Thr Asn Gly
 115 120 125
 Ala Leu Thr Ile Ser Gly Thr Leu Gly Leu Val Lys Asn Ser Gln Asp
 130 135 140
 Cys Cys Asp Asn His Gly Met Phe Asn Lys Asp Leu Gln Gln Val Pro
 145 150 155 160
 Ile Leu Glu Leu Lys Ala Thr Ser Asn Thr Val Thr Thr Thr Asp Phe
 165 170 175
 Ser Leu Gly Thr Asn Gly Tyr Gln Gln Ser Pro Tyr Gly Tyr Gln Gly
 180 185 190
 Thr Trp Glu Phe Thr Ile Asp Thr Thr Thr His Thr Val Thr Gly Asn
 195 200 205
 Trp Lys Lys Thr Gly Tyr Leu Pro His Pro Glu Arg Leu Ala Pro Leu
 210 215 220
 Ile Pro Asn Ser Leu Trp Ala Asn Val Ile Asp Leu Arg Ala Val Ser
 225 230 235 240
 Gln Ala Ser Ala Ala Asp Gly Glu Asp Val Pro Gly Lys Gln Leu Ser
 245 250 255
 Ile Thr Gly Ile Thr Asn Phe Phe His Ala Asn His Thr Gly Asp Ala
 260 265 270
 Arg Ser Tyr Arg His Met Gly Gly Gly Tyr Leu Ile Asn Thr Tyr Thr
 275 280 285
 Arg Ile Thr Pro Asp Ala Ala Leu Ser Leu Gly Phe Gly Gln Leu Phe
 290 295 300
 Thr Lys Ser Lys Asp Tyr Leu Val Gly His Gly His Ser Asn Val Tyr
 305 310 315 320
 Phe Ala Thr Val Tyr Ser Asn Ile Thr Lys Ser Leu Phe Gly Ser Ser
 325 330 335
 Arg Phe Phe Ser Gly Gly Thr Ser Arg Val Thr Tyr Ser Arg Ser Asn
 340 345 350
 Glu Lys Val Lys Thr Ser Tyr Thr Lys Leu Pro Lys Gly Arg Cys Ser
 355 360 365
 Trp Ser Asn Asn Cys Trp Leu Gly Glu Leu Glu Gly Asn Leu Pro Ile
 370 375 380
 Thr Leu Ser Ser Arg Ile Leu Asn Leu Lys Gln Ile Ile Pro Phe Val
 385 390 395 400
 Lys Ala Glu Val Ala Tyr Ala Thr His Gly Gly Ile Gln Glu Asn Thr
 405 410 415

Pro Glu Gly Arg Ile Phe Gly His Gly His Leu Leu Asn Val Ala Val
 420 425 430
 Pro Val Gly Val Arg Phe Gly Lys Asn Ser His Asn Arg Pro Asp Phe
 435 440 445
 Tyr Thr Ile Ile Val Ala Tyr Ala Pro Asp Val Tyr Arg His Asn Pro
 450 455 460
 Asp Cys Asp Thr Thr Leu Pro Ile Asn Gly Ala Thr Trp Thr Ser Ile
 465 470 475 480
 Gly Asn Asn Leu Thr Arg Ser Thr Leu Leu Val Gln Ala Ser Ser His
 485 490 495
 Thr Ser Val Asn Asp Val Leu Glu Ile Phe Gly His Cys Gly Cys Asp
 500 505 510
 Ile Arg Arg Thr Ser Arg Gln Tyr Thr Leu Asp Ile Gly Ser Lys Leu
 515 520 525

Arg Phe
 530

<210>483

<211>280

<212>PRT

<213>Chlamydia pneumoniae

<400>483

Gly Met Pro Leu Ser Phe Lys Ser Ser Ser Phe Cys Leu Leu Ala Cys
 1 5 10 15
 Leu Cys Ser Ala Ser Cys Ala Phe Ala Glu Thr Arg Leu Gly Gly Asn
 20 25 30
 Phe Val Pro Ile Thr Asn Gln Gly Glu Glu Ile Leu Leu Thr Ser
 35 40 45
 Asp Phe Val Cys Ser Asn Phe Leu Gly Ala Ser Phe Ser Ser Ser Phe
 50 55 60
 Ile Asn Ser Ser Ser Asn Leu Ser Leu Leu Gly Lys Gly Leu Ser Leu
 65 70 75 80
 Thr Phe Thr Ser Cys Gln Ala Pro Thr Asn Ser Asn Tyr Ala Leu Leu
 85 90 95
 Ser Ala Ala Glu Thr Leu Thr Phe Lys Asn Phe Ser Ser Ile Asn Phe
 100 105 110
 Thr Gly Asn Gln Ser Thr Gly Leu Gly Gly Leu Ile Tyr Gly Lys Asp
 115 120 125
 Ile Val Phe Gln Ser Ile Lys Asp Leu Ile Phe Thr Thr Asn Arg Val
 130 135 140
 Ala Tyr Ser Pro Ala Ser Val Thr Thr Ser Ala Thr Pro Ala Ile Thr
 145 150 155 160
 Thr Val Thr Thr Gly Ala Ser Ala Leu Gln Pro Thr Asp Ser Leu Thr
 165 170 175
 Val Glu Asn Ile Ser Gln Ser Ile Lys Phe Phe Gly Asn Leu Ala Asn
 180 185 190
 Phe Gly Ser Ala Ile Ser Ser Ser Pro Thr Ala Val Val Lys Phe Ile
 195 200 205
 Asn Asn Thr Ala Thr Met Ser Phe Ser His Asn Phe Thr Ser Ser Gly
 210 215 220
 Gly Gly Val Ile Tyr Gly Gly Ser Ser Leu Leu Phe Glu Asn Asn Ser
 225 230 235 240
 Gly Cys Ile Ile Phe Thr Ala Asn Ser Cys Val Asn Ser Leu Lys Gly
 245 250 255
 Val Thr Pro Ser Ser Gly Thr Tyr Ala Leu Gly Ser Gly Gly Ala Ser
 260 265 270
 Ala Ser Leu Arg Glu Leu Ser Asn
 275 280

<210>484

<211>82

<212>PRT

<213>Chlamydia pneumoniae

<400>484

Ile Thr Pro Pro Pro Asp Glu Val Lys Leu Trp Glu Lys Leu Met Val
 1 5 10 15

Ala Val Leu Leu Met Asn Leu Thr Thr Ala Val Gly Gln Leu Leu Ile
20 25 30
Ala Glu Pro Lys Leu Ala Arg Phe Pro Lys Asn Leu Ile Asp Trp Asp
35 40 45
Met Phe Ser Thr Val Ser Glu Ser Val Gly Trp Arg Ala Glu Ala Pro
50 55 60
Val Val Thr Val Val Ile Ala Gly Val Ala Asp Val Val Thr Asp Ala
65 70 75 80
Gly Glu

<210>485

<211>492

<212>PRT

<213>Chlamydia pneumoniae

<400>485

Lys Gln Phe Trp Met His His Leu His Arg Gln Leu Leu Cys Glu Gln
1 5 10 15
Leu Lys Arg Arg His Pro Phe Ile Arg Asn Leu Cys Phe Arg Lys Trp
20 25 30
Arg Ser Ile Cys Ile Pro Thr Gly Thr Phe Glu Leu Lys Asn Asn Gln
35 40 45
Gly Lys Cys Thr Phe Ser Tyr Asn Gly Thr Pro Asn Asp Ala Gly Ala
50 55 60
Ile Tyr Ala Glu Thr Cys Asn Ile Val Gly Asn Gln Gly Ala Leu Leu
65 70 75 80
Leu Asp Ser Asn Thr Ala Ala Arg Asn Gly Gly Ala Ile Cys Ala Lys
85 90 95
Val Leu Asn Ile Gln Gly Arg Gly Pro Ile Glu Phe Ser Arg Asn Arg
100 105 110
Ala Glu Lys Gly Gly Ala Ile Phe Ile Gly Pro Ser Val Gly Asp Pro
115 120 125
Ala Lys Gln Thr Ser Thr Leu Thr Ile Leu Ala Ser Glu Gly Asn Ile
130 135 140
Ala Phe Gln Gly Asn Met Leu Asn Thr Lys Pro Gly Ile Arg Asn Ala
145 150 155 160
Ile Thr Val Glu Ala Gly Gly Glu Ile Val Ser Leu Ser Ala Gln Gly
165 170 175
Gly Ser Arg Leu Val Phe Tyr Asp Pro Ile Thr His Ser Leu Pro Thr
180 185 190
Thr Ser Pro Ser Asn Lys Asp Ile Thr Ile Asn Ala Asn Gly Ala Ser
195 200 205
Gly Ser Val Val Phe Thr Ser Lys Gly Leu Ser Ser Thr Glu Leu Leu
210 215 220
Leu Pro Ala Asn Thr Thr Thr Ile Leu Leu Gly Thr Val Lys Ile Ala
225 230 235 240
Ser Gly Glu Leu Lys Ile Thr Asp Asn Ala Val Val Asn Val Leu Gly
245 250 255
Phe Ala Thr Gln Gly Ser Gly Gln Leu Thr Leu Gly Ser Gly Gly Thr
260 265 270
Leu Gly Leu Ala Thr Pro Thr Gly Ala Pro Ala Ala Val Asp Phe Thr
275 280 285
Ile Gly Lys Leu Ala Phe Asp Pro Phe Ser Phe Leu Lys Arg Asp Phe
290 295 300
Val Ser Ala Ser Val Asn Ala Gly Thr Lys Asn Val Thr Leu Thr Gly
305 310 315 320
Ala Leu Val Leu Asp Glu His Asp Val Thr Asp Leu Tyr Asp Met Val
325 330 335
Ser Leu Gln Ser Pro Val Ala Ile Pro Ile Ala Val Phe Lys Gly Ala
340 345 350
Thr Val Thr Lys Thr Gly Phe Pro Asp Gly Glu Ile Ala Thr Pro Ser
355 360 365
His Tyr Gly Tyr Gln Gly Lys Trp Ser Tyr Thr Trp Ser Arg Pro Leu
370 375 380
Leu Ile Pro Ala Pro Asp Gly Gly Phe Pro Gly Gly Pro Ser Pro Ser

385 390 395 400
 Ala Asn Thr Leu Tyr Ala Val Trp Asn Ser Asp Thr Leu Val Arg Ser
 405 410 415
 Thr Tyr Ile Leu Asp Pro Glu Arg Tyr Gly Glu Ile Val Ser Asn Ser
 420 425 430
 Leu Trp Ile Ser Phe Leu Gly Asn Gln Ala Phe Ser Asp Ile Leu Gln
 435 440 445
 Asp Val Leu Leu Ile Asp His Pro Gly Leu Ser Ile Thr Ala Lys Ala
 450 455 460
 Leu Gly Ala Tyr Val Glu His Thr Pro Arg Gln Gly His Glu Gly Phe
 465 470 475 480
 Ser Gly Arg Tyr Gly Gly Tyr Gln Val Arg Tyr Leu
 485 490

<210>486

<211>264

<212>PRT

<213>Chlamydia pneumoniae

<400>486

Gly Leu Phe Arg Ser Leu Trp Arg Leu Pro Ser Ala Leu Ser Met Asn
 1 5 10 15
 Tyr Thr Asp His Thr Thr Leu Gly Leu Ser Phe Gly Gln Leu Tyr Gly
 20 25 30
 Lys Thr Asn Ala Asn Pro Tyr Asp Ser Arg Cys Ser Glu Gln Met Tyr
 35 40 45
 Leu Leu Ser Phe Phe Gly Gln Phe Pro Ile Val Thr Gln Lys Ser Glu
 50 55 60
 Ala Leu Ile Ser Trp Lys Ala Ala Tyr Gly Tyr Ser Lys Asn His Leu
 65 70 75 80
 Asn Thr Thr Tyr Leu Arg Pro Asp Lys Ala Pro Lys Ser Gln Gly Gln
 85 90 95
 Trp His Asn Asn Ser Tyr Tyr Val Leu Ile Ser Ala Glu His Pro Phe
 100 105 110
 Leu Asn Trp Cys Leu Leu Thr Arg Pro Leu Ala Gln Ala Trp Asp Leu
 115 120 125
 Ser Gly Phe Ile Ser Ala Glu Phe Leu Gly Gly Trp Gln Ser Lys Phe
 130 135 140
 Thr Glu Thr Gly Asp Leu Gln Arg Ser Phe Ser Arg Gly Lys Gly Tyr
 145 150 155 160
 Asn Val Ser Leu Pro Ile Gly Cys Ser Ser Gln Trp Phe Thr Pro Phe
 165 170 175
 Lys Lys Ala Pro Ser Thr Leu Thr Ile Lys Leu Ala Tyr Lys Pro Asp
 180 185 190
 Ile Tyr Arg Val Asn Pro His Asn Ile Val Thr Val Val Ser Asn Gln
 195 200 205
 Glu Ser Thr Ser Ile Ser Gly Ala Asn Leu Arg Arg His Gly Leu Phe
 210 215 220
 Val Gln Ile His Asp Val Val Asp Leu Thr Glu Asp Thr Gln Ala Phe
 225 230 235 240
 Leu Asn Tyr Thr Phe Asp Gly Lys Asn Gly Phe Thr Asn His Arg Val
 245 250 255
 Ser Thr Gly Leu Lys Ser Thr Phe
 260

<210>487

<211>357

<212>PRT

<213>Chlamydia pneumoniae

<400>487

Asn Arg Gln Arg Leu His Ala Pro Leu Ser Gln Gly Ser His Cys His
 1 5 10 15
 Ser Tyr Leu Ala Asp Leu Thr His Glu Glu Leu Lys Ile Leu Leu Phe
 20 25 30
 Ser Ala Phe Val Asp Ala Lys Asn Ile Ser Lys Lys Glu Leu Arg Glu
 35 40 45
 Val Ser Leu Asn Phe Ala Asn Asp Thr Ser Val Glu Ser Trp Leu Arg

Ile Thr Arg Ser Tyr Ser Tyr Ala Pro Thr Pro Gln Leu Asn Ser Ile
 165 170 175
 Ala Ile Val Gly Ile Asp Leu Val Ser Pro Glu Glu Gln Glu Asn Leu
 180 185 190
 Val Arg Leu Ala Asn Glu Val Ile Gln Leu Tyr Pro Lys Ser Lys Thr
 195 200 205
 Thr Leu Tyr Leu Leu Ile Asp Phe Asn Xaa Glu Trp Val Gly Asp Ile
 210 215 220
 Ser Ser Asp Lys Glu Lys Gln Leu Arg Ser Leu Gly Leu His Ser Glu
 225 230 235 240
 Val Gln Cys Leu Ser Val Leu Glu Pro Gln Gly Ala Glu Gly Glu Asp
 245 250 255
 Thr Lys His Phe Asp Leu Met Val Gly Cys Tyr Gly Lys Asp Ser Tyr
 260 265 270
 Leu Arg Glu Gly Lys Ile Leu Gln Ala Leu Gly Thr Ser Leu Gly
 275 280 285
 Thr Val Pro Trp Val Asn Val Met His Thr Leu Pro Ser Arg Tyr Arg
 290 295 300
 Ser Arg Leu Ser Leu Pro Ile Asn Thr Glu Lys Asp Lys Thr Glu Leu
 305 310 315 320
 Tyr Lys Glu Ile Ser Arg Thr His His Gln Leu His Thr Leu Gly Met
 325 330 335
 Gly Leu Gly Ala Gln Asp Phe Arg Asp Cys Ser
 340 345

<210>489

<211>636

<212>PRT

<213>Chlamydia pneumoniae

<400>489

Val Phe Leu Pro Ser Arg Val Met Ala Ser Cys Leu Ser Ala Trp Phe
 1 5 10 15
 Ser Ile Val Arg Glu His Phe Tyr Arg Ala Phe Asp Phe Ser Leu Pro
 20 25 30
 Phe Cys Ala Arg Ile Thr Glu Phe Val Leu Gly Val Ile Lys Gly Ile
 35 40 45
 Pro Val Val Gly His Ile Ile Val Gly Ile Glu Trp Leu Val Ser Arg
 50 55 60
 Tyr Leu Glu Ser Phe Val Thr Lys Pro Thr Phe Val Ser Asp Val Val
 65 70 75 80
 Ser Leu Leu Lys Thr Glu Lys Val Ala Gly Arg Asp His Ile Ala Arg
 85 90 95
 Val Val Glu Thr Leu Lys Arg Gln Arg Val Ala Val Ala Pro Glu Asp
 100 105 110
 Glu Asp Lys Val His Gly Lys Ile Pro Val His Pro Phe Gly Gly Ile
 115 120 125
 Gln Pro Val Glu Val Leu Thr Leu Tyr Pro Glu Val Gln Asp Ala Thr
 130 135 140
 Leu Gly Leu Ala Phe Ser Lys Ile Arg Asn Arg Val Arg Gln Ala Tyr
 145 150 155 160
 Leu Gln Ala Pro Arg Pro Lys Leu Gln Lys Ile Tyr Ile Ile Gly Asn
 165 170 175
 Asp Met Asn Pro Phe Glu Val Asp Asp Phe Leu His Leu Ala Arg Leu
 180 185 190
 Cys Asn Glu Thr Gln Arg Leu Tyr Pro Asp Ala Thr Ile Ser Leu Tyr
 195 200 205
 Leu Thr Ala Ser Gly Gly Arg Asn Ala Met Asp Lys Lys Asn Arg Lys
 210 215 220
 Leu Leu Ser Asp Cys Glu Leu Asn Pro Lys Ile Ala Cys Leu Asp Phe
 225 230 235 240
 Asn Gln Gly Asp Val Val Lys Gln Ala Thr Cys Asp Cys Trp Met Val
 245 250 255
 Tyr His Gly Glu Asn Asp Gln Gly Thr Leu Asn Gln Ile Gln Glu Glu
 260 265 270
 Leu Glu Lys Ser Gly Glu Glu Thr Pro Trp Ile His Val Gly Gln Lys

275 280 285
 Pro Leu Ser Gln Ser Leu Trp Asp Phe Ser Pro Phe Ser Ser Leu Glu
 290 295 300
 Met Lys Gly Asp Lys Glu Lys Ala Leu Glu Tyr Ser Glu Leu Glu Lys
 305 310 315 320
 Glu Gln Leu Tyr Ser Arg Leu Val Tyr Val Gly Glu Arg Ser Ser Val
 325 330 335
 Leu Ser Leu Gly Phe Gly Asp Ser Arg Ser Gly Ile Leu Met Asp Pro
 340 345 350
 Lys Arg Val His Ala Pro Leu Ser Glu Gly His Tyr Cys His Ser Tyr
 355 360 365
 Leu Ala Asp Leu Glu Asn Pro Gly Leu Gln Lys Thr Ile Leu Ala Ala
 370 375 380
 Phe Leu Asn Pro Lys Glu Leu Ser Ser Thr Ile Leu Gln Pro Ile Ser
 385 390 395 400
 Leu Asn Leu Ile Leu Asn Ser Lys Thr Tyr Leu Arg Gln His Phe Gly
 405 410 415
 Phe Phe Glu Arg Met Ser Arg Ser Asp Arg Asn Val Val Val Val
 420 425 430
 Cys Asp Ser Trp Trp Gly Thr Asp Trp Lys Glu Glu Pro Ser Phe Gln
 435 440 445
 His Phe Ile Met Glu Leu Glu Cys Arg Gly Tyr Ser His Phe Asn Ile
 450 455 460
 Phe Ala Phe Arg Ser Asn Ser Met Cys Val Glu Glu Arg Arg Ile Leu
 465 470 475 480
 Asn Glu Ser Ser Gln Glu Lys Ala Phe Thr Met Ile Phe Cys Glu Asp
 485 490 495
 Ser Val Ser Gln Gly Asp Ile Arg Cys Leu His Leu Ala Ser Glu Gly
 500 505 510
 Met Leu Cys Gly Lys Glu Cys Tyr Ala Val Asp Val Tyr Thr Ser Gly
 515 520 525
 Cys Ala Asn Phe Met Met Glu Glu Val Leu Thr Leu Glu Arg Glu Ser
 530 535 540
 Asn Leu Trp Asn Arg Lys His Gly Leu Trp Lys Arg Glu Val Arg Lys
 545 550 555 560
 Gln Lys Gln Glu Ala Ala Leu Asp Gln Asp Glu Ser Glu Ile Tyr Val
 565 570 575
 Cys Asn Gln Leu Thr Ala Gln Gln Asn Phe Ala Cys Ser Leu Asp Ala
 580 585 590
 Ala Ile Arg Gln Ser Ile Trp Arg Ser Arg Met Pro Glu Leu Leu Ser
 595 600 605
 Ile Glu Arg Arg Ala Leu Gly Glu Gln Leu Phe Thr Thr Val His His
 610 615 620
 Tyr Leu Thr Thr Gln Lys Lys Ile Leu Arg Gly Ile
 625 630 635

<210>490

<211>703

<212>PRT

<213>Chlamydia pneumoniae

<400>490

Tyr Phe Leu Cys Cys Tyr Leu Lys Leu Phe Val Ser Asn Phe Ile Phe
 1 5 10 15
 Phe Val Xaa Met Pro Ile Pro Tyr Ile Ser Ser Trp Ile Ser Thr Val
 20 25 30
 Arg Gln His Phe Val Lys Ala Phe Asp Phe Ser Arg Pro Phe Cys Ser
 35 40 45
 Arg Val Thr Asn Phe Ala Leu Gly Val Ile Lys Ala Ile Pro Ile Val
 50 55 60
 Gly His Ile Val Met Gly Met Glu Trp Leu Val Ser Ser Cys Val Ala
 65 70 75 80
 Gly Ile Ile Thr Arg Ser Ser Phe Thr Ser Asp Val Val Gln Ile Val
 85 90 95
 Lys Thr Glu Lys Ala Leu Gly Arg Asp His Ile Ser Arg Val Ala Glu
 100 105 110

Ile Leu Gln Arg Glu Arg Gly Thr Ile Thr Pro Glu Asn Glu Asp Lys
 115 120 125
 Val His Gly Lys Phe Pro Val Cys Pro Phe Gly Arg Leu Lys Ser Glu
 130 135 140
 Glu Thr Leu Lys Leu Lys Pro Gly Glu Arg Gly Gly Thr Leu Asp Thr
 145 150 155 160
 Val Phe Ser Pro Ile Arg Thr Arg Val Thr Arg Ala Tyr Leu Gln Ala
 165 170 175
 Pro Arg Pro Glu Ile Arg Thr Ile Ser Ile Val Gly Ser Lys Leu Lys
 180 185 190
 Thr Pro Gln Asp Phe Ser Gln Phe Val Ser Leu Ala Asn Glu Thr Gln
 195 200 205
 Arg Leu His Pro Glu Ala Leu Val Cys Leu Tyr Leu Thr Gly Leu Asn
 210 215 220
 Arg Glu Ser Gln Met Cys Asp Thr Thr Thr Ala Glu Lys Lys Gln Tyr
 225 230 235 240
 Leu His Asn Ser Gly Leu Asp Ser Arg Ile Gln Cys Lys Asp Ser Lys
 245 250 255
 Glu Asp Asp Ala Gly Ser Pro Glu Asn Pro Glu Leu Trp Ile Gly Tyr
 260 265 270
 Tyr Ser Arg Glu Gln Gln His Asn Ile Asp Gly Gln Tyr Ile Gln Gln
 275 280 285
 Cys Leu Gly Lys Ser Ala Asp Pro Ile Pro Trp Ile His Val Thr Glu
 290 295 300
 Asp Thr Lys Asp Phe Tyr Tyr Pro Pro Asn Phe Thr Ser Tyr Ser His
 305 310 315 320
 Thr Arg Gln Ser Thr Asp Pro Thr Ser Pro Pro Arg Leu Pro Glu Ser
 325 330 335
 Glu Gly Asp Lys Asp Ser Leu Tyr Gly Gln Leu Ser Arg Ser Tyr His
 340 345 350
 His Glu Tyr Met Leu Gly Leu Gly Leu Lys Pro Glu Asp Ala Gly Leu
 355 360 365
 Leu Met Asp Pro Asp Arg Ile Tyr Ala Pro Leu Ser Gln Gly His Tyr
 370 375 380
 Cys His Ser Tyr Leu Ala Asp Ile Glu Asn Glu Asp Leu Arg Thr Leu
 385 390 395 400
 Val Leu Ser Pro Phe Leu Asp Pro Gly Asn Leu Ser Ser Glu Asp Leu
 405 410 415
 Arg Pro Val Ala Phe Asn Ile Ala Arg Leu Pro Leu Glu Leu Asp Ser
 420 425 430
 Leu Phe Phe Arg Leu Val Ala Gly Gln Gln Glu Gly Arg Asn Ile Val
 435 440 445
 Thr Leu Ala His Gly Thr Pro Arg Pro Glu Asp Leu Asp Pro Asp Ser
 450 455 460
 Met Asn Ile Leu Thr Arg Arg Leu Gln Met Ser Gly Tyr Ser Tyr Leu
 465 470 475 480
 Asn Ile Phe Ser Tyr Lys Ser Arg Lys Met Ile Val Lys Glu Arg Gln
 485 490 495
 Phe Phe Gly Asp Arg Ser Glu Gly Lys Ser Phe Thr Leu Ile Leu Phe
 500 505 510
 Glu Asp Pro Ile Ser Ala Ala Asp Phe Arg Cys Leu Gln Leu Ala Ala
 515 520 525
 Glu Gly Met Val Ala Lys Asp Leu Pro Ser Val Ala Asp Ile Cys Ala
 530 535 540
 Ser Gly Cys Ser Cys Ile Gln Phe Ser Glu Met Gln Ser Pro Gln Ala
 545 550 555 560
 Ile Glu Tyr Arg Gln Trp Glu Ala Arg Val Glu Asp Glu Ala Gly Glu
 565 570 575
 Glu Ala Arg Glu Pro Val Ile Tyr Ser Gln Asp Gln Leu Ser Ser Met
 580 585 590
 Leu Thr Thr Gln Gln Asn Phe Val Phe Ser Leu Asp Ala Val Val Lys
 595 600 605
 Gln Ala Ile Trp Arg Phe Arg Ser Lys Gly Leu Leu Thr Met Glu Arg
 610 615 620

Lys Ala Leu Gly Glu Glu Phe Leu Thr Ala Ile Phe Ser Tyr Leu Gly
 625 630 635 640
 Ser Gln Glu Arg Asn Glu Asn Met Gly Lys Arg Thr Thr Glu Glu His
 645 650 655
 Glu Val Val Ile Ser Phe Glu Glu Leu Asp Arg Met Val Gln Val Leu
 660 665 670
 Pro Ala Glu Val Pro Ala Asp Ser Gly Asn Asp Pro Thr His Pro Val
 675 680 685
 Pro Asn Pro Asp Ser Asn Pro Asp Ser Ser Gln Asn Glu Gly Ser
 690 695 700

<210>491

<211>148

<212>PRT

<213>Chlamydia pneumoniae

<400>491

Ser Thr Lys Ile Gln Met His Pro Gly Leu Arg Asn Trp Arg Thr Ser
 1 5 10 15
 Thr Asn Lys Leu Arg Glu Glu Gly Ser Val Ser Phe Arg Glu Tyr Phe
 20 25 30
 Arg Ala Tyr Met Cys Asp Lys Ile Val Ala Gln Lys Asn Phe Leu Phe
 35 40 45
 Thr Leu Asp Ala Val Ile Lys Gln Ala Gly Trp Arg Ser Gln Glu Lys
 50 55 60
 Leu Asn Leu Phe Tyr Val Glu Ser Gln Ala Leu Gly Arg Glu Ile Lys
 65 70 75 80
 Val Ser Leu Glu Glu Tyr Ile Gln Ser Met Val Gly Ile Leu Gly Ser
 85 90 95
 Gln Arg Thr Lys Lys Ser Phe Lys Phe Ser Val Asp Phe Thr Pro Leu
 100 105 110
 Glu Gln Ala Leu Gln Glu Arg Cys Ser Ser Asp Asp Asp Glu Asp Ala
 115 120 125
 Thr Ala Ala Ser Thr Ala Thr Gly Ala Thr Ala Ser Pro Thr Asp Met
 130 135 140
 His Glu Asp Glu

145

<210>492

<211>283

<212>PRT

<213>Chlamydia pneumoniae

<400>492

Val Ile Gln His Leu Leu Asn Phe Ala Leu Glu Glu Thr Pro Ser Ile
 1 5 10 15
 Ser Val Gln Tyr Gln Glu Gln Glu Lys Leu Ser Pro Cys Asp His Ser
 20 25 30
 Pro Glu Ile Gly Lys Lys Lys Arg Trp Asn Lys Leu Glu Ser Phe Ser
 35 40 45
 Thr Tyr Cys Ser Leu Phe Met Ser Val Lys Asp His Tyr Lys Leu Asn
 50 55 60
 Leu Gly Ile Gln Asn Ser Leu Ser Gly Trp Leu Leu Asp Pro Tyr Arg
 65 70 75 80
 Val Cys Ala Pro Leu Ser Ser Pro Tyr Ser Cys Pro Ser Tyr Leu Leu
 85 90 95
 Asp Leu Gln Asn Lys Glu Leu Arg Arg Ser Leu Leu Ser Thr Phe Leu
 100 105 110
 Asp Pro Lys Asn Leu Thr Ser Glu Thr Phe Arg Ser Val Ser Ile Asn
 115 120 125
 Phe Gly Asn Ser Ser Phe Gly Gln Arg Trp Ser Glu Phe Leu Ser Arg
 130 135 140
 Val Leu His Asp Glu Lys Glu Lys His Val Ala Val Val Cys Asn Asp
 145 150 155 160
 Ala Lys Leu Leu Glu Glu Gly Leu Ser Pro Glu Ala Leu Ser Leu Leu
 165 170 175
 Glu Glu Asp Leu Arg Glu Ser Gly Tyr Ser Tyr Leu Asn Ile Leu Ser
 180 185 190

Val Ser Pro Glu Gly Val Ser Lys Val Gln Glu Arg Gln Ile Leu Arg
 195 200 205
 Arg Asp Leu Gln Gly Arg Ser Phe Thr Val Met Ile Thr Asp Leu Pro
 210 215 220
 Leu Gly Ser Glu Asp Ile Arg Ser Leu Gln Leu Ala Ser Asp Arg Ile
 225 230 235 240
 Leu Val Ser Ser Ser Leu Asp Ala Ala Asp Ala Cys Ala Ser Gly Cys
 245 250 255
 Lys Val Leu Val Tyr Glu Asn Pro Asn Ala Ser Trp Ala Gln Glu Leu
 260 265 270
 Glu Asn Phe Tyr Lys Gln Val Glu Arg Arg Arg
 275 280

<210>493

<211>169

<212>PRT

<213>Chlamydia pneumoniae

<400>493

Leu Glu Ser Pro His Phe Pro Arg Arg Ser Arg Gln Ser Thr Arg Glu
 1 5 10 15
 Asn Pro Arg Arg Ser Leu Arg Arg Tyr His Thr His Arg Asn Cys Pro
 20 25 30
 Thr Phe Ser Leu Ile Glu Glu Leu Ser Thr Val Asp Glu Ala Leu Gln
 35 40 45
 Gly Val Arg Ser Arg Leu Thr Tyr Ala Tyr Arg Ser Val Glu Lys Pro
 50 55 60
 Met Ile Gln Asp Leu Ala Leu Val Gly Phe Gly Leu Arg Asp Ser Ala
 65 70 75 80
 Asp Leu Ile Asn Phe Val Arg Leu Ala Asn Gly Val Gln Asn His Tyr
 85 90 95
 Pro His Thr Lys Val Lys Leu Tyr Leu Ala Lys Asn Leu Ala Asp Val
 100 105 110
 Trp Asp Cys Glu Ile Ser Glu Glu Glu Lys Gly Gln Leu Arg Ala Leu
 115 120 125
 Gly Leu Asp Pro Lys Ile Glu Ser Ile Ser Leu Thr Ser Ala Gly Leu
 130 135 140
 Pro Ser Val Pro Glu Val Ala Thr Val Asp Phe Met Ile Thr Cys Tyr
 145 150 155 160
 Gly Lys Asp Gln Glu Val Gln Asp Pro
 165

<210>494

<211>135

<212>PRT

<213>Chlamydia pneumoniae

<400>494

Ile Ser Thr Val Ala Cys Pro Ser Ile Ser Ser Trp Phe Thr Val Val
 1 5 10 15
 Arg Gln His Phe Val Asn Ala Phe Asp Phe Thr His Pro Val Cys Ser
 20 25 30
 Arg Ile Thr Asn Phe Ala Leu Gly Ile Ile Lys Ala Ile Pro Val Leu
 35 40 45
 Gly His Ile Val Met Gly Ile Glu Trp Leu Ile Ser Trp Ile Pro Arg
 50 55 60
 His Thr Val Arg His Gly Met Phe Thr Ser Asp Val Ser Ser Ala Ile
 65 70 75 80
 Lys Val Glu Gln Thr Arg Gly His Asn Cys Leu Ala Pro Leu Glu Ala
 85 90 95
 Tyr Leu Ser Ser Leu Arg Val Pro Ile Ser Gln Glu Asp Leu Gly Lys
 100 105 110
 Val His Gly Arg Thr Pro Glu Asp Pro Phe Val Asp Ile Thr Pro Thr
 115 120 125
 Glu Ile Val Gln Pro Ser Pro
 130 135

<210>495

<211>156

<212>PRT

<213>Chlamydia pneumoniae

<400>495

Phe Leu Ser Ala Leu Asp Ala Ala Asp Ala Cys Ala Ser Glu Cys Lys
1 5 10 15
Ile Leu Glu Tyr Glu Asp Pro Glu Gln Glu Trp Ala Gln Gln Tyr Ala
20 25 30
Ser Phe Tyr Arg Asn Ile Asp Arg Ala Gly Asp Leu Gln Arg Gln Gly
35 40 45
Ile Pro Gly Glu Pro Leu Gly Val Ser Ala Ser Thr Arg Val Val Leu
50 55 60
Glu Lys Asp Ile Val Phe Asn Leu Asn Ala Val Ile Gln Gln Ala Met
65 70 75 80
Trp Lys Phe Lys Lys Arg Asp Leu Phe Ala Val Glu Ser Gln Ala Leu
85 90 95
Gly Asp Asp Met Arg Arg Ala Leu Glu Gly Tyr Ile Gly Ser Ser Leu
100 105 110
Leu Val Glu Gly Thr Ile Gln Pro Gln Val Ala Cys Asn Val Asn Val
115 120 125
Ser Phe Ala Thr Leu Asp Glu Ala Val Cys Ala Ala Cys Asp Ser Ala
130 135 140
Gln Asp Ala Pro Ser Glu Glu Asn Asn Thr Asp Asp
145 150 155

<210>496

<211>542

<212>PRT

<213>Chlamydia pneumoniae

<400>496

Leu Ile Phe Tyr Leu Phe Leu Asn Leu Tyr Ile Ala Cys Val Arg Phe
1 5 10 15
His Phe Gln Cys Trp Phe Asp Pro Met Ala Cys Tyr Ile Ser Ile Trp
20 25 30
Ile Ser Thr Val Lys Gln His Phe Ile Arg Ala Phe Asp Phe Thr Arg
35 40 45
Pro Leu Gly Ser Arg Ile Thr Asn Phe Ala Leu Gly Val Ile Lys Ala
50 55 60
Ile Pro Ile Leu Gly Cys Val Val Ile Gly Val Ser Trp Leu Val Ser
65 70 75 80
Thr Cys Ser Ala Arg Arg Phe Gly Lys Pro Ala Phe Thr Ser Asp Val
85 90 95
Ala Ser Ile Val Lys Ile Glu Lys Thr Arg Gly Tyr Asn Pro Leu Ala
100 105 110
Trp Val Glu Gln Tyr Leu Arg Gln Leu Arg Val Arg Leu Pro Glu Gly
115 120 125
Asp Leu Gly Lys Ile His Gly Lys Val Ser Arg Asp Tyr Val Cys Asp
130 135 140
Arg Thr Pro Gln Glu Asn Leu Asn Met Val Pro His Gln Tyr Leu Gly
145 150 155 160
Glu Leu Gly Arg Ala Phe Tyr Gly Ile Arg Asn Arg Val Thr Lys Ala
165 170 175
Tyr Gln Arg Val Thr Pro Leu Glu Val Pro Cys Leu Thr Leu Val Gly
180 185 190
Phe Asp Ile Leu Asp Pro Glu Asp Gln Val Asn Phe Val Arg Leu Ala
195 200 205
Asn Gly Ile Gln Thr Gln Tyr Pro Gln Thr Gln Ile Lys Leu Tyr Leu
210 215 220
Ile Ser Ile Gln Lys Ile Trp Asn Gln Cys Asp Gly Thr Ile Ser Gln
225 230 235 240
Glu Lys Glu Gln Gln Leu Arg Ser Leu Gly Leu Asp Ala Lys Ile Lys
245 250 255
Cys Val Ser Ala Pro Ala Leu Leu Leu Gln Lys Tyr Leu Gln Ser Glu
260 265 270
Asn Leu Pro Ser Cys Asp Leu Leu Ile Asn Tyr Tyr Gly Lys Gln Gln
275 280 285

Ser Val Arg Asp Val Asp Ser Ile Lys Ser Leu Leu Asn D Ser Ser
 290 295 300
 Glu His Ile Pro Ala Ile Ser Val Thr Tyr Arg Pro Asp Asp Pro Phe
 305 310 315 320
 Tyr Ser Tyr Tyr Phe Phe Pro Gly Ser Gln Gly Gly Thr Ala Pro Asp
 325 330 335
 Gln Arg Ile Pro Trp Ser Glu Gln Glu His Leu Gln Thr Tyr Thr Thr
 340 345 350
 Leu Ser Asn Pro Arg Cys Asp Arg Tyr Ala Val His Leu Gly Met Glu
 355 360 365
 Asp Phe Ala Ser Gly Val Phe Leu Asp Pro Leu Arg Val Ser Ala Pro
 370 375 380
 Leu Ser Gly Glu Tyr Ser Cys Pro Ser Tyr Leu Leu Asp Leu Lys Ser
 385 390 395 400
 Glu Glu Leu Arg Cys Phe Leu Leu Ser Ala Phe Ile Asp Pro Asn Asn
 405 410 415
 Ser Gly Gln Gly Asn Pro Arg Pro Met Ser Ile Asn Phe Gly Asn Ser
 420 425 430
 Pro Leu Gly Gln Arg Trp Ser Glu Phe Leu Ser Arg Val Leu His Asp
 435 440 445
 Glu Thr Glu Lys His Val Ala Val Val Cys Asn Asn Pro Gln Leu Ile
 450 455 460
 Lys Lys Ser Phe Pro Ser His Ser Leu Ser Leu Leu Glu Asn Glu Leu
 465 470 475 480
 Glu Glu Ser Gly Tyr Ser Tyr Leu Asn Ile Val Ser Val Ser Gln Glu
 485 490 495
 Arg Thr Cys Val Lys Glu Arg Arg Ile Leu Ser Ser Asp Pro Ser Gly
 500 505 510
 Arg Ser Phe Thr Val Ile Leu Thr Asp Leu Pro Glu Gly Ser Ser Asp
 515 520 525
 Ile Arg Asn Leu Gln Leu Ala Ser Asp Arg Ile Leu Val Ser
 530 535 540

<210>497

<211>430

<212>PRT

<213>Chlamydia pneumoniae

<400>497

Leu Ser Ser Pro Tyr Glu Lys Thr Glu Gln Leu Leu Gly Thr Pro Asn
 1 5 10 15
 Cys Arg Thr Pro Arg Val Asn Ile Ser Thr Val Gly Ile Pro Ile Asp
 20 25 30
 Glu Thr Ser Asn Ala Phe Val Asp Ser Met Met Lys Gln Gly Val Gly
 35 40 45
 Gln Asp Ala Lys Glu Leu Tyr Thr Phe Leu Ser Arg Gly Asn Glu His
 50 55 60
 Tyr Gln Pro Cys Leu Trp Phe Ser Leu Glu Glu Glu Leu Gly Phe Leu
 65 70 75 80
 Phe Asp Glu Lys Met Leu Cys Ala Pro Leu Ser Glu Asp His Tyr Cys
 85 90 95
 His Ser Tyr Leu Val Asp Leu Val Asp Gln His Leu Lys Asp Leu Ile
 100 105 110
 Leu Ser Met Phe Leu Asp Pro Gln Asn Ile Ser Ala Gly Glu Leu Leu
 115 120 125
 Lys Val Ser Ile Asn Val Gly Asp Ser Phe Ser Pro Leu Gln Gln Lys
 130 135 140
 Asp Phe Leu Ser Met Val Leu Arg Asp Glu Thr Gly Lys Asn Val Val
 145 150 155 160
 Val Val Phe Lys Gly Val Leu Ser Leu Pro Ala Thr Gln Val Cys Lys
 165 170 175
 Leu Val Glu Glu Leu Asn Ser Lys Asp Tyr Ser Tyr Leu Asn Ile Phe
 180 185 190
 Ser Cys His Gly Asp Ser Ser Pro Gln Leu Leu Phe Arg Lys Glu Leu
 195 200 205
 Glu Gly Thr Ser Gly Arg Tyr Phe Thr Val Ile Cys Ala Leu Tyr Leu

210	215	220
Gly Asp Thr Asp Met Arg Ser Leu Gln Leu Ala Ser Glu Arg Ile Met		
225	230	235
Val Ser Arg Glu Phe Asp Leu Val Asp Ala Tyr Ala Ala Arg Cys Lys		240
	245	250
Leu Leu Lys Ile Asp His Thr Asn Trp Arg Pro Gly Thr Phe Ser Arg		255
	260	265
His Ala Asp Phe Ala Asp Ala Val Asp Val Ser Ala Gly Phe Asn Ser		270
	275	280
Arg Glu Phe Lys Leu Ile Thr Gln Ala Asn Gln Gly Ile Leu Glu Ser		285
	290	295
Gly Glu Leu Pro Leu Pro Ser Lys Thr Phe Trp Glu Gly Phe Leu Ala		300
305	310	315
Phe Cys Asp Arg Val Thr Val Thr Arg His Phe Ile Pro Met Leu Asp		320
	325	330
Ala Ala Ile Lys Gln Ala Val Trp Thr His Lys His Pro Ser Leu Ile		335
	340	345
Asp Lys Glu Cys Glu Ala Leu Asp Leu Lys Thr Gln Cys Leu Pro Ser		350
	355	360
Ile Val Ser Tyr Leu Glu Tyr Val Thr Asn Ser His Glu Lys Thr Ser		365
	370	375
Lys Gly Pro Phe Ile Gln Lys Glu Ile Ile Ala Asp Cys Ser Pro Leu		380
385	390	395
Lys Glu Ala Leu Phe Pro Gly Ser Asp Glu Asp Val Pro Ser Thr Ser		400
	405	410
Glu Asp Pro Ser Asp Asp His Pro Ser Asp Leu Glu Asp Ser		415
	420	425
		430

<210>498

<211>186

<212>PRT

<213>Chlamydia pneumoniae

<400>498

Ser Leu Glu Thr Arg Gly Arg Phe Ala Glu Ile Cys Leu Gln Leu Leu		
1	5	10
Phe Phe Asp Ile Gln Ser Leu Lys Phe Leu Gln Leu Phe Ser Glu Gly		15
	20	25
Thr Ala Leu Asn Leu Phe Arg Ile Phe Ala Pro Leu Arg Asn Arg Val		30
	35	40
Thr Thr Glu Tyr Ser Arg Ala Arg Gln Pro Asp Leu His Arg Ile Ala		45
	50	55
Ile Val Tyr Ile Gly Val Leu Asp Ser Glu Ser Ser Lys Ile Leu Glu		60
	65	70
Arg Leu Ile Ser Tyr Met Ser Cys Ile Tyr Ser Glu Ser Gln Met Tyr		75
	85	90
Leu Arg Phe Phe Met Gly Lys Asn Val Asn Gln Ser Ala Val Leu Ser		95
	100	105
Lys Leu His Val Glu Asn Leu His Ile Arg Cys Gly Phe Phe Ser Glu		110
	115	120
Asp Ala Val Pro Glu Ser Glu Pro Phe Asp Leu Ser Ile Tyr Val His		125
	130	135
Thr Asp Arg Ser Cys Pro Leu Pro Thr Lys Lys Arg Ser Ser Ser Trp		140
145	150	155
Glu Leu Gln Thr Val Glu Leu Pro Glu Ser Ile Tyr Pro Gln Ser Glu		160
	165	170
Phe Leu Leu Met Arg Pro Arg Met Leu Ser		175
	180	185

<210>499

<211>136

<212>PRT

<213>Chlamydia pneumoniae

<400>499

Leu Leu Glu Asn Asn Arg Phe Phe Leu Phe Phe Lys Val Lys Tyr Phe		
1	5	10
Leu Lys Asp Ser Phe Leu Met Ser Tyr Tyr Phe Ser Leu Trp Tyr Leu		15

20 25
 Lys Val Gln Gln His Phe Gln Ala Ala Phe Asp Phe Thr Arg Ser Leu
 35 40 45
 Cys Ser Arg Ile Ser Asn Phe Ala Leu Gly Val Ile Ala Leu Leu Pro
 50 55 60
 Ile Ile Gly Gln Leu Tyr Val Gly Leu Asp Trp Leu Leu Ser Arg Ile
 65 70 75 80
 Lys Lys Pro Glu Phe Pro Ser Asp Val Asp Gln Ile Val Arg Val Glu
 85 90 95
 His Val Val Gly His Asp His Arg Ser Arg Val Glu Asp Ile Leu Lys
 100 105 110
 Arg Gln Arg Leu Ser Leu Glu Pro Arg Asp Glu Gly Lys Val Arg Gly
 115 120 125
 Asp Leu Pro Ser Ala Pro Phe Phe
 130 135
 <210>500
 <211>940
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>500
 Thr Ser Met Arg Phe Phe Cys Phe Gly Met Leu Leu Pro Phe Thr Phe
 1 5 10 15
 Val Leu Ala Asn Glu Gly Leu Gln Leu Pro Leu Glu Thr Tyr Ile Thr
 20 25 30
 Leu Ser Pro Glu Tyr Gln Ala Ala Pro Gln Val Gly Phe Thr His Asn
 35 40 45
 Gln Asn Gln Asp Leu Ala Ile Val Gly Asn His Asn Asp Phe Ile Leu
 50 55 60
 Asp Tyr Lys Tyr Tyr Arg Ser Asn Gly Gly Ala Leu Thr Cys Lys Asn
 65 70 75 80
 Leu Leu Ile Ser Glu Asn Ile Gly Asn Val Phe Phe Glu Lys Asn Val
 85 90 95
 Cys Pro Asn Ser Gly Gly Ala Ile Tyr Ala Ala Gln Asn Cys Thr Ile
 100 105 110
 Ser Lys Asn Gln Asn Tyr Ala Phe Thr Thr Asn Leu Val Ser Asp Asn
 115 120 125
 Pro Thr Ala Thr Ala Gly Ser Leu Leu Gly Gly Ala Leu Phe Ala Ile
 130 135 140
 Asn Cys Ser Ile Thr Asn Asn Leu Gly Gln Gly Thr Phe Val Asp Asn
 145 150 155 160
 Leu Ala Leu Asn Lys Gly Gly Ala Leu Tyr Thr Glu Thr Asn Leu Ser
 165 170 175
 Ile Lys Asp Asn Lys Gly Pro Ile Ile Ile Lys Gln Asn Arg Ala Leu
 180 185 190
 Asn Ser Asp Ser Leu Gly Gly Gly Ile Tyr Ser Gly Asn Ser Leu Asn
 195 200 205
 Ile Glu Gly Asn Ser Gly Ala Ile Gln Ile Thr Ser Asn Ser Ser Gly
 210 215 220
 Ser Gly Gly Gly Ile Phe Ser Thr Gln Thr Leu Thr Ile Ser Ser Asn
 225 230 235 240
 Lys Lys Leu Ile Glu Ile Ser Glu Asn Ser Ala Phe Ala Asn Asn Tyr
 245 250 255
 Gly Ser Asn Phe Asn Pro Gly Gly Gly Gly Leu Thr Thr Thr Phe Cys
 260 265 270
 Thr Ile Leu Asn Asn Arg Glu Gly Val Leu Phe Asn Asn Asn Gln Ser
 275 280 285
 Gln Ser Asn Gly Gly Ala Ile His Ala Lys Ser Ile Ile Ile Lys Glu
 290 295 300
 Asn Gly Pro Val Tyr Phe Leu Asn Asn Thr Ala Thr Arg Gly Gly Ala
 305 310 315 320
 Leu Leu Asn Leu Ser Ala Gly Ser Gly Asn Gly Ser Phe Ile Leu Ser
 325 330 335
 Ala Asp Asn Gly Asp Ile Ile Phe Asn Asn Thr Ala Ser Lys His
 340 345 350

Ala	Leu	Asn	Pro	Pro	Tyr	Arg	Asn	Ala	Ile	His	Ser	Trp	Pro	Asn	Met	355	360	365
Asn	Leu	Gln	Ile	Gly	Ala	Arg	Pro	Gly	Tyr	Arg	Val	Leu	Phe	Tyr	Asp	370	375	380
Pro	Ile	Glu	His	Glu	Leu	Pro	Ser	Ser	Phe	Pro	Ile	Leu	Phe	Asn	Phe	385	390	395
Glu	Thr	Gly	His	Thr	Gly	Thr	Val	Leu	Phe	Ser	Gly	Glu	His	Val	His	405	410	415
Gln	Asn	Phe	Thr	Asp	Glu	Met	Asn	Phe	Phe	Ser	Tyr	Leu	Arg	Asn	Thr	420	425	430
Ser	Glu	Leu	Arg	Gln	Gly	Val	Leu	Ala	Val	Glu	Asp	Gly	Ala	Gly	Leu	435	440	445
Ala	Cys	Tyr	Lys	Phe	Phe	Gln	Arg	Gly	Gly	Thr	Leu	Leu	Leu	Gly	Gln	450	455	460
Gly	Ala	Val	Ile	Thr	Thr	Ala	Gly	Thr	Ile	Pro	Thr	Pro	Ser	Ser	Thr	465	470	475
Pro	Thr	Thr	Val	Gly	Ser	Thr	Ile	Thr	Leu	Asn	His	Ile	Ala	Ile	Asp	485	490	495
Leu	Pro	Ser	Ile	Leu	Ser	Phe	Gln	Ala	Gln	Ala	Pro	Lys	Ile	Trp	Ile	500	505	510
Tyr	Pro	Thr	Lys	Thr	Gly	Ser	Thr	Tyr	Thr	Glu	Asp	Ser	Asn	Pro	Thr	515	520	525
Ile	Thr	Ile	Ser	Gly	Thr	Leu	Thr	Leu	Arg	Asn	Ser	Asn	Asn	Glu	Asp	530	535	540
Pro	Tyr	Asp	Ser	Leu	Asp	Leu	Ser	His	Ser	Leu	Glu	Lys	Val	Pro	Leu	545	550	555
Leu	Tyr	Ile	Val	Asp	Val	Ala	Ala	Gln	Lys	Ile	Asn	Ser	Ser	Gln	Leu	565	570	575
Asp	Leu	Ser	Thr	Leu	Asn	Ser	Gly	Glu	His	Tyr	Gly	Tyr	Gln	Gly	Ile	580	585	590
Trp	Ser	Thr	Tyr	Trp	Val	Glu	Thr	Thr	Ile	Thr	Asn	Pro	Thr	Ser		595	600	605
Leu	Leu	Gly	Ala	Asn	Thr	Lys	His	Lys	Leu	Leu	Tyr	Ala	Asn	Trp	Ser	610	615	620
Pro	Leu	Gly	Tyr	Arg	Pro	His	Pro	Glu	Arg	Arg	Gly	Glu	Phe	Ile	Thr	625	630	635
Asn	Ala	Leu	Trp	Gln	Ser	Ala	Tyr	Thr	Ala	Leu	Ala	Gly	Leu	His	Ser	645	650	655
Leu	Ser	Ser	Trp	Asp	Glu	Glu	Lys	Gly	His	Ala	Ala	Ser	Leu	Gln	Gly	660	665	670
Ile	Gly	Leu	Leu	Val	His	Gln	Lys	Asp	Lys	Asn	Gly	Phe	Lys	Gly	Phe	675	680	685
Arg	Ser	His	Met	Thr	Gly	Tyr	Ser	Ala	Thr	Thr	Glu	Ala	Thr	Ser	Ser	690	695	700
Gln	Ser	Pro	Asn	Phe	Ser	Leu	Gly	Phe	Ala	Gln	Phe	Phe	Ser	Lys	Ala	705	710	715
Lys	Glu	His	Glu	Ser	Gln	Asn	Ser	Thr	Ser	Ser	His	His	Tyr	Phe	Ser	725	730	735
Gly	Met	Cys	Ile	Glu	Asn	Thr	Leu	Phe	Lys	Glu	Trp	Ile	Arg	Leu	Ser	740	745	750
Val	Ser	Leu	Ala	Tyr	Met	Phe	Thr	Ser	Glu	His	Thr	His	Thr	Met	Tyr	755	760	765
Gln	Gly	Leu	Leu	Glu	Gly	Asn	Ser	Gln	Gly	Ser	Phe	His	Asn	His	Thr	770	775	780
Leu	Ala	Gly	Ala	Leu	Ser	Cys	Val	Phe	Leu	Pro	Gln	Pro	His	Gly	Glu	785	790	795
Ser	Leu	Gln	Ile	Tyr	Pro	Phe	Ile	Thr	Ala	Leu	Ala	Ile	Arg	Gly	Asn	805	810	815
Leu	Ala	Ala	Phe	Gln	Glu	Ser	Gly	Asp	His	Ala	Arg	Glu	Phe	Ser	Leu	820	825	830
His	Arg	Pro	Leu	Thr	Asp	Val	Ser	Leu	Pro	Val	Gly	Ile	Arg	Ala	Ser	835	840	845
Trp	Lys	Asn	His	His	Arg	Val	Pro	Leu	Val	Trp	Leu	Thr	Glu	Ile	Ser	850	855	860

Tyr Arg Ser Thr Leu Tyr Arg Gln Asp Pro Glu Leu His Lys Leu
 865 870 875 880
 Leu Ile Ser Gln Gly Thr Trp Thr Thr Gln Ala Thr Pro Val Thr Tyr
 885 890 895
 Asn Ala Leu Gly Ile Lys Val Lys Asn Thr Met Gln Val Phe Pro Lys
 900 905 910
 Val Thr Leu Ser Leu Asp Tyr Ser Ala Asp Ile Ser Ser Ser Thr Leu
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 Ser His Tyr Leu Asn Val Ala Ser Arg Met Arg Phe
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 Leu Val Ser Lys Thr Pro Pro Lys Phe Leu Phe Tyr Leu Gly Asn Phe
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 Thr Ala Cys Met Phe Gly Met Thr Pro Ala Val Tyr Ser Leu Gln Thr
 35 40 45
 Asp Ser Leu Glu Lys Phe Ala Leu Glu Arg Asp Glu Glu Phe Arg Thr
 50 55 60
 Ser Phe Pro Leu Leu Asp Ser Leu Ser Thr Leu Thr Gly Phe Ser Pro
 65 70 75 80
 Ile Thr Thr Phe Val Gly Asn Arg His Asn Ser Ser Gln Asp Ile Val
 85 90 95
 Leu Ser Asn Tyr Lys Ser Ile Asp Asn Ile Leu Leu Leu Trp Thr Ser
 100 105 110
 Ala Gly Gly Ala Val Ser Cys Asn Asn Phe Leu Leu Ser Asn Val Glu
 115 120 125
 Asp His Ala Phe Phe Ser Lys Asn Leu Ala Ile Gly Thr Gly Gly Ala
 130 135 140
 Ile Ala Cys Gln Gly Ala Cys Thr Ile Thr Lys Asn Arg Gly Pro Leu
 145 150 155 160
 Ile Phe Phe Ser Asn Arg Gly Leu Asn Asn Ala Ser Thr Gly Gly Glu
 165 170 175
 Thr Arg Gly Gly Ala Ile Ala Cys Asn Gly Asp Phe Thr Ile Ser Gln
 180 185 190
 Asn Gln Gly Thr Phe Tyr Phe Val Asn Asn Ser Val Asn Asn Trp Gly
 195 200 205
 Gly Ala Leu Ser Thr Asn Gly His Cys Arg Ile Gln Ser Asn Arg Ala
 210 215 220
 Pro Leu Leu Phe Phe Asn Asn Thr Ala Pro Ser Gly Gly Gly Ala Leu
 225 230 235 240
 Arg Ser Glu Asn Thr Thr Ile Ser Asp Asn Thr Arg Pro Ile Tyr Phe
 245 250 255
 Lys Asn Asn Cys Gly Asn Asn Gly Gly Ala Ile Gln Thr Ser Val Thr
 260 265 270
 Val Ala Ile Lys Asn Asn Ser Gly Ser Val Ile Phe Asn Asn Thr
 275 280 285
 Ala Leu Ser Gly Ser Ile Asn Ser Gly Asn Gly Ser Gly Gly Ala Ile
 290 295 300
 Tyr Thr Thr Asn Leu Ser Ile Asp Asp Asn Pro Gly Thr Ile Leu Phe
 305 310 315 320
 Asn Asn Asn Tyr Cys Ile Arg Asp Gly Gly Ala Ile Cys Thr Gln Phe
 325 330 335
 Leu Thr Ile Lys Asn Ser Gly His Val Tyr Phe Thr Asn Asn Gln Gly
 340 345 350
 Asn Trp Gly Gly Ala Leu Met Leu Leu Gln Asp Ser Thr Cys Leu Leu
 355 360 365
 Phe Ala Glu Gln Gly Asn Ile Ala Phe Gln Asn Asn Glu Val Phe Leu
 370 375 380
 Thr Thr Phe Gly Arg Tyr Asn Ala Ile His Cys Thr Pro Asn Ser Asn

385	Leu	Gln	Leu	Gly	Ala	Asn	Lys	Gly	Tyr	Thr	Thr	Ala	Phe	Phe	Asp	Pro
					405					410						415
Ile	Glu	His	Gln	His	Pro	Thr	Thr	Asn	Pro	Leu	Ile	Phe	Asn	Pro	Asn	
			420					425					430			
Ala	Asn	His	Gln	Gly	Thr	Ile	Leu	Phe	Ser	Ser	Ala	Tyr	Ile	Pro	Glu	
		435					440					445				
Ala	Ser	Asp	Tyr	Glu	Asn	Asn	Phe	Ile	Ser	Ser	Ser	Lys	Asn	Thr	Ser	
	450					455					460					
Glu	Leu	Arg	Asn	Gly	Val	Leu	Ser	Ile	Glu	Asp	Arg	Ala	Gly	Trp	Gln	
465					470					475					480	
Phe	Tyr	Lys	Phe	Thr	Gln	Lys	Gly	Gly	Ile	Leu	Lys	Leu	Gly	His	Ala	
				485					490						495	
Ala	Ser	Ile	Ala	Thr	Thr	Ala	Asn	Ser	Glu	Thr	Pro	Ser	Thr	Ser	Val	
			500					505					510			
Gly	Ser	Gln	Val	Ile	Ile	Asn	Asn	Leu	Ala	Ile	Asn	Leu	Pro	Ser	Ile	
	515						520					525				
Leu	Ala	Lys	Gly	Lys	Ala	Pro	Thr	Leu	Trp	Ile	Arg	Pro	Leu	Gln	Ser	
	530					535					540					
Ser	Ala	Pro	Phe	Thr	Glu	Asp	Asn	Asn	Pro	Thr	Ile	Thr	Leu	Ser	Gly	
545					550					555					560	
Pro	Leu	Thr	Leu	Leu	Asn	Glu	Glu	Asn	Arg	Asp	Pro	Tyr	Asp	Ser	Ile	
				565					570						575	
Asp	Leu	Ser	Glu	Pro	Leu	Gln	Asn	Ile	His	Leu	Leu	Ser	Leu	Ser	Asp	
			580					585					590			
Val	Thr	Ala	Arg	His	Ile	Asn	Thr	Asp	Asn	Phe	His	Pro	Glu	Ser	Leu	
	595						600					605				
Asn	Ala	Thr	Glu	His	Tyr	Gly	Tyr	Gln	Gly	Ile	Trp	Ser	Pro	Tyr	Trp	
	610					615					620					
Val	Glu	Thr	Ile	Thr	Thr	Asn	Asn	Ala	Ser	Ile	Glu	Thr	Ala	Asn		
625					630					635				640		
Thr	Leu	Tyr	Arg	Ala	Leu	Tyr	Ala	Asn	Trp	Thr	Pro	Leu	Gly	Tyr	Lys	
			645						650					655		
Val	Asn	Pro	Glu	Tyr	Gln	Gly	Asp	Leu	Ala	Thr	Thr	Pro	Leu	Trp	Gln	
			660				665						670			
Ser	Phe	His	Thr	Met	Phe	Ser	Leu	Leu	Arg	Ser	Tyr	Asn	Arg	Thr	Gly	
	675					680					685					
Asp	Ser	Asp	Ile	Glu	Arg	Pro	Phe	Leu	Glu	Ile	Gln	Gly	Ile	Ala	Asp	
	690				695						700					
Gly	Leu	Phe	Val	His	Gln	Asn	Ser	Ile	Pro	Gly	Ala	Pro	Gly	Phe	Arg	
705					710					715				720		
Ile	Gln	Ser	Thr	Gly	Tyr	Ser	Leu	Gln	Ala	Ser	Ser	Glu	Thr	Ser	Leu	
			725						730					735		
His	Gln	Lys	Ile	Ser	Leu	Gly	Phe	Ala	Gln	Phe	Phe	Thr	Arg	Thr	Lys	
			740					745					750			
Glu	Ile	Gly	Ser	Ser	Asn	Asn	Val	Ser	Ala	His	Asn	Thr	Val	Ser	Ser	
		755					760					765				
Leu	Tyr	Val	Glu	Leu	Pro	Trp	Phe	Gln	Glu	Ala	Phe	Ala	Thr	Ser	Thr	
	770					775					780					
Val	Leu	Ala	Tyr	Gly	Tyr	Gly	Asp	His	His	Leu	His	Ser	Leu	His	Pro	
785					790					795					800	
Ser	His	Gln	Glu	Gln	Ala	Glu	Gly	Thr	Cys	Tyr	Ser	His	Thr	Leu	Ala	
			805						810					815		
Ala	Ala	Ile	Gly	Cys	Ser	Phe	Pro	Trp	Gln	Gln	Lys	Ser	Tyr	Leu	His	
			820					825					830			
Leu	Ser	Pro	Phe	Val	Gln	Ala	Ile	Ala	Ile	Arg	Ser	His	Gln	Thr	Ala	
	835						840					845				
Phe	Glu	Glu	Ile	Gly	Asp	Asn	Pro	Arg	Lys	Phe	Val	Ser	Gln	Lys	Pro	
	850					855					860					
Phe	Tyr	Asn	Leu	Thr	Leu	Pro	Leu	Gly	Ile	Gln	Gly	Lys	Trp	Gln	Ser	
865					870					875					880	
Lys	Phe	His	Val	Pro	Thr	Glu	Trp	Thr	Leu	Glu	Leu	Ser	Tyr	Glu	Pro	
			885						890					895		
Val	Leu	Tyr	Gln	Gln	Asn	Pro	Gln	Ile	Gly	Val	Thr	Leu	Leu	Ala	Ser	

900 905
 Gly Gly Ser Trp Asp Ile Leu Gly His Asn Tyr Val Arg Asn Ala Leu
 915 920 925
 Gly Tyr Lys Val His Asn Gln Thr Ala Leu Phe Arg Ser Leu Asp Leu
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 Phe Leu Asp Tyr Gln Gly Ser Val Ser Ser Ser Thr Ser Thr His His
 945 950 955 960
 Leu Gln Ala Gly Ser Thr Leu Lys Phe
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<212>PRT

<213>Chlamydia pneumoniae

<400>502

Arg Cys Pro Val Ala Leu Asp Ala Ala Val Ser Ile Gly Gly Glu Gly
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 Ser Ser Pro Val Val Asp Gly Ile Val Asp Lys Val Glu Ser Pro Leu
 20 25 30
 Ile Leu Arg Asn Arg Glu Val Ser Ile Thr Gly Asn Arg Thr Pro Thr
 35 40 45
 Ser Phe Ser Ser Cys Thr Arg Ile Val Lys Thr Ser Ile Ala Glu Lys
 50 55 60
 Asn Lys Gly Ser Ser Ile Leu Arg Asp Cys Ala Gly Ser Leu Ala Ser
 65 70 75 80
 Asn Arg Ala Ser Ser Pro Asn Arg Glu Ile Phe Thr Glu Glu Gly Met
 85 90 95
 Val Phe Asn Ile
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<211>275

<212>PRT

<213>Chlamydia pneumoniae

<400>503

Ile Tyr Lys Leu Leu Asp Asn Lys Leu Met Ile Phe Tyr Asp Lys Leu
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 Tyr Phe His Ile Lys Val Trp Met Phe Met Arg Pro Ile Cys Leu Ser
 20 25 30
 Ile Leu Ser Thr Ala Leu Cys Cys Ser Leu Ser Gly Asn Glu Val Pro
 35 40 45
 Asn Leu Ala Ser Cys Gln Met Ser Arg Lys Asp Ile Ser Ala Phe His
 50 55 60
 Thr Ser Pro Ser Phe Arg Leu Asn Val Thr Pro Glu Pro Leu Val Ser
 65 70 75 80
 Ser Phe Arg Pro Ser Asn Leu Leu Asn Gly Phe Gly His Asp Ile Thr
 85 90 95
 Gln Asp Ile Thr Ile Thr Gly Asn Ser Ile Asn Ser Val Ile Asp Tyr
 100 105 110
 Asn Tyr His Tyr Glu Asp Gly Gly Ile Leu Ala Cys Lys Asn Leu Phe
 115 120 125
 Ile Ser Glu Asn Lys Gly Asn Leu Ser Phe Glu Arg Asn Ser Ser His
 130 135 140
 Ser Ser Gly Gly Ala Leu Tyr Ser Val Arg Glu Cys Trp Ile Ser Lys
 145 150 155 160
 Asn Gln Asn Tyr Ser Phe Ile Ser Asn Ala Ala Ser Leu Ala Thr Thr
 165 170 175
 Thr Thr Ser Gly Phe Gly Gly Ala Ile His Ala Leu Asp Ser Tyr Ile
 180 185 190
 Thr Asn Asn Leu Gly Glu Gly Gln Phe Leu Asp Asn Val Ser Lys Asn
 195 200 205
 Arg Gly Gly Ala Ile Tyr Val Gly Val Ser Leu Ser Ile Thr Asp Asn
 210 215 220
 Leu Gly Pro Ile Val Ile Lys Lys Asn Gln Thr Leu Glu Asp Ser Ser
 225 230 235 240
 Phe Gly Gly Gly Ile Phe Cys Arg Ala Val Asn Ile Glu Arg Asn Tyr

245 250 255
 Gln Asn Ile Gln Ile Asn Asp Asn Ala Ser Gly Gln Gly Val Val Tyr
 260 265 270
 Phe Leu Pro
 275
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 <213>Chlamydia pneumoniae
 <400>504
 Cys Phe Arg Thr Arg Gly Gly Ile Phe Ser Ala Leu Gly Val Ile Ile
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 Ser Ser Asn Lys Glu Ile Ile Glu Ile Ser Asn His Ser Ala Ser Ser
 20 25 30
 Ile Asn Thr Ala Ser Gly Lys Leu Tyr Pro Gly Gly Gly Ile Met
 35 40 45
 Cys Thr Ser Leu Val Ile Glu Asn Asn Pro Lys Gly Leu Ile Phe Asn
 50 55 60
 Asn Lys Thr Ala Ala Leu Ser Gly Gly Ala Ile His Thr Arg Ser Phe
 65 70 75 80
 Ile Phe Gln Asn Asn Gly Pro Thr Ala Phe Ile Asn Asn Ser Ala Thr
 85 90 95
 Ser Gly Gly Ala Leu Ile Asn Leu Ser Gly Ile Gly Ser Thr Pro Gln
 100 105 110
 Asn Phe Phe Leu Ser Ala Asp Tyr Gly Asp Ile Leu Phe Asn Asn Asn
 115 120 125
 Thr Ile Thr Ser Ser Ser Pro Gln Pro Gly Tyr Arg Asn Ala Leu Tyr
 130 135 140
 Ala Ala Pro Gly Ile Asn Leu Lys Leu Gly Ala Arg Gln Gly Tyr Lys
 145 150 155 160
 Ile Leu Phe Tyr Asp Pro Ile Asp His Asp Gln Thr Thr Thr Asp Pro
 165 170 175
 Ile Val Phe Asn Tyr Glu Pro His His Leu Gly Thr Val Leu Phe Ser
 180 185 190
 Gly Ile Asn Val Asp Ser Asn Ala Thr Asn Pro Leu Asn Phe Leu Ser
 195 200 205
 Lys Phe Ser Asn Ser Ser Arg Leu Glu Arg Gly Val Leu Ala Ile Glu
 210 215 220
 Asp Arg Ala Ala Ile Ser Cys Lys Thr Leu Ser Gln Thr Gly Gly Ile
 225 230 235 240
 Leu Arg Leu Gly Asn Ala Ala Leu Ile Arg Thr Lys Gly Pro Gly Ser
 245 250 255
 Ser Ile Asn Phe Asn Ala Ile Ala Ile Asn Leu Pro Ser Ile Leu Gln
 260 265 270
 Ser Glu Ala Ser Ala Pro Lys Phe Trp Ile Tyr Pro Thr Leu Thr Gly
 275 280 285
 Ser Thr Tyr Ser Glu Asp Thr Ser Ser Thr Ile Thr Leu Ser Gly Pro
 290 295 300
 Leu Thr Phe Leu Asn Asp Glu Asn Glu Asn Pro Tyr Asp Ser Leu Asp
 305 310 315 320
 Leu Ser Glu Pro Arg Lys Asp Ile Pro Pro Pro Leu Pro Pro Arg Cys
 325 330 335
 Asp Cys Lys Lys Asn Arg Tyr Phe Glu Ser His Cys Arg Ser His Glu
 340 345 350
 Leu Arg

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 <213>Chlamydia pneumoniae
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 Ile Ser Leu Asn Leu Glu Arg Ile Ser Pro Leu Leu Tyr Leu Leu Asp
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 Val Thr Ala Lys Lys Ile Asp Thr Ser Asn Leu Ile Val Glu Ala Met

20 25
 Asn Leu Asp Glu His Tyr Gly Tyr Gln Gly Ile Trp Ser Pro Tyr Trp
 35 40 45
 Met Glu Thr Thr Thr Thr Thr Ser Ser Thr Val Pro Glu Gln Thr Asn
 50 55 60
 Thr Asn His Arg Gln Leu Tyr Val Asp Trp Thr Pro Val Gly Tyr Arg
 65 70 75 80
 Pro Asn Pro Glu Arg His Gly Glu Phe Ile Ala Asn Thr Leu Trp Gln
 85 90 95
 Ser Ala Tyr Asn Ala Leu Leu Gly Ile Arg Ile Leu Pro Pro Gln Asn
 100 105 110
 Leu Lys Glu His Asp Leu Glu Ala Ser Leu Gln Gly Leu Gly Leu Leu
 115 120 125
 Ile Asn Gln His Asn Arg Glu Gly Arg Lys Gly Phe Arg Asn His Thr
 130 135 140
 Thr Gly Tyr Ala Ala Thr Thr Ser Ala Lys Thr Ala Ala Arg His Ser
 145 150 155 160
 Phe Ser Leu Gly Phe Ala Gln Met Phe Ser Lys Thr Arg Glu Arg Gln
 165 170 175
 Ser Pro Ser Thr Thr Ser Ser His Asn Tyr Phe Ala Gly Leu Arg Phe
 180 185 190
 Asp Ser Leu Leu Phe Arg Asp Phe Ile Ser Thr Gly Leu Ser Leu Gly
 195 200 205
 Tyr Ser Tyr Gly Asp His His Met Leu Cys His Tyr Thr Glu Ile Leu
 210 215 220
 Lys Gly Ser Ser Lys Ala Phe Phe Asn Asn His Thr Leu Val Ala Ser
 225 230 235 240
 Leu Asp Cys Thr Phe Leu Pro Ala Arg Ile Thr Arg Thr Leu Glu Leu
 245 250 255
 Gln Pro Phe Ile Ser Ala Ile Ala Leu Arg Cys Ser Gln Ala Ser Phe
 260 265 270
 Gln Glu Thr Gly Asp His Ile Arg Lys Phe His Pro Lys His Pro Leu
 275 280 285
 Thr Asp Leu Ser Ser Pro Ile Gly Phe Arg Ser Glu Trp Lys Thr Ser
 290 295 300
 His His Ile Pro Met Leu Trp Thr Thr Glu Ile Ser Tyr Val Pro Thr
 305 310 315 320
 Leu Tyr Arg Lys Asn Pro Glu Met Phe Thr Thr Leu Leu Ile Ser Asn
 325 330 335
 Gly Thr Trp Thr Thr Gln Ala Thr Pro Val Ser Tyr Asn Ser Val Ala
 340 345 350
 Ala Lys Ile Lys Asn Thr Ser Gln Leu Phe Ser Arg Val Thr Leu Ser
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 Leu Asp Tyr Ser Ala Gln Val Ser Ser Ser Thr Val Gly Gln Tyr Leu
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 Lys Ala Glu Ser His Cys Thr Phe
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<211>822

<212>PRT

<213>Chlamydia pneumoniae

<400>506

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 Ala Leu Ile Leu Gly Lys Thr Thr Ile Leu Leu Asn Ala Thr Pro Leu
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 Ser Asp Tyr Phe Asp Asn Gln Ala Asn Gln Leu Thr Thr Leu Phe Pro
 35 40 45
 Leu Ile Asp Thr Leu Thr Asn Met Thr Pro Tyr Ser His Arg Ala Thr
 50 55 60
 Leu Phe Gly Val Arg Asp Asp Thr Asn Gln Asp Ile Val Leu Asp His
 65 70 75 80
 Gln Asn Ser Ile Glu Ser Trp Phe Glu Asn Phe Ser Gln Asp Gly Gly
 85 90 95

Ala	Leu	Ser	Cys	Lys	Ser	Leu	Ala	Ile	Thr	Asn	Thr	Lys	Asn	Gln	Ile		
			100					105					110				
Leu	Phe	Leu	Asn	Ser	Phe	Ala	Ile	Lys	Arg	Ala	Gly	Ala	Met	Tyr	Val		
		115					120					125					
Asn	Gly	Asn	Phe	Asp	Leu	Ser	Glu	Asn	His	Gly	Ser	Ile	Ile	Phe	Ser		
	130					135					140						
Gly	Asn	Leu	Ser	Phe	Pro	Asn	Ala	Ser	Asn	Phe	Ala	Asp	Thr	Cys	Thr		
	145				150					155					160		
Gly	Gly	Ala	Val	Leu	Cys	Ser	Lys	Asn	Val	Thr	Ile	Ser	Lys	Asn	Gln		
			165						170					175			
Arg	Thr	Ala	Tyr	Phe	Ile	Asn	Asn	Lys	Ala	Lys	Ser	Ser	Gly	Gly	Ala		
		180						185					190				
Ile	Gln	Ala	Ala	Ile	Ile	Asn	Ile	Lys	Asp	Asn	Thr	Gly	Pro	Cys	Leu		
	195					200						205					
Phe	Phe	Asn	Asn	Ala	Ala	Gly	Xaa	Thr	Ala	Gly	Gly	Ala	Leu	Phe	Ala		
	210					215					220						
Asn	Ala	Cys	Arg	Ile	Glu	Asn	Asn	Ser	Gln	Pro	Ile	Tyr	Phe	Leu	Asn		
	225				230					235					240		
Asn	Gln	Ser	Gly	Leu	Gly	Gly	Ala	Ile	Arg	Val	His	Gln	Glu	Cys	Ile		
			245						250					255			
Leu	Thr	Lys	Asn	Thr	Gly	Ser	Val	Ile	Phe	Asn	Asn	Asn	Phe	Ala	Met		
		260						265					270				
Glu	Ala	Asp	Ile	Ser	Ala	Asn	His	Ser	Ser	Gly	Gly	Ala	Ile	Tyr	Cys		
	275						280					285					
Ile	Ser	Cys	Ser	Ile	Lys	Asp	Asn	Pro	Gly	Ile	Ala	Ala	Phe	Asp	Asn		
	290					295					300						
Asn	Thr	Ala	Ala	Arg	Asp	Gly	Gly	Ala	Ile	Cys	Thr	Gln	Ser	Leu	Thr		
	305				310					315					320		
Ile	Gln	Asp	Ser	Gly	Pro	Val	Tyr	Phe	Thr	Asn	Asn	Gln	Gly	Thr	Trp		
			325						330					335			
Gly	Gly	Ala	Ile	Met	Leu	Arg	Gln	Asp	Gly	Ala	Cys	Thr	Leu	Phe	Ala		
		340						345					350				
Asp	Gln	Gly	Asp	Ile	Ile	Phe	Tyr	Asn	Asn	Arg	His	Phe	Lys	Asp	Thr		
	355						360					365					
Phe	Ser	Asn	His	Val	Ser	Val	Asn	Cys	Thr	Arg	Asn	Val	Ser	Leu	Thr		
	370					375					380						
Val	Gly	Ala	Ser	Gln	Gly	His	Ser	Ala	Thr	Phe	Tyr	Asp	Pro	Ile	Leu		
	385				390					395					400		
Gln	Arg	Tyr	Thr	Ile	Gln	Asn	Ser	Ile	Gln	Lys	Phe	Asn	Pro	Asn	Pro		
			405						410					415			
Glu	His	Leu	Gly	Thr	Ile	Leu	Phe	Ser	Ser	Ala	Tyr	Ile	Pro	Asp	Thr		
		420						425					430				
Ser	Thr	Ser	Arg	Asp	Asp	Phe	Ile	Ser	His	Phe	Arg	Asn	His	Ile	Gly		
		435					440					445					
Leu	Tyr	Asn	Gly	Thr	Leu	Ala	Leu	Glu	Asp	Arg	Ala	Glu	Trp	Lys	Val		
	450					455					460						
Tyr	Lys	Phe	Asp	Gln	Phe	Gly	Gly	Thr	Leu	Arg	Leu	Gly	Ser	Arg	Ala		
	465				470					475					480		
Val	Phe	Ser	Thr	Thr	Asp	Glu	Glu	Gln	Ser	Ser	Ser	Ser	Val	Gly	Ser		
			485					490						495			
Val	Ile	Asn	Ile	Asn	Asn	Leu	Ala	Ile	Asn	Leu	Pro	Ser	Ile	Leu	Gly		
		500						505					510				
Asn	Arg	Val	Ala	Pro	Lys	Leu	Trp	Ile	Arg	Pro	Thr	Gly	Ser	Ser	Ala		
		515					520					525					
Pro	Tyr	Ser	Glu	Asp	Asn	Asn	Pro	Ile	Ile	Asn	Leu	Ser	Gly	Pro	Leu		
	530					535					540						
Ser	Leu	Leu	Asp	Asp	Glu	Asn	Leu	Asp	Pro	Tyr	Asp	Thr	Ala	Asp	Leu		
	545				550					555					560		
Ala	Gln	Pro	Ile	Ala	Glu	Val	Pro	Leu	Leu	Tyr	Leu	Leu	Asp	Val	Thr		
			565						570					575			
Ala	Lys	His	Ile	Asn	Thr	Asp	Asn	Phe	Tyr	Pro	Glu	Gly	Leu	Asn	Thr		
		580						585					590				
Thr	Gln	His	Tyr	Gly	Tyr	Gln	Gly	Val	Trp	Ser	Pro	Tyr	Trp	Ile	Glu		
		595					600						605				

Thr Ile Thr Thr Ser Asp Thr Ser Ser Glu Asp Thr Val Thr Leu
 610 615 620
 His Arg Gln Leu Tyr Gly Asp Trp Thr Pro Thr Gly Tyr Lys Val Asn
 625 630 635 640
 Pro Glu Asn Lys Gly Asp Ile Ala Leu Ser Ala Phe Trp Gln Ser Phe
 645 650 655
 His Asn Leu Phe Ala Thr Leu Arg Tyr Gln Thr Gln Gln Gly Gln Ile
 660 665 670
 Ala Pro Thr Ala Ser Gly Glu Ala Thr Arg Leu Phe Val His Gln Asn
 675 680 685
 Ser Asn Asn Asp Ala Lys Gly Phe His Met Glu Ala Thr Gly Tyr Ser
 690 695 700
 Leu Gly Thr Thr Ser Asn Thr Ala Ser Asn His Ser Phe Gly Val Asn
 705 710 715 720
 Phe Ser Gln Leu Phe Ser Asn Leu Tyr Glu Ser His Ser Asp Asn Ser
 725 730 735
 Val Ala Ser His Thr Thr Thr Val Ala Leu Gln Ile Asn Asn Pro Trp
 740 745 750
 Leu Gln Glu Arg Phe Ser Thr Ser Ala Ser Leu Ala Tyr Ser Tyr Ser
 755 760 765
 Asn His His Ile Lys Ala Ser Gly Tyr Ser Gly Lys Ile Gln Thr Glu
 770 775 780
 Gly Lys Cys Tyr Ser Thr Thr Leu Arg Gly Gly Ser Leu Leu Leu Ser
 785 790 795 800
 Ile Ser Thr Met Ala Ile Thr Thr Ser Pro Leu His Ser Phe Tyr Pro
 805 810 815
 Ser Asn Cys Arg Ser Phe
 820

<210>507

<211>155

<212>PRT

<213>Chlamydia pneumoniae

<400>507

Gly Ala Ala Leu Ser Cys Ser Leu Ser Leu Gln Trp Arg Ser Arg Pro
 1 5 10 15
 Leu His Phe Thr Pro Phe Ile Gln Ala Ile Ala Val Arg Ser Asn Gln
 20 25 30
 Thr Ala Phe Gln Glu Ser Gly Asp Lys Ala Arg Lys Phe Ser Val His
 35 40 45
 Lys Pro Leu Tyr Asn Leu Thr Val Pro Leu Gly Ile Gln Ser Ala Trp
 50 55 60
 Glu Ser Lys Phe Arg Leu Pro Thr Tyr Trp Asn Ile Glu Leu Ala Tyr
 65 70 75 80
 Gln Pro Val Leu Tyr Gln Gln Asn Pro Glu Val Asn Val Ser Leu Glu
 85 90 95
 Ser Ser Gly Ser Ser Trp Leu Leu Ser Gly Thr Thr Leu Ala Arg Asn
 100 105 110
 Ala Ile Ala Phe Lys Gly Arg Asn Gln Ile Phe Ile Phe Pro Lys Leu
 115 120 125
 Ser Val Phe Leu Asp Tyr Gln Gly Ser Val Ser Ser Ser Thr Thr Thr
 130 135 140
 His Tyr Leu His Ala Gly Thr Thr Phe Lys Phe
 145 150 155

<210>508

<211>778

<212>PRT

<213>Chlamydia pneumoniae

<400>508

Glu Val Phe Met Ala Ser Gly Ile Gly Gly Ser Ser Gly Leu Gly Lys
 1 5 10 15
 Ile Pro Pro Lys Asp Asn Gly Asp Arg Ser Arg Ser Pro Ser Pro Lys
 20 25 30
 Gly Glu Leu Gly Ser His Glu Ile Ser Leu Pro Pro Gln Glu His Gly
 35 40 45

Glu	Glu	Gly	Ala	Ser	Gly	Ser	Ser	His	Ile	His	Ser	Ser	Ser	Ser	Phe
	50					55					60				
Leu	Pro	Glu	Asp	Gln	Glu	Ser	Gln	Ser	Ser	Ser	Ser	Ala	Ala	Ser	Ser
65					70					75					80
Pro	Gly	Phe	Phe	Ser	Arg	Val	Arg	Ser	Gly	Val	Asp	Arg	Ala	Leu	Lys
				85					90					95	
Ser	Phe	Gly	Asn	Phe	Phe	Ser	Ala	Glu	Ser	Thr	Ser	Gln	Ala	Arg	Glu
			100					105					110		
Thr	Arg	Gln	Ala	Phe	Val	Arg	Leu	Ser	Lys	Thr	Ile	Thr	Ala	Asp	Glu
		115					120					125			
Arg	Arg	Asp	Val	Asp	Ser	Ser	Ser	Ala	Ala	Ala	Thr	Glu	Ala	Arg	Val
	130					135					140				
Ala	Glu	Asp	Ala	Ser	Val	Ser	Gly	Glu	Asn	Pro	Ser	Gln	Gly	Val	Pro
145					150					155					160
Glu	Thr	Ser	Ser	Gly	Pro	Glu	Pro	Gln	Arg	Leu	Phe	Ser	Leu	Pro	Ser
				165					170					175	
Val	Lys	Lys	Gln	Ser	Gly	Leu	Gly	Arg	Leu	Val	Gln	Thr	Val	Arg	Asp
			180					185					190		
Arg	Ile	Val	Leu	Pro	Ser	Gly	Ala	Pro	Pro	Thr	Asp	Ser	Glu	Pro	Leu
	195						200					205			
Ser	Leu	Tyr	Glu	Leu	Asn	Leu	Arg	Leu	Ser	Ser	Leu	Arg	Gln	Glu	Leu
	210					215					220				
Ser	Asp	Ile	Gln	Ser	Asn	Asp	Gln	Leu	Thr	Pro	Glu	Glu	Lys	Ala	Glu
225					230					235					240
Ala	Thr	Val	Thr	Ile	Gln	Gln	Leu	Ile	Gln	Ile	Thr	Glu	Phe	Gln	Cys
				245					250					255	
Gly	Tyr	Met	Glu	Ala	Thr	Gln	Ser	Ser	Val	Ser	Leu	Ala	Glu	Ala	Arg
			260					265					270		
Phe	Lys	Gly	Val	Glu	Thr	Ser	Asp	Glu	Ile	Asn	Ser	Leu	Cys	Ser	Glu
	275						280					285			
Leu	Thr	Asp	Pro	Glu	Leu	Gln	Glu	Leu	Met	Ser	Asp	Gly	Asp	Ser	Leu
	290					295					300				
Gln	Asn	Leu	Leu	Asp	Glu	Thr	Ala	Asp	Asp	Leu	Glu	Ala	Ala	Leu	Ser
305					310					315					320
His	Ala	Arg	Leu	Ser	Phe	Ser	Leu	Asp	Asp	Asn	Pro	Thr	Pro	Ile	Asp
				325					330					335	
Asn	Asn	Pro	Thr	Leu	Ile	Ser	Gln	Glu	Glu	Pro	Ile	Tyr	Glu	Glu	Ile
			340					345					350		
Gly	Gly	Ala	Ala	Asp	Pro	Gln	Arg	Thr	Arg	Glu	Asn	Trp	Ser	Thr	Arg
		355				360						365			
Leu	Trp	Asn	Gln	Ile	Arg	Glu	Ala	Leu	Val	Ser	Leu	Leu	Gly	Met	Ile
	370					375					380				
Leu	Ser	Ile	Leu	Gly	Ser	Ile	Leu	His	Arg	Leu	Arg	Ile	Ala	Arg	His
385					390					395					400
Ala	Ala	Ala	Glu	Ala	Val	Gly	Arg	Cys	Cys	Thr	Cys	Arg	Gly	Glu	Glu
			405						410					415	
Cys	Thr	Ser	Ser	Glu	Glu	Asp	Ser	Met	Ser	Val	Gly	Ser	Pro	Ser	Glu
			420					425					430		
Ile	Asp	Glu	Thr	Glu	Arg	Thr	Gly	Ser	Pro	His	Asp	Val	Pro	Arg	Arg
	435						440					445			
Asn	Gly	Ser	Pro	Arg	Glu	Asp	Ser	Pro	Leu	Met	Asn	Ala	Leu	Val	Gly
	450					455					460				
Trp	Ala	His	Lys	His	Gly	Ala	Lys	Thr	Lys	Glu	Ser	Ser	Glu	Ser	Ser
465					470					475					480
Thr	Pro	Glu	Ile	Ser	Ile	Ser	Ala	Pro	Ile	Val	Arg	Gly	Trp	Ser	Gln
			485						490					495	
Asp	Ser	Ser	Val	Ser	Phe	Ile	Val	Met	Glu	Asp	Asp	His	Ile	Phe	Tyr
			500					505					510		
Asp	Val	Pro	Arg	Arg	Lys	Asp	Gly	Ile	Tyr	Asp	Val	Pro	Ser	Ser	Pro
		515					520					525			
Arg	Trp	Ser	Pro	Ala	Arg	Glu	Leu	Glu	Glu	Asp	Val	Phe	Gly	Asp	Tyr
	530					535					540				
Glu	Val	Pro	Ile	Thr	Ser	Ala	Glu	Pro	Ser	Lys	Asp	Lys	Asn	Ile	Tyr
545					550					555					560

Met Thr Pro Arg Leu Ala Thr Pro Ala Ile Tyr Asp Leu Ser Arg
 565 570 575
 Pro Gly Ser Ser Gly Ser Ser Arg Ser Pro Ser Ser Asp Arg Val Arg
 580 585 590
 Ser Ser Ser Pro Asn Arg Arg Gly Val Pro Leu Pro Pro Val Pro Ser
 595 600 605
 Pro Ala Met Ser Glu Glu Gly Ser Ile Tyr Glu Asp Met Ser Gly Ala
 610 615 620
 Ser Gly Ala Gly Glu Ser Asp Tyr Glu Asp Met Ser Arg Ser Pro Ser
 625 630 635 640
 Pro Arg Gly Asp Leu Asp Glu Pro Ile Tyr Ala Asn Thr Pro Glu Asp
 645 650 655
 Asn Pro Phe Thr Gln Arg Asn Ile Asp Arg Ile Leu Gln Glu Arg Ser
 660 665 670
 Gly Gly Ala Ser Ala Ser Pro Val Glu Pro Ile Tyr Asp Glu Ile Pro
 675 680 685
 Trp Ile His Gly Arg Pro Pro Ala Thr Leu Pro Arg Pro Glu Asn Thr
 690 695 700
 Leu Thr Asn Val Ser Leu Arg Val Ser Pro Gly Phe Gly Pro Glu Val
 705 710 715 720
 Arg Ala Ala Leu Leu Ser Glu Ser Val Ser Ala Val Met Val Glu Ala
 725 730 735
 Glu Ser Ile Val Pro Pro Thr Glu Pro Gly Asp Gly Glu Ser Glu Tyr
 740 745 750
 Leu Glu Pro Leu Gly Gly Leu Val Ala Thr Thr Lys Ile Leu Leu Gln
 755 760 765
 Lys Gly Trp Pro Arg Gly Glu Ser Asn Ala
 770 775

<210>509

<211>511

<212>PRT

<213>Chlamydia pneumoniae

<400>509

Gly Ser Ile Met Ala Val Gly Gly Val Gly Gly Ser Arg Ser Pro Ser
 1 5 10 15
 Pro Ile Pro Pro Asn Arg Arg Asn Ser Glu Asp Gly Lys Val Ser Pro
 20 25 30
 Lys Asp Asn Leu Gly Glu His Thr Val Ser Ser Ser Asp Ser Ser Leu
 35 40 45
 Ala Ser Gln Gly Pro Thr Ile Glu Glu Arg Lys Ala Gln Leu Gly Gly
 50 55 60
 Thr Asp Lys Ile Pro Leu Pro Ser Val Lys Glu Pro Gly Asp Ser Pro
 65 70 75 80
 Thr Ser Gly Arg Ser Gly Val Leu Gln Arg Ile Trp Lys Gly Val Lys
 85 90 95
 Gly Val Phe Lys Lys Thr Pro Gln Ala Arg Pro Glu Val Ser Ser Pro
 100 105 110
 Arg Leu Pro Ser His Val Gln His Gly Gln Arg Leu Pro Gly Leu Glu
 115 120 125
 Gly Phe Arg Asp Arg Ile Gln Lys Arg Ser Glu Asn Pro Glu Ala Asp
 130 135 140
 Leu Gly Lys Met Lys Arg Ser Tyr Ser Asp Gly Asp Leu Asp Arg Val
 145 150 155 160
 Gly His Asp Ser Asn Glu Asp Ser Thr Glu Asp Ser Arg Ser Glu Gly
 165 170 175
 Gly Glu Pro Ser Ser Lys Ser Ser Ser Phe Leu Ser Gly Val Arg Gly
 180 185 190
 Ala Val Ser Lys Val His Gly Ala Leu Gly Asp Ile Lys Gly Lys Phe
 195 200 205
 Gln Arg Ser Ala Ser Glu Asp Asp Leu Thr Thr Gln Gly Glu Asp Ser
 210 215 220
 Ala Gly Asp Thr Val Lys Glu Arg Arg Ser Glu Glu Ala Glu Ala Ser
 225 230 235 240
 Ser Lys Ser Ser Ser Phe Leu Ser Gly Val Arg Gly Ala Thr Ser Thr

250 255
 Val Gln Gly Ala Leu Gly Asp Ala Lys Glu Lys Val Ser Ala Phe Gly
 260 265 270
 Glu Gln Ala Ala Gly Ala Ile Arg Ser Ala Pro Gly Asn Ile Arg Thr
 275 280 285
 Arg Phe Gln Arg Ser Ser Ser Glu Gly Asp Leu Ser Asn Val Asn Lys
 290 295 300
 Ala Ala Lys His Leu Arg Lys Ala Leu Glu Asn Leu Glu Lys Val Ala
 305 310 315 320
 Pro Glu Gln Val Ser Pro Glu Val Ala Ser Arg Val Gln Ser Leu Leu
 325 330 335
 Ala Arg Met Glu Gln Leu Thr His Gln Glu Pro Pro Thr Val Glu Asp
 340 345 350
 Leu Ile Thr Phe Val Glu Ser Asn Val Gly Ser Asp Ser Val Glu Tyr
 355 360 365
 Ala Ser Ile Val Pro Gln Asp Gly Ser Gln Ala Pro Ala Glu Thr Ala
 370 375 380
 Glu Ala Pro Glu Thr Gly Gly Val Glu Gly Ser Ala Ala Gln Gly Ala
 385 390 395 400
 Trp Lys Ala Leu Arg Asp Phe Val Val Ser Ile Phe Gln Ala Val Ala
 405 410 415
 Ser Phe Phe Arg Ala Ile Ala Ser Arg Leu Ser Ser Ala Arg Arg Glu
 420 425 430
 Ser Ala Val Asp Asp Leu Ala Ser Glu Ser Asn Thr Gln Trp Phe Val
 435 440 445
 Glu Gln Glu Gly Val Ser Asn Pro Ser Ala Ala Pro Ser Leu Ser Phe
 450 455 460
 Ala Glu Glu Ile Ala Arg Arg Ala Ala Glu Met Ser Asn Arg Asn Ala
 465 470 475 480
 Gln Ser Leu Glu Lys Leu Glu Ser Gly Asn Val Thr Asp Pro Val Ile
 485 490 495
 Gln Gln Gly Leu Gly Leu Ala Arg Ser Phe Ala Pro Glu Gly Gln
 500 505 510

<210>510

<211>122

<212>PRT

<213>Chlamydia pneumoniae

<400>510

Met Thr Gly Ser Val Thr Leu Pro Asp Ser Asn Phe Ser Arg Leu Trp
 1 5 10 15
 Ala Phe Leu Leu Ile Ser Ala Ala Leu Arg Ala Ile Ser Ser Ala
 20 25 30
 Lys Asp Lys Leu Gly Ala Ala Asp Gly Phe Glu Thr Pro Ser Cys Ser
 35 40 45
 Thr Asn His Cys Val Leu Leu Ser Asp Ala Arg Ser Ser Thr Ala Asp
 50 55 60
 Ser Arg Arg Ala Glu Leu Asn Leu Glu Ala Ile Ala Leu Lys Lys Leu
 65 70 75 80
 Ala Thr Ala Trp Asn Met Leu Thr Thr Lys Ser Arg Asn Ala Phe His
 85 90 95
 Ala Pro Cys Ala Ala Asp Pro Ser Thr Pro Pro Val Ser Gly Ala Ser
 100 105 110
 Ala Val Ser Ala Gly Ala Cys Asp Pro Ser
 115 120

<210>511

<211>598

<212>PRT

<213>Chlamydia pneumoniae

<400>511

Leu Lys Ile Ile Ile Ser Ile Ser Phe Met Ser Thr Ser Pro Ile Ser
 1 5 10 15
 Asn Asp Pro Arg Tyr Leu Ser Leu Ser Asn Ala Thr Glu Lys Thr Ser
 20 25 30
 Leu Leu Ala Asn Ser Arg Ser Leu Ser Pro Val Pro Asn Ser Leu Val

35 40 45
 Pro Ser Asn Pro Glu Asp Thr Gly Leu Arg Lys Ser Ile Phe Thr His
 50 55 60
 Ser Val Thr Leu Phe Ala Gly Leu Val Val Leu Leu Val Ala Val Ser
 65 70 75 80
 Val Val Val Val Ala Leu Thr Val Leu Ala Pro Gly Val Pro Gln Ala
 85 90 95
 Ile Leu Leu Gly Ile Ala Ile Ser Gly Val Gly Ile Gly Gly Phe Ser
 100 105 110
 Ile Met Lys Ser Leu Val Tyr Met Val Arg Asp Tyr Met Ser Pro Arg
 115 120 125
 Met Gln Glu Ser Ser Arg Ile Lys Ser Ala Leu Ala Val Gly Thr Gly
 130 135 140
 Phe Thr Val Met Gly Leu Val Met Lys Val Gly Ala Asn Phe Val Pro
 145 150 155 160
 Gly Gly Tyr Gly Gly Leu Val Gly Ser Leu Gly Ser Ser Ala Tyr Ser
 165 170 175
 Arg Gly Ser Gln Thr Thr Leu Ala Ser Phe Ser His Tyr Ile Tyr Thr
 180 185 190
 Lys Phe Phe Arg Ser Glu Lys Val Ala Lys Gly Glu Lys Leu Thr Glu
 195 200 205
 Ala Glu Thr Ile Lys Glu Ala Lys Lys Leu His Tyr Ile Thr Leu Ser
 210 215 220
 Ile Ala Thr Ile Gly Val Gly Leu Ala Val Leu Gly Ile Leu Leu Ala
 225 230 235 240
 Ile Ala Gly Thr Val Leu Leu Gly Gly Ala Pro Ala Thr Ile Ala Ile
 245 250 255
 Ile Leu Ala Pro Pro Leu Ile Ser Ile Gly Leu Thr Thr Val Leu Gln
 260 265 270
 Thr Ile Leu His Ser Ser Ile Gly Lys Trp Arg Ala Phe Leu Leu Thr
 275 280 285
 Gln Glu Lys Lys Asp Leu Phe Val Asp Thr Ser Leu Lys Asp Ile Arg
 290 295 300
 Leu Glu Lys Leu Pro Pro Ser Glu Val Glu Glu Ser Glu Thr Ser Gln
 305 310 315 320
 Ser Val Ile Glu Val Pro Asp Ser Glu Gly Ile Ala Glu Thr Arg Ile
 325 330 335
 Ser Ala Glu Glu Ile Asp Thr Arg Leu Ser Leu Thr Thr Arg Gln Lys
 340 345 350
 Val Ile Phe Ala Leu Ala Thr Leu Leu Leu Leu Ala Ser Ile Ala Ala
 355 360 365
 Phe Ile Val Thr Gly Phe Gly Gly Leu Thr Val Met Gln Val Leu Leu
 370 375 380
 Val Ala Ser Val Gly Ser Ala Val Ala Ser Val Thr Leu Pro Met Val
 385 390 395 400
 Ser Ser Gly Phe Ser Tyr Val Ala Tyr Gln Leu Lys Ala Arg Leu Asn
 405 410 415
 Ile Ser Lys Leu Arg Trp Lys Glu Ala Lys Asn Lys Lys Arg Val Arg
 420 425 430
 Gln Phe Leu Ile Glu Ser Gly Val Ile Ala Ser Asp Arg Glu Phe Asn
 435 440 445
 Gln Met Trp Lys Thr Val Tyr Lys Lys Gln Ile Gln Lys Thr Asp Ala
 450 455 460
 Ala Ile Arg Glu Glu Val Arg Asn Phe Glu Lys Gly Gly Glu Val Asn
 465 470 475 480
 Ser Ala Leu Val Gly Gly Ile Leu Leu Gly Val Gly Thr Gly Ile Met
 485 490 495
 Leu Leu Ala Leu Val Pro Ala Phe Ala Pro Ile Val Pro Gly Ile Leu
 500 505 510
 Ala Leu Gly Gly Ser Thr Leu Gly Ile Ala Gly Ser Ile Leu Met Arg
 515 520 525
 Lys Phe Val Asn Trp Leu Tyr Asp Glu Leu Val Lys Leu Tyr Glu Arg
 530 535 540
 Arg Arg Asn Arg Arg Glu Leu Leu Tyr Gly Pro Glu Ser Lys Met Arg

545 550 555 560
 Ser Ile Ala Thr Asp Leu Val Val Glu Ala Leu Ala Ala Ser His Asp
 565 570 575
 His Leu Phe Asp Leu Asp Gly Pro Val Asp Phe Ile Asp Val Asp Val
 580 585 590
 Asp Ile Asp Gly Ala Ala
 595
 <210>512
 <211>99
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>512
 Gly Thr Pro Gly Ala Lys Thr Val Lys Ala Thr Thr Thr Thr Glu Thr
 1 5 10 15
 Ala Thr Ser Lys Thr Thr Arg Pro Ala Asn Lys Val Thr Glu Trp Val
 20 25 30
 Lys Ile Leu Phe Arg Asn Pro Val Ser Ser Gly Leu Leu Gly Thr Arg
 35 40 45
 Glu Phe Gly Thr Gly Glu Arg Leu Arg Leu Phe Ala Arg Arg Glu Val
 50 55 60
 Phe Ser Val Ala Leu Asp Lys Asp Lys Tyr Arg Gly Ser Leu Leu Ile
 65 70 75 80
 Gly Asp Val Asp Ile Lys Glu Ile Leu Ile Ile Ile Phe Asn Tyr Lys
 85 90 95
 Ile Asn Tyr

 <210>513
 <211>722
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>513
 Pro Ser Met Val Asp Lys Leu Ile His Pro Trp Asp Leu Asp Leu Leu
 1 5 10 15
 Val Ser Gly Arg Gln Lys Asp Pro His Lys Leu Leu Gly Ile Leu Ala
 20 25 30
 Ser Glu Asp Ser Ser Asp His Ile Val Ile Phe Arg Pro Gly Ala His
 35 40 45
 Thr Val Ala Ile Glu Leu Leu Gly Glu Leu His His Ala Val Ala Tyr
 50 55 60
 Arg Ser Gly Leu Phe Phe Leu Ser Val Pro Lys Gly Ile Gly His Gly
 65 70 75 80
 Asp Tyr Arg Val Tyr His Gln Asn Gly Leu Leu Ala His Asp Pro Tyr
 85 90 95
 Ala Phe Pro Pro Leu Trp Gly Glu Ile Asp Ser Phe Leu Phe His Arg
 100 105 110
 Gly Thr His Tyr Arg Ile Tyr Glu Arg Met Gly Ala Ile Pro Met Glu
 115 120 125
 Val Gln Gly Ile Ser Gly Val Leu Phe Val Leu Trp Ala Pro His Ala
 130 135 140
 Gln Arg Val Ser Val Val Gly Asp Phe Asn Phe Trp His Gly Leu Val
 145 150 155 160
 Asn Pro Leu Arg Lys Ile Ser Asp Gln Gly Ile Trp Glu Leu Phe Val
 165 170 175
 Pro Gly Leu Gly Glu Gly Ile Arg Tyr Lys Trp Glu Ile Val Thr Gln
 180 185 190
 Ser Gly Asn Val Ile Val Lys Thr Asp Pro Tyr Gly Lys Ser Phe Asp
 195 200 205
 Pro Pro Pro Gln Gly Thr Ala Arg Val Ala Asp Ser Glu Ser Tyr Ser
 210 215 220
 Trp Ser Asp His Arg Trp Met Glu Arg Arg Ser Lys Gln Ser Glu Gly
 225 230 235 240
 Pro Val Thr Ile Tyr Glu Val His Leu Gly Ser Trp Gln Trp Gln Glu
 245 250 255
 Gly Arg Pro Leu Ser Tyr Ser Glu Met Ala His Arg Leu Ala Ser Tyr

WO 99/27105

260 265
 Cys Lys Glu Met His Tyr Thr His Val Glu Leu Leu Pro Ile Thr Glu
 275 280 285
 His Pro Leu Asn Glu Ser Trp Gly Tyr Gln Val Thr Gly Tyr Tyr Ala
 290 295 300
 Pro Thr Ser Arg Tyr Gly Thr Leu Gln Glu Phe Gln Tyr Phe Val Asp
 305 310 315 320
 Tyr Leu His Lys Glu Asn Ile Gly Ile Ile Leu Asp Trp Val Pro Gly
 325 330 335
 His Phe Pro Val Asp Ala Phe Ala Leu Ala Ser Phe Asp Gly Glu Pro
 340 345 350
 Leu Tyr Glu Tyr Thr Gly His Ser Gln Ala Leu His Pro His Trp Asn
 355 360 365
 Thr Phe Thr Phe Asp Tyr Ser Arg His Glu Val Thr Asn Phe Leu Leu
 370 375 380
 Gly Ser Ala Leu Phe Trp Leu Asp Lys Met His Ile Asp Gly Leu Arg
 385 390 395 400
 Val Asp Ala Val Ala Ser Met Leu Tyr Arg Asp Tyr Gly Arg Glu Asp
 405 410 415
 Gly Glu Trp Thr Pro Asn Ile Tyr Gly Gly Lys Glu Asn Leu Glu Ser
 420 425 430
 Ile Glu Phe Leu Lys His Leu Asn Ser Val Ile His Lys Glu Phe Ser
 435 440 445
 Gly Val Leu Thr Phe Ala Glu Glu Ser Thr Ala Phe Pro Gly Val Thr
 450 455 460
 Lys Asp Val Asp Gln Gly Gly Leu Gly Phe Asp Tyr Lys Trp Asn Leu
 465 470 475 480
 Gly Trp Met His Asp Thr Phe His Tyr Phe Met Lys Asp Pro Met Tyr
 485 490 495
 Arg Lys Tyr His Gln Lys Asp Leu Thr Phe Ser Leu Trp Tyr Ala Phe
 500 505 510
 Gln Glu Ser Phe Ile Leu Pro Leu Ser His Asp Glu Val Val His Gly
 515 520 525
 Lys Gly Ser Leu Val Asn Lys Leu Pro Gly Asp Thr Trp Thr Arg Phe
 530 535 540
 Ala Gln Met Arg Val Leu Leu Ser Tyr Gln Ile Cys Leu Pro Gly Lys
 545 550 555 560
 Lys Leu Leu Phe Met Gly Gly Glu Phe Gly Gln Tyr Gly Glu Trp Ser
 565 570 575
 Pro Asp Arg Pro Leu Asp Trp Glu Leu Asn His His Tyr His Lys
 580 585 590
 Thr Leu Arg Asn Cys Val Ser Ala Leu Asn Ala Leu Tyr Ile His Gln
 595 600 605
 Pro Tyr Leu Trp Met Gln Glu Ser Ser Gln Glu Cys Phe His Trp Val
 610 615 620
 Asp Phe His Asp Ile Glu Asn Asn Val Ile Ala Tyr Tyr Arg Phe Ala
 625 630 635 640
 Gly Ser Asn Arg Ser Ser Ala Leu Leu Cys Val His His Phe Ser Ala
 645 650 655
 Ser Thr Phe Pro Ser Tyr Val Leu Arg Cys Glu Gly Val Lys His Cys
 660 665 670
 Glu Leu Leu Leu Asn Thr Asp Asp Glu Ser Phe Gly Gly Ser Gly Lys
 675 680 685
 Gly Asn Arg Ala Pro Val Val Cys Gln Asp Gln Gly Val Ala Trp Gly
 690 695 700
 Leu Asp Ile Glu Leu Pro Pro Leu Ala Thr Val Ile Tyr Leu Val Thr
 705 710 715 720
 Phe Phe

<210>514

<211>340

<212>PRT

<213>Chlamydia pneumoniae

<400>514

Gly Arg Gly Arg Ala Asp Trp Gly Asp Cys Met Asp Ile Met
 1 5 10 15
 Gln His Phe Lys Pro Tyr Thr Met Val Pro Gly Gln Lys Leu Pro Ile
 20 25 30
 Pro Gly Ser Leu Leu Tyr Ala Gln Val Phe Pro Thr Leu Trp Arg Leu
 35 40 45
 Phe Ser Ser Lys His Glu Ile Leu Asn Glu Gln Thr Leu Gln Val Gln
 50 55 60
 Gly Pro Leu Lys Arg Phe Ala Val Phe Gln Asp Leu His Arg Gly Gly
 65 70 75 80
 Leu Ala Val Thr Ser Glu Arg Tyr Lys Tyr Tyr Leu Leu Pro Ser Gly
 85 90 95
 Glu Cys Thr Gln Ser Ile Lys Gly Lys Leu Pro Ser Ala Ala Gln Ala
 100 105 110
 Gly Pro Leu Leu Ser Leu Gly Val His Lys His Ala Asp Trp Gln Lys
 115 120 125
 Val Arg Cys Arg Arg Asp Leu Lys Glu Ile Leu Pro Leu Trp Phe Arg
 130 135 140
 Phe Ala Ala Met Ala Pro Lys Gly Ser Tyr Arg Asp Leu Glu Thr Thr
 145 150 155 160
 Ala Ile Gly Ser Leu Val Lys Thr Ala His Gln Arg Val Leu His Arg
 165 170 175
 Glu Thr Thr Glu Ile Ala Pro Ala Leu Leu Ser Ile Ala Leu Ala Gly
 180 185 190
 Phe Ser Glu Cys Phe Leu Pro Arg Ser Tyr Asp Glu Glu Phe Gln Gly
 195 200 205
 Ile Leu Pro Gln Asp Gly Asp Pro Glu Gly Gly Val Pro Phe Glu Leu
 210 215 220
 Leu Ser Tyr Ser Phe Gly Met Ile Gln Asp Ile Phe Leu Arg His Gln
 225 230 235 240
 Gly Gln Leu Val Glu Ile Leu Pro Ala Leu Pro Pro Glu Phe Pro Cys
 245 250 255
 Gly Arg Leu Ile His Val Ala Leu Pro Asn Leu Gly Thr Leu Ser Ile
 260 265 270
 Val Trp Thr Lys Lys Thr Ile Arg Gln Val Glu Leu His Ala Glu Tyr
 275 280 285
 Ser Gly Glu Val Phe Leu Lys Phe Cys Ser Ser Leu Cys Ser Ala Arg
 290 295 300
 Leu Arg Glu Trp Ser Glu Arg Arg Leu Ser Gly Ser Lys Arg Leu Ser
 305 310 315 320
 Leu Gly Glu Thr Leu Glu Ile Lys Ala Gly Thr Thr Tyr Leu Trp Asp
 325 330 335
 Cys Phe His Lys
 340

<210>515

<211>423

<212>PRT

<213>Chlamydia pneumoniae

<400>515

Arg Tyr Met Thr Val Ala Glu Val Lys Gly Thr Phe Lys Leu Val Cys
 1 5 10 15
 Leu Gly Cys Arg Val Asn Gln Tyr Glu Val Gln Ala Tyr Arg Asp Gln
 20 25 30
 Leu Thr Ile Leu Gly Tyr Gln Glu Val Leu Asp Ser Glu Ile Pro Ala
 35 40 45
 Asp Leu Cys Ile Ile Asn Thr Cys Ala Val Thr Ala Ser Ala Glu Ser
 50 55 60
 Ser Gly Arg His Ala Val Arg Gln Leu Cys Arg Gln Asn Pro Thr Ala
 65 70 75 80
 His Ile Val Val Thr Gly Cys Leu Gly Glu Ser Asp Lys Glu Phe Phe
 85 90 95
 Ala Ser Leu Asp Arg Gln Cys Thr Leu Val Ser Asn Lys Glu Lys Ser
 100 105 110
 Arg Leu Ile Glu Lys Ile Phe Ser Tyr Asp Thr Thr Phe Pro Glu Phe

115 120 125
 Lys Ile His Ser Phe Glu Gly Lys Ser Arg Ala Phe Ile Lys Val Gln
 130 135 140
 Asp Gly Cys Asn Ser Phe Cys Ser Tyr Cys Ile Ile Pro Tyr Leu Arg
 145 150 155 160
 Gly Arg Ser Val Ser Arg Pro Ala Glu Lys Ile Leu Ala Glu Ile Ala
 165 170 175
 Gly Val Val Asp Gln Gly Tyr Arg Glu Val Val Ile Ala Gly Ile Asn
 180 185 190
 Val Gly Asp Tyr Cys Asp Gly Glu Arg Ser Leu Ala Ser Leu Ile Glu
 195 200 205
 Gln Val Asp Gln Ile Pro Gly Ile Glu Arg Ile Arg Ile Ser Ser Ile
 210 215 220
 Asp Pro Asp Asp Ile Thr Glu Asp Leu His Arg Ala Ile Thr Ser Ser
 225 230 235 240
 Arg His Thr Cys Pro Ser Ser His Leu Val Leu Gln Ser Gly Ser Asn
 245 250 255
 Ser Ile Leu Lys Arg Met Asn Arg Lys Tyr Ser Arg Gly Asp Phe Leu
 260 265 270
 Asp Cys Val Glu Lys Phe Arg Ala Ser Asp Pro Arg Tyr Ala Phe Thr
 275 280 285
 Thr Asp Val Ile Val Gly Phe Pro Gly Glu Ser Asp Gln Asp Phe Glu
 290 295 300
 Asp Thr Leu Arg Ile Ile Glu Asp Val Gly Phe Ile Lys Val His Ser
 305 310 315 320
 Phe Pro Phe Ser Ala Arg Arg Arg Thr Lys Ala Tyr Thr Phe Asp Asn
 325 330 335
 Gln Ile Pro Asn Gln Val Ile Tyr Glu Arg Lys Lys Tyr Leu Ala Glu
 340 345 350
 Val Ala Lys Arg Val Gly Gln Lys Glu Met Met Lys Arg Leu Gly Glu
 355 360 365
 Thr Thr Glu Val Leu Val Glu Lys Val Thr Gly Gln Val Ala Thr Gly
 370 375 380
 His Ser Pro Tyr Phe Glu Lys Val Ser Phe Pro Val Val Gly Thr Val
 385 390 395 400
 Ala Ile Asn Thr Leu Val Ser Val Arg Leu Asp Arg Val Glu Glu Glu
 405 410 415
 Gly Leu Ile Gly Glu Ile Val
 420

<210>516

<211>472

<212>PRT

<213>Chlamydia pneumoniae

<400>516

Leu Asp Thr Ile Asp Thr Pro Gly Glu Gln Gly Ser Gln Ser Phe Gly
 1 5 10 15
 Asn Ser Leu Gly Ala Arg Phe Asp Leu Pro Arg Lys Glu Gln Asp Pro
 20 25 30
 Ser Gln Ala Leu Ala Val Ala Ser Tyr Gln Asn Lys Thr Asp Ser Gln
 35 40 45
 Val Val Glu Glu His Leu Asp Glu Leu Ile Ser Leu Ala Asp Ser Cys
 50 55 60
 Gly Ile Ser Val Leu Glu Thr Arg Ser Trp Ile Leu Lys Thr Pro Ser
 65 70 75 80
 Ala Ser Thr Tyr Ile Asn Val Gly Lys Leu Glu Glu Ile Glu Glu Ile
 85 90 95
 Leu Lys Glu Phe Pro Ser Ile Gly Thr Leu Ile Ile Asp Glu Glu Ile
 100 105 110
 Thr Pro Ser Gln Gln Arg Asn Leu Glu Lys Arg Leu Gly Leu Val Val
 115 120 125
 Leu Asp Arg Thr Glu Leu Ile Leu Glu Ile Phe Ser Ser Arg Ala Leu
 130 135 140
 Thr Ala Glu Ala Asn Ile Gln Val Gln Leu Ala Gln Ala Arg Tyr Leu
 145 150 155 160

Leu Pro Arg Leu Lys Arg Leu Trp Gly His Leu Ser Arg Gln Lys Ser
 165 170 175
 Gly Gly Gly Ser Gly Gly Phe Val Lys Gly Glu Gly Glu Lys Gln Ile
 180 185 190
 Glu Leu Asp Arg Arg Met Val Arg Glu Arg Ile His Lys Leu Ser Ala
 195 200 205
 Gln Leu Lys Ala Val Ile Lys Gln Arg Ala Glu Arg Arg Lys Val Lys
 210 215 220
 Ser Arg Arg Gly Ile Pro Thr Phe Ala Leu Ile Gly Tyr Thr Asn Ser
 225 230 235 240
 Gly Lys Ser Thr Leu Leu Asn Leu Leu Thr Ala Ala Asp Thr Tyr Val
 245 250 255
 Glu Asp Lys Leu Phe Ala Thr Leu Asp Pro Lys Thr Arg Lys Cys Val
 260 265 270
 Leu Pro Gly Gly Arg His Val Leu Leu Thr Asp Thr Val Gly Phe Ile
 275 280 285
 Arg Lys Leu Pro His Thr Leu Val Ala Ala Phe Lys Ser Thr Leu Glu
 290 295 300
 Ala Ala Phe His Glu Asp Val Leu Leu His Val Val Asp Ala Ser His
 305 310 315 320
 Pro Leu Ala Leu Glu His Val Gln Thr Thr Tyr Asp Leu Phe Gln Glu
 325 330 335
 Leu Lys Ile Glu Lys Pro Arg Ile Ile Thr Val Leu Asn Lys Val Asp
 340 345 350
 Arg Leu Pro Gln Gly Ser Ile Pro Met Lys Leu Arg Leu Leu Ser Pro
 355 360 365
 Leu Pro Val Leu Ile Ser Ala Lys Thr Gly Glu Gly Ile Gln Asn Leu
 370 375 380
 Leu Ser Leu Met Thr Glu Ile Ile Gln Glu Lys Ser Leu His Val Thr
 385 390 395 400
 Leu Asn Phe Pro Tyr Thr Glu Tyr Gly Lys Phe Thr Glu Leu Cys Asp
 405 410 415
 Ala Gly Val Val Ala Ser Ser Arg Tyr Gln Glu Asp Phe Leu Val Val
 420 425 430
 Glu Ala Tyr Leu Pro Lys Glu Leu Gln Lys Lys Phe Arg Pro Phe Ile
 435 440 445
 Ser Tyr Val Phe Pro Glu Asp Cys Gly Asp Asp Glu Gly Arg Gly Pro
 450 455 460
 Val Leu Glu Ser Ser Phe Gly Asp
 465 470

<210>517

<211>273

<212>PRT

<213>Chlamydia pneumoniae

<400>517

Ala Ile Gly Met Val Arg Asp Ile Gln Ser Glu Ser Ile Gly Lys Leu
 1 5 10 15
 Val Phe Leu Gly Thr Gly Asn Pro Glu Gly Ile Pro Val Pro Phe Cys
 20 25 30
 Ser Cys Arg Val Cys Gln Asn Thr Gly Ile His Arg Leu Arg Ser Ser
 35 40 45
 Val Leu Ile Gln Tyr Gln Asn Lys Thr Leu Val Ile Asp Ala Gly Pro
 50 55 60
 Asp Phe Arg Thr Gln Met Leu Val Ala Gly Val Ser Glu Leu Asp Gly
 65 70 75 80
 Val Phe Leu Thr His Pro His Tyr Asp His Ile Gly Gly Ile Asp Asp
 85 90 95
 Leu Arg Ala Trp Tyr Ile Val Thr Gln Arg Ser Leu Pro Leu Val Leu
 100 105 110
 Ser Ala Ser Thr Tyr Arg Phe Leu Asn Lys Ala Lys Glu Tyr Leu Phe
 115 120 125
 Ala Thr Pro Asn Val Glu Ser Ser Leu Pro Ala Val Leu Glu Phe Thr
 130 135 140
 Ile Leu Asn Glu Asp Cys Gly Gln Glu Glu Phe Gln Gly Ile Pro Tyr

145 150 155 160
 Thr Tyr Val Ser Tyr Tyr Gln Lys Ser Cys His Val Thr Gly Phe Arg
 165 170 175
 Phe Gly Asn Leu Ala Tyr Leu Thr Asp Leu Cys Ser Tyr Asp Ala Lys
 180 185 190
 Ile Phe Ser Tyr Leu Asp Asn Val Glu Thr Leu Ile Leu Ser Ala Gly
 195 200 205
 Pro Ser Glu Thr Pro Ile Pro Phe Gln Gly His Lys Ser Ser His Leu
 210 215 220
 Thr Val Glu Glu Ala Lys Ala Phe Ala Asn His Ala Gly Ile Lys Asn
 225 230 235 240
 Leu Ile Ile Thr His Ile Ser His Cys Leu Glu Ala Glu Arg Asp Gln
 245 250 255
 His Pro Glu Val Thr Phe Ala Tyr Asp Gly Met Glu Val Leu Trp Thr
 260 265 270
 Leu

<210>518

<211>242

<212>PRT

<213>Chlamydia pneumoniae

<400>518

Ser Asp Xaa Xaa Ile Ser Trp Gly Ile Ser Gly Arg Leu Gly Glu Phe
 1 5 10 15
 Val Ser Lys Lys Glu Gln Asp Cys Met Leu Gly Ser Leu Pro Cys Tyr
 20 25 30
 Pro Gly Ala Gly Asn Ile Glu Glu Tyr Lys Asn Arg Tyr Phe Tyr Cys
 35 40 45
 Gln Leu Cys Ala Glu Val Val Ser Pro Tyr Val Val Pro Val Ile Val
 50 55 60
 Val Asp Val Gln Gly Ala Pro Pro Thr Gly Ile Leu Gln Val Leu Arg
 65 70 75 80
 Cys Lys Gln His Lys Phe Gln Gly Leu Pro Val His Gly Pro Ile Thr
 85 90 95
 Ser Leu Trp Ala Leu Glu Pro Val Gly Lys Gly Ala Pro Gln Leu Glu
 100 105 110
 Ser Ala Met Tyr Glu Leu Cys Ser Gln Val Arg Asn Phe Asp Ile Cys
 115 120 125
 Ser Ile Val Ser Trp Val Phe Gly Gly Leu Cys Ile Phe Ala Gly Leu
 130 135 140
 Ile Val Gly Val Met Val Glu Ala Pro Leu Ile Ala Gly Leu Ser Ala
 145 150 155 160
 Trp Val Ile Pro Cys Ile Ile Gly Gly Val Gly Ala Ile Leu Cys Leu
 165 170 175
 Phe Ala Ile Leu Met Ala Tyr Leu Gly Arg Gly Arg Val Arg Glu Trp
 180 185 190
 Leu Asn Leu Ser His Glu Tyr Ile Thr Gln Cys His Cys Arg Gln Ile
 195 200 205
 Gln Ala His Ser Gln Asn Tyr Ser Val Ile Thr Glu Tyr Pro Ala Thr
 210 215 220
 Cys Ala Leu Ser Gln Pro Ile Thr Lys Leu Pro Asn Gly Ser Arg Arg
 225 230 235 240
 Asp Asn

<210>519

<211>545

<212>PRT

<213>Chlamydia pneumoniae

<400>519

Ser Cys Leu Arg Ile Glu Gly Ile Leu Met Ala Thr Ser Val Pro Val
 1 5 10 15
 Thr Ser Ser Thr Ser Val Gly Glu Ala Asn Ser Ser Asn Glu Arg Phe
 20 25 30
 Thr Glu Arg Thr Ser Arg Met Tyr Tyr Ala Ala Leu Val Leu Gly Ala

35 40
 Leu Ser Cys Leu Ile Phe Ile Ala Met Ile Val Ile Phe Pro Gln Val
 50 55 60
 Gly Leu Trp Ala Val Val Leu Gly Phe Ala Leu Gly Cys Leu Leu Leu
 65 70 75 80
 Ser Leu Ala Ile Val Phe Ala Val Ser Gly Leu Val Leu Gly Lys Thr
 85 90 95
 Leu Glu Pro Ser Arg Glu Ala Thr Pro Pro Glu Ile Val Ala Gln Lys
 100 105 110
 Glu Trp Thr Thr Gln Gln Asp Val Leu Gly Asn Glu Tyr Trp Arg Ser
 115 120 125
 Glu Leu Ile Ser Leu Phe Leu Arg Gly Asp Leu His Glu Ser Leu Ile
 130 135 140
 Val Asp Ser Lys Asp Arg Ser Leu Asp Ile Asp Gln Ser Leu Gln Asn
 145 150 155 160
 Ile Leu Lys Leu Glu Pro Leu Ser Thr Thr Leu Ser Leu Leu Lys Lys
 165 170 175
 Asp Cys Val His Ile Asn Ile Ile Leu His Leu Val Arg Gln Trp Asn
 180 185 190
 Leu Leu Gly Val Asp Leu Ser Pro Glu Val Thr Ala His Ala Glu Glu
 195 200 205
 Leu Leu Leu Phe Leu Ile Glu Glu Gln Tyr Tyr Ser Pro Asp Ile Leu
 210 215 220
 Lys Leu Ile Arg Tyr Gly Asp Ala Leu Gln Ala Thr Ser Pro Leu Met
 225 230 235 240
 Asp Trp Ala Asp Ser Gly Ser Phe Ser Val Asp Ala Asp Gly Val Phe
 245 250 255
 Ser Cys Arg Arg Glu Glu Cys Ser Pro Glu Asp Ala Leu Ala Gln Phe
 260 265 270
 Asp Leu Leu Ala Leu Glu Asn Pro Asp Arg Arg Phe Leu Lys Asp
 275 280 285
 Ser Phe Leu Thr Tyr Ile Trp Ser Ser Ser Phe Phe Glu Lys Phe Leu
 290 295 300
 His Arg His Leu Glu Ser Leu Gln Arg Lys Leu Pro Glu Thr Ala Ile
 305 310 315 320
 Asp Val Ala Arg Tyr Glu Ala Gln Ile Gln Thr Phe Leu Ser Arg Tyr
 325 330 335
 Phe Gln Lys Leu Asp Leu Ile Asn Ala Met Ser Leu Asp Trp Gly Tyr
 340 345 350
 Asn Cys Ala Glu Gly Glu Lys Cys Tyr Glu Ser Ala Asn Gln Arg Leu
 355 360 365
 Asp Asn Leu Phe Ile Ala Phe Ser Ser Ser Val Pro Ala Met Lys Arg
 370 375 380
 Leu Phe Asp Lys Tyr Gly Ser Val Val Arg Val Asp Arg Arg Gln Ile
 385 390 395 400
 Arg Glu Gln Ile Leu Ser Asn Thr Glu Ile Leu Glu Asn Glu Ser Gly
 405 410 415
 Phe Leu Cys Ser Leu Tyr Glu Tyr Pro Leu Ser Tyr Leu Ile Asp Trp
 420 425 430
 Ala Val Leu Leu Asp Cys Val Arg Gly Thr Glu Ile Ser Leu Glu Asp
 435 440 445
 Gln Ala Asp Tyr Thr Val Cys Leu Gln Gly Leu Asp Ser Met Leu Ser
 450 455 460
 Gln Phe Ala Ser Arg Leu Gln Ser Gly Gln Lys Val Leu Asn Pro Arg
 465 470 475 480
 Asp Val Leu Ser Glu Gln Ala Ala Val Met Leu Val His Gly Leu Ala
 485 490 495
 Ala Gln Gly Val Ser Phe Gln Gly Leu Lys Ala Leu Met Tyr Leu Thr
 500 505 510
 Ala Val Pro Gln Arg Met Trp Leu Gly Ala Leu Pro Leu Phe Glu Ser
 515 520 525
 Phe Pro Val Phe Asn Arg Met Xaa Glu Phe Leu Gly Glu Ser Leu Gly
 530 535 540
 Asp

545

<210>520

<211>237

<212>PRT

<213>Chlamydia pneumoniae

<400>520

Met Ile Lys Gln Ile Gly Arg Phe Phe Arg Ala Phe Ile Phe Ile Met
 1 5 10 15
 Pro Leu Ser Leu Thr Ser Cys Glu Ser Lys Ile Asp Arg Asn Arg Ile
 20 25 30
 Trp Ile Val Gly Thr Asn Ala Thr Tyr Pro Pro Phe Glu Tyr Val Asp
 35 40 45
 Ala Gln Gly Glu Val Val Gly Phe Asp Ile Asp Leu Ala Lys Ala Ile
 50 55 60
 Ser Glu Lys Leu Gly Lys Gln Leu Glu Val Arg Glu Phe Ala Phe Asp
 65 70 75 80
 Ala Leu Ile Leu Asn Leu Lys Lys His Arg Ile Asp Ala Ile Leu Ala
 85 90 95
 Gly Met Ser Ile Thr Pro Ser Arg Gln Lys Glu Ile Ala Leu Leu Pro
 100 105 110
 Tyr Tyr Gly Asp Glu Val Gln Glu Leu Met Val Val Ser Lys Arg Ser
 115 120 125
 Leu Glu Thr Pro Val Leu Pro Leu Thr Gln His Ser Ser Val Ala Val
 130 135 140
 Gln Thr Gly Thr Phe Gln Glu His Tyr Leu Leu Ser Gln Pro Gly Ile
 145 150 155 160
 Cys Val Arg Ser Phe Asp Ser Thr Leu Glu Val Ile Met Glu Val Arg
 165 170 175
 Tyr Gly Lys Ser Pro Val Ala Val Leu Glu Pro Ser Val Gly Arg Val
 180 185 190
 Val Leu Lys Asp Phe Pro Asn Leu Val Ala Thr Arg Leu Glu Leu Pro
 195 200 205
 Pro Glu Cys Trp Val Leu Gly Cys Gly Leu Gly Val Leu Lys Ile Val
 210 215 220
 Leu Lys Lys Tyr Lys Arg Phe Asn Lys Arg Leu Gln Ile
 225 230 235

<210>521

<211>369

<212>PRT

<213>Chlamydia pneumoniae

<400>521

Lys Leu Pro Asn Asn Arg Leu Arg Met Val Lys Thr Lys Asn Pro Met
 1 5 10 15
 Phe Pro Ser Arg Ala Arg Arg Pro Gln Arg Thr His Pro Arg Leu Pro
 20 25 30
 Pro Lys Leu Leu His Gln Arg Ala Gln Lys Ser Leu Lys Gln Pro Ala
 35 40 45
 Asp Lys Lys Pro Thr Pro Pro Pro Glu Ala Pro Pro Pro Val Arg
 50 55 60
 Val Ala Thr Pro Met Pro Leu Arg Pro Ser Ser Gln Gly Tyr Trp Gln
 65 70 75 80
 Cys Leu Asn Arg Met Val Ser Met Val Leu Arg Arg Ala Pro Leu Pro
 85 90 95
 Leu Pro Ala Met Gln Val Asp Pro Ile Leu Gly Asp Phe Asn Pro His
 100 105 110
 Phe Val Ala Ser Tyr Pro Asn Arg Ile Asn Asn Glu Pro Met Tyr Phe
 115 120 125
 Gln Ile Lys Gln Phe Lys Lys Ile Ala Gln Asn Pro Asp Leu Pro Gln
 130 135 140
 Gln His Arg Arg Leu Ala Gln Leu Ser Leu Glu Gln Ala Leu Tyr Leu
 145 150 155 160
 Asn Asp Asn Tyr Tyr Leu Val Asn Val Pro Gly Asp Gly Asn Cys Phe
 165 170 175
 Tyr Arg Ala Tyr Ala Val Gly Trp Leu Ser Ala Leu Tyr Glu Glu Ser

180 185 190
 Ser Arg Asn Asp Ile Val Phe Glu Gln Glu Ala Thr Arg Leu Leu Asp
 195 200 205
 Leu Pro Phe Ala Ser Ser Ser Pro Ala Asn Ala Asn Leu Cys Ala Glu
 210 215 220
 Met Ala Glu Leu Leu Gln Leu Cys Ser Thr Tyr Cys Ser Phe Ile Asp
 225 230 235 240
 Leu Tyr Asp Gly Val Ile Leu Ser Gln Lys His Thr Ala Thr Leu Ile
 245 250 255
 Ala Phe Leu Arg Lys Leu Ser Ala Tyr Ala Ile Arg Gln Gln Ile Ala
 260 265 270
 Ala Ser Ser Asn Glu Glu Thr Ala Arg Ala Leu Phe Ile Ser Asp Met
 275 280 285
 Gln Asp Asp Leu Leu Pro Ser Val Leu Glu Phe Leu Ala Ala Asn Arg
 290 295 300
 Pro Tyr Ser Glu Leu Phe Gln Asn Leu Ile Asp His Ser Ala His Pro
 305 310 315 320
 Thr Cys Asn Leu Glu Thr Asn Ser Phe Phe Ser Trp Asn Ile Cys Pro
 325 330 335
 Leu Ser Phe Leu Leu Met Gln Ser Phe Lys Arg Cys Leu Gln Lys Ile
 340 345 350
 Asn Asn Phe Glu Ser Asn Met Lys Glu Lys Tyr Glu Arg Leu Leu Leu
 355 360 365
 Ser

<210>522

<211>637

<212>PRT

<213>Chlamydia pneumoniae

<400>522

Ser Phe Arg Thr Pro Tyr Met Gln Ser Arg Asp Lys Leu Phe Leu Leu
 1 5 10 15
 Leu Glu His Leu Pro Ala Leu Phe Leu Thr Asp Ala Glu Leu Gln Lys
 20 25 30
 Met Ser Pro Glu Asp Gln Gln Leu Arg Lys Gln Tyr Glu Arg Glu Ile
 35 40 45
 Arg Glu Ala Phe Ala Lys Leu Ser Arg Arg Ile Ala Asp Ser Gly Trp
 50 55 60
 Asp Thr Glu Arg Phe Asn Ala Ile Val Lys Asp His Leu Pro Glu Ala
 65 70 75 80
 Ile Arg Cys Gln Tyr Ser Arg Phe Leu Ala Thr Ile Glu Asn Arg Arg
 85 90 95
 Ser Gly Asp Leu Pro Trp Ser Pro Ala Leu Ser Phe Phe Ala Phe Leu
 100 105 110
 Cys Thr Cys Pro Ser Val Arg Phe His Lys Leu Cys Ala Thr Phe Tyr
 115 120 125
 Lys Ser Leu Glu Asp Ile Ile Ile Ala Ser Ala Pro Pro Gln Arg Ser
 130 135 140
 Ile Gln Glu Ile Leu Xaa Ile Ser Asn Ala Ser Leu Ser Tyr Leu Asn
 145 150 155 160
 Glu Asp Leu Asp Ser Ser Trp Gln Arg Glu Val Ile Ser Ser Asn Ile
 165 170 175
 Met Thr Ile Leu Thr Thr His Glu Ser Leu Thr Leu Glu Ser Ser Met
 180 185 190
 Pro Gln Leu Glu Thr Leu His Lys Arg Ile Ala Asn Leu Leu Lys Asn
 195 200 205
 Val Ile Ser Thr Ser Phe Glu Thr Pro Pro Leu Ser Asn Gln Pro Asp
 210 215 220
 Leu Leu Ser Asn Leu Val Asn Lys Leu Leu Val Ala Ile His Ser Lys
 225 230 235 240
 Leu Glu Leu Lys Glu His Phe Asn Thr Val Cys Ser Ala Arg Ser Leu
 245 250 255
 Arg Leu Thr Arg Asp Glu Gly Ser Gly Leu Ser Gln Glu Gln Asp Leu
 260 265 270

L u Tyr Thr Gln Ala Val Gln Leu Leu Phe Phe Ile Leu C His Pro
 275 280 285
 Gln Val Asn Asn Arg Pro Glu Thr Lys Asp Ala Val Lys Glu Leu Lys
 290 295 300
 Met Leu Leu Leu Pro Phe Leu Gln Tyr Ala Phe Lys Lys Val Glu Asn
 305 310 315 320
 Glu Lys Lys Leu Gln Lys Leu Leu Arg Ser Ile Leu Gly Ser Leu Val
 325 330 335
 Leu Lys Pro Pro Ala Arg Tyr Pro Ser Thr Pro Ser Asn Lys Asp Lys
 340 345 350
 Glu Thr Phe Cys Lys Phe Trp Ser Arg His Pro Glu Val Met Val Leu
 355 360 365
 Asp Pro Ile Leu Glu Lys Asn Cys Met Gln Phe Leu Arg Ala Thr Phe
 370 375 380
 Pro Asn Tyr Gln Leu Glu Thr Glu Ala Ile Leu Leu Glu Lys Glu Ile
 385 390 395 400
 Glu Ser Thr Phe Arg Asn Gly Trp Asn Val Phe Leu Thr Arg Leu Asn
 405 410 415
 Leu Phe Gly Ser Lys Leu Gly Ser Pro Ser Ser Pro Thr Ala Leu Ser
 420 425 430
 Asp Gln Phe Ser Lys Ser Phe Leu Ile Phe Cys Phe Leu Asn Asn Tyr
 435 440 445
 Pro Lys Leu Leu Gln Lys Lys Thr Pro Leu Ala Ala Arg Leu Asp Ala
 450 455 460
 Phe Gln Arg Glu Ala Ser His Arg Phe Thr Gln Val Lys Asp Lys Leu
 465 470 475 480
 Leu Leu Ser Leu Lys Tyr Gly Phe Pro Leu Ala Thr Ala Thr Ile Asn
 485 490 495
 Gln Tyr Ser Arg Ala Arg Asp Gln Leu Ile Cys Asn Leu Leu Lys Asn
 500 505 510
 Thr Val Thr Ala Ser Asp Gly Phe Cys Arg Ser Gly Phe Arg Gln Ser
 515 520 525
 Leu Ile Gly Tyr Leu His Ser Leu Ser Ser Asn Glu Leu Gly Asp Ile
 530 535 540
 Leu Asp Asp Val Lys Glu Gln Ala Glu Ala Asn Asp Val Ala Ala Met
 545 550 555 560
 Thr Thr Val Pro Leu Gln Pro Phe Ala Val Cys Leu Ile Met Ser Asp
 565 570 575
 Arg Asp Thr Val Ser Glu Glu Asn Ile Glu Asn Phe Val Ala Met His
 580 585 590
 Gly Phe Leu Asn Thr Ile Ser Pro Glu Arg Asp Ala Arg Ile Phe Leu
 595 600 605
 Ile Arg Phe Pro Asn His Tyr Gly Cys Leu Leu Pro Arg Asn Pro Arg
 610 615 620
 Thr Glu Asp Gln Asn Ser Lys Pro Asp Ser Ser Asn Pro
 625 630 635

<210>523

<211>298

<212>PRT

<213>Chlamydia pneumoniae

<400>523

Arg Ser Glu Leu Lys Thr Gly Gln Leu Lys Ser Leu Val Leu His Glu
 1 5 10 15
 Val Leu Ile Leu Thr Phe Thr Tyr Pro Leu Pro Arg Thr Leu Lys Gln
 20 25 30
 His Pro Asp Glu Val His Thr Val Pro Ile Ser Pro Asn Leu Ser Phe
 35 40 45
 Gly Glu Gly Ser Pro Ile Leu Ile Ala Gly Pro Cys Thr Leu Glu Ser
 50 55 60
 Tyr Glu His Thr Val Ser Ser Ala Leu Thr Val Lys Glu Ala Gly Ala
 65 70 75 80
 Gln Val Phe Arg Gly Ser Ile Arg Lys Pro Arg Thr Ser Pro Phe Ser
 85 90 95
 Phe Gln Gly Trp Glu Lys Glu Cys Val Leu Trp His Lys Glu Ala Gln

100 105 110
 Ser Ile His Gly Leu Pro Thr Glu Thr Glu Val Leu Asp Val Arg Asp
 115 120 125
 Val Glu Ile Thr Ala Glu His Val Asp Ile Leu Arg Ile Gly Ala Lys
 130 135 140
 Asn Met His Asn Thr Pro Leu Leu Gln Glu Val Ser Lys Ser His Arg
 145 150 155 160
 Pro Ile Ile Leu Lys Arg Ser Pro Ala Ala Thr Leu Glu Glu Trp Leu
 165 170 175
 Cys Ala Ala Glu Tyr Ile Leu Ala Ser Ser Pro Ser Cys Pro Gly Val
 180 185 190
 Ile Leu Cys Glu Arg Gly Ile Arg Thr Phe Glu His Ser Thr Arg Tyr
 195 200 205
 Thr Leu Asp Leu Asn Thr Val Ala Leu Leu Lys Glu Ile Ser Ser Leu
 210 215 220
 Pro Val Ile Val Asp Pro Ser His Ala Ala Gly Lys Arg Ser Leu Val
 225 230 235 240
 Leu Pro Leu Ala Ser Ala Gly Leu Ser Val Gly Ala Asp Gly Leu Met
 245 250 255
 Ile Glu Val His Ala His Pro Glu Lys Ala Leu Cys Asp Ala Lys Gln
 260 265 270
 Gln Ile Thr Pro Glu Glu Leu His Leu Phe Ala Lys Lys His Phe Cys
 275 280 285
 Pro Ser Glu Ser Arg Ala His Ala Ile Ser
 290 295
 <210>524
 <211>465
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>524
 Ala Gln His Arg Ser Leu Leu Lys Gly Asn Ile Xaa His Leu Gly Cys
 1 5 10 15
 Gly Val Leu Tyr Phe Met Asn Phe Ser Leu Phe Leu Phe Phe Leu Ile
 20 25 30
 Ala Ile Gln Gly Ile Cys Leu Tyr Val Gly Arg Arg Gly Ser Lys Lys
 35 40 45
 Val Glu Asp Arg Glu Ser Tyr Phe Leu Ala Gly Arg Ser Leu Lys Ile
 50 55 60
 Phe Pro Leu Met Met Thr Phe Ile Ala Thr Gln Ile Gly Gly Gly Val
 65 70 75 80
 Leu Leu Gly Ala Ala Glu Glu Ala Phe Cys Tyr Gly Tyr Gly Gly Ile
 85 90 95
 Leu Tyr Pro Leu Gly Val Ala Leu Gly Leu Ile Phe Leu Gly Met Gly
 100 105 110
 Pro Gly Lys Arg Leu Ala Glu Gly Ser Leu Thr Thr Val Val Ser Ile
 115 120 125
 Phe Glu Val Phe Tyr Gly Ser Lys Lys Leu Arg Lys Ile Ala Phe Leu
 130 135 140
 Leu Ser Ala Gly Ser Leu Phe Phe Ile Leu Val Ala Gln Val Ile Ala
 145 150 155 160
 Leu Asp Arg Leu Phe Ser Ser Phe Pro Phe Gly Lys Tyr Val Thr Val
 165 170 175
 Ala Phe Trp Ile Val Leu Ala Ser Tyr Thr Ser Thr Gly Gly Phe Arg
 180 185 190
 Gly Val Val Arg Thr Asp Val Ile Gln Ala Gly Phe Leu Leu Ile Ala
 195 200 205
 Val Leu Val Cys Gly Val Ser Val Trp Leu Ser Val Pro Lys Ser Leu
 210 215 220
 Ser Val Leu Asp Pro Phe Gln Ser Leu Pro Cys Ala Lys Phe Ser Asn
 225 230 235 240
 Trp Ile Phe Met Pro Met Leu Phe Met Leu Val Glu Gln Asp Met Val
 245 250 255
 Gln Arg Cys Val Ala Ala Ser Ser Pro Lys Arg Leu Gln Trp Ala Ala
 260 265 270

WO 99/27105

Val Gly Ala Gly Leu Val Leu Leu Phe Asn Phe Ile Leu Phe
 275 280 285
 Leu Gly Ser Leu Gly Ala Lys Ala Gly Leu Lys Ala Gly Cys Pro Leu
 290 295 300
 Ile Asp Thr Ile Ala Tyr Phe Cys Asn Pro Ser Leu Ala Ala Val Met
 305 310 315 320
 Ala Ala Ala Ile Gly Val Ala Ile Leu Ser Thr Ala Asp Ser Leu Met
 325 330 335
 Asn Ala Val Ser Gln Leu Ile Ala Glu Glu Tyr Pro Thr Leu Lys Ala
 340 345 350
 Pro Tyr Tyr Arg Tyr Leu Val Leu Gly Leu Ala Val Ala Ala Pro Leu
 355 360 365
 Val Ala Ile Gly Phe Thr Asn Ile Val Asp Val Leu Ile Leu Ser Tyr
 370 375 380
 Ser Leu Ser Val Cys Cys Leu Ser Val Pro Val Gly Phe Tyr Leu Leu
 385 390 395 400
 Ala Pro Lys Gly Arg Arg Val Ser Gly Ala Ala Ala Trp Ala Gly Val
 405 410 415
 Leu Val Gly Ala Leu Gly Tyr Gly Trp Val Gln Ile Val Ser Leu Gly
 420 425 430
 Met Phe Gly Glu Leu Leu Ala Trp Val Gly Ser Leu Val Ala Phe Ser
 435 440 445
 Phe Val Gly Phe Ile Glu Ile Thr Trp Lys Asn Lys Val Lys Thr Gln
 450 455 460

Thr

465

<210>525

<211>237

<212>PRT

<213>Chlamydia pneumoniae

<400>525

Gly Leu Arg Ser Pro Gln Pro Leu Val Cys Glu Ala Ala Ser Ala Ala
 1 5 10 15
 Leu Cys Ser Leu Gly Ile His Gly Val Pro Leu Ala Lys Glu His Leu
 20 25 30
 Glu Ser Leu Ser Ser Arg Lys Ala Ala Ala Asn Leu Ser Ile Leu Leu
 35 40 45
 Leu Val Ser Arg Glu Asp Ile Glu Arg Ala Gly Asp Val Ile Ala Arg
 50 55 60
 Tyr Leu Ser Asn Pro Glu Met Cys Trp Ala Ile Glu Tyr Phe Leu Trp
 65 70 75 80
 Asp Ala Gln Trp Asn Leu Arg Gly Asp Thr Phe Pro Leu Tyr Ser Asp
 85 90 95
 Met Ile Lys Arg Glu Ile Gly Arg Lys Leu Ile Arg Leu Leu Ala Val
 100 105 110
 Ala Arg Tyr Ser Gln Ala Lys Ala Val Thr Ala Thr Phe Leu Ser Gly
 115 120 125
 Gln Gln Ala Gln Gly Trp Ser Phe Phe Ser Gly Met Phe Trp Glu Glu
 130 135 140
 Gly Asp Val Lys Thr Ser Glu Asp Leu Val Thr Asp Ala Cys Phe Ala
 145 150 155 160
 Ala Lys Leu Glu Gly Ala Leu Ala Ser Leu Cys Gln Lys Lys Asp Gln
 165 170 175
 Ala Ser Leu Gln Arg Val Ser Gln Leu Tyr Asn Asp Ser Arg Trp Gln
 180 185 190
 Asp Lys Leu Ala Ile Leu Glu Ser Val Ala Phe Ser Glu Asn Leu Asp
 195 200 205
 Ala Val Pro Phe Leu Leu Asp Cys Cys His His Glu Ala Pro Ser Leu
 210 215 220
 Arg Ser Ala Ala Ala Gly Ala Leu Phe Ser Ile Phe Lys
 225 230 235

<210>526

<211>356

<212>PRT

<213>Chlamydia pneumoniae

<400>526

Arg Arg Thr Gly Gly Ile Ser Leu Thr Tyr Ser Ser Phe Arg Trp Ala
1 5 10 15
Ser Phe Arg Cys Tyr Ser Leu Ile Phe Phe Cys Phe Cys Gly Ser Leu
20 25 30
Phe Gly Ser Glu Ser Leu Arg Tyr Gln Leu Leu Ile Gln Asp Phe Ala
35 40 45
Lys Val Ser Glu Glu Gly Ile Gly Leu Leu Glu Ser Lys Glu Tyr Ser
50 55 60
Leu Leu Gln Ala Lys Leu Val Leu Arg Ala Leu Ala Gln Asn Ser Ser
65 70 75 80
Phe Asp Asp Trp Phe Arg Ser Phe Lys Lys Cys Gln Ile Ser Tyr Pro
85 90 95
Glu Leu Ala His Asp Arg Asp Val Leu Glu Glu Phe Gly Ile Gln Val
100 105 110
Leu Arg Glu Gly Ile Glu Asn Pro Ser Val Thr Val Arg Ala Val Ser
115 120 125
Val Leu Ala Ile Gly Leu Ala Arg Asp Phe Arg Leu Val Pro Leu Leu
130 135 140
Leu Gln Ser Cys Asn Asp Asp Ser Ala Ile Val Arg Ser Leu Ala Leu
145 150 155 160
Gln Val Ala Val Asn Tyr Gly Ser Glu Ser Leu Lys Lys Ala Ile Val
165 170 175
Glu Leu Ala Arg Asn Asp Asp Ser Ile His Val Arg Ile Thr Ala Tyr
180 185 190
Gln Val Val Ala Leu Leu Gln Ile Glu Glu Leu Leu Pro Phe Leu Arg
195 200 205
Glu Arg Ala Glu Asn Lys Leu Val Asp Ser Val Glu Arg Arg Glu Ala
210 215 220
Trp Lys Ala Cys Leu Glu Leu Ser Ser Gln Phe Leu Glu Thr Gly Val
225 230 235 240
Ala Lys Asp Asp Ile Asp Gln Ala Leu Phe Thr Cys Glu Val Leu Arg
245 250 255
Asn Gly Met Leu Pro Glu Thr Thr Glu Ile Phe Thr Glu Leu Leu Ser
260 265 270
Val Glu His Pro Glu Val Gln Glu Ser Leu Leu Leu Ser Ala Leu Ala
275 280 285
Trp Ser His Gln Leu Gln Asn His Lys Glu Phe Leu Ser Lys Val Arg
290 295 300
His Val Met Cys Thr Ser Pro Phe Ala Lys Val Arg Phe Gln Ala Ala
305 310 315 320
Ala Leu Leu His Leu His Gly Asp Pro Leu Gly Arg Asp Ser Leu Val
325 330 335
Glu Gly Cys Ala Leu Leu Asn Leu Leu Cys Val Arg Gln Leu Arg Arg
340 345 350
Leu Ser Ala Leu
355

<210>527

<211>110

<212>PRT

<213>Chlamydia pneumoniae

<400>527

Met Thr Val Phe Lys Gln Ile Ile Asp Gly Leu Ile Asp Cys Glu Lys
1 5 10 15
Val Phe Glu Asn Glu Asn Phe Ile Ala Ile Lys Asp Arg Phe Pro Gln
20 25 30
Ala Pro Val His Leu Leu Ile Ile Pro Lys Lys Pro Ile Pro Arg Phe
35 40 45
Gln Asp Ile Pro Gly Asp Glu Met Ile Leu Met Ala Glu Ala Gly Lys
50 55 60
Ile Val Gln Glu Leu Ala Ala Glu Phe Gly Ile Ala Asp Gly Tyr Arg
65 70 75 80
Val Val Ile Asn Asn Gly Ala Glu Gly Gly Gln Ala Val Phe His Leu

WO 99/27105

85 90 95
 His Ile His Leu Leu Gly Gly Arg Pro Leu Gly Ala Ile Ala
 100 105 110
 <210>528
 <211>130
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>528
 Asn His Leu Ile Pro Trp Asp Ile Leu Lys Ser Trp Tyr Arg Phe Phe
 1 5 10 15
 Arg Asn Asp Lys Lys Met Asn Arg Ser Leu Arg Lys Thr Ile Phe Tyr
 20 25 30
 Ser Tyr Glu Ile Phe Val Phe Lys Tyr Leu Phe Thr Ile Tyr Gln Ser
 35 40 45
 Ile Asp Asn Leu Phe Glu Tyr Cys His Met Ile Pro Arg Ser Cys Asn
 50 55 60
 Val Asn Arg Lys Ala Arg Trp Gln Leu Ser Leu Phe Val His Thr Glu
 65 70 75 80
 Arg Lys Arg Pro Leu Trp Gln Asn Thr Ala Pro Gly Ile Pro Asp Thr
 85 90 95
 Leu Asp Asn Ser Leu Pro Asn Lys Pro Ala Gln Phe Ser Gly Lys Gly
 100 105 110
 Thr Arg Thr Ser Ile Arg Arg Ser Lys Phe Gly Gly Ile Pro Arg Lys
 115 120 125
 Ile His
 130
 <210>529
 <211>300
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>529
 Met Glu Asp Trp Leu Arg Arg Ile Val Gly Met Gln Ile Pro Arg Ser
 1 5 10 15
 Ile Gly Thr His Asp Gly Ser Phe His Ala Asp Glu Val Thr Ala Cys
 20 25 30
 Ala Leu Leu Ile Ile Phe Asp Leu Val Asp Glu Asn Lys Ile Ile Arg
 35 40 45
 Ser Arg Asp Pro Val Val Leu Ser Lys Cys Glu Tyr Val Cys Asp Val
 50 55 60
 Gly Gly Val Tyr Ser Ile Glu Asn Lys Arg Phe Asp His His Gln Val
 65 70 75 80
 Ser Tyr Asp Gly Ser Trp Ser Ser Ala Gly Met Ile Leu His Tyr Leu
 85 90 95
 Lys Glu Phe Gly Tyr Met Asp Cys Glu Glu Tyr His Phe Leu Asn Asn
 100 105 110
 Thr Leu Val His Gly Val Asp Glu Gln Asp Asn Gly Arg Phe Phe Ser
 115 120 125
 Lys Glu Gly Phe Cys Ser Phe Ser Asp Ile Ile Lys Ile Tyr Asn Pro
 130 135 140
 Arg Glu Glu Glu Glu Thr Asn Ser Asp Ala Asp Phe Ser Cys Ala Leu
 145 150 155 160
 His Phe Thr Ile Asp Phe Leu Cys Arg Leu Arg Lys Lys Phe Gln Tyr
 165 170 175
 Asp Arg Val Cys Arg Gly Ile Val Arg Glu Ala Met Glu Thr Glu Asp
 180 185 190
 Met Cys Leu Tyr Phe Asp Arg Pro Leu Ala Trp Gln Glu Asn Phe Phe
 195 200 205
 Phe Leu Gly Gly Glu Lys His Pro Ala Ala Phe Val Cys Phe Pro Ser
 210 215 220
 Cys Asp Gln Trp Ile Leu Arg Gly Ile Pro Pro Asn Leu Asp Arg Arg
 225 230 235 240
 Met Glu Val Arg Val Pro Phe Pro Glu Asn Trp Ala Gly Leu Leu Gly
 245 250 255
 Lys Glu Leu Ser Lys Val Ser Gly Ile Pro Gly Ala Val Phe Cys His

260 265 270
 Lys Gly Leu Phe Leu Ser Val Trp Thr Asn Arg Glu Ser Cys Gln Arg
 275 280 285
 Ala Leu Arg Leu Thr Leu Gln Asp Arg Gly Ile Ile
 290 295 300
 <210>530
 <211>154
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>530
 Ile Met Tyr Asn Leu Leu His Ala His His Asp Ala Ala Ser Pro Asp
 1 5 10 15
 Gly Arg Leu Val Ser His Leu Lys Lys Leu Ser Pro His Ile Tyr Glu
 20 25 30
 Gly Glu Val Leu Ile Glu Asn Ile Pro Ala Tyr Phe Leu Gly Phe His
 35 40 45
 Leu Pro Gln Gln Cys Ile Gln Val Asn Leu Lys Ser Ser Leu Ala Gln
 50 55 60
 Leu Gly Val Glu Ala Val Leu Asn His Leu Glu Leu Asn Lys Ala Arg
 65 70 75 80
 Lys Glu Ala Arg Leu His Val Leu Phe Met Ser Gln Asp Pro Ile Ala
 85 90 95
 Thr Ala Asn Val Gly Ala Pro Arg Ser Leu Xaa Val Leu Ser Ala Ser
 100 105 110
 Ser Leu Leu Leu Met Ile Ala Asp Ser Tyr Val Arg Leu Val Ile Ser
 115 120 125
 Thr Gly Cys Leu Arg Thr Gln Thr Val Gln Asp Leu Arg Ser Tyr Ala
 130 135 140
 Leu Gly Lys Asn Leu Ser Thr Ser Ser Leu
 145 150
 <210>531
 <211>230
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>531
 Glu Pro Gly Ser Phe Val Cys Lys Leu Phe Ala Ala Asp Asp Arg Arg
 1 5 10 15
 Leu Val Arg Ser Pro Cys Tyr Leu Asn Arg Met Phe Thr His Thr Asp
 20 25 30
 Arg Thr Gly Ser Pro Leu Leu Arg Phe Gly Lys Lys Leu Glu His Phe
 35 40 45
 Ile Thr Leu Glu Ile Ile Asn Asp Arg Leu Val Val Phe Leu Pro Ile
 50 55 60
 Leu Pro Gly Thr Ile Cys Tyr Glu Glu Thr Ile Tyr Gly Phe Leu Pro
 65 70 75 80
 Leu Met Ser Lys Ser Leu Thr Arg Pro His Leu Lys Ile Arg Lys Phe
 85 90 95
 Leu Pro Leu Tyr Gln Met Val Thr Asp Arg Pro Pro Val Pro Glu Asp
 100 105 110
 His Lys Ile Leu Leu Ile Lys Thr Glu Pro Leu His Ile Arg Thr Val
 115 120 125
 Phe Ala Arg Val Val Gln Asp Leu Leu Pro Gln Gly Leu Arg His Thr
 130 135 140
 Ala Ala Asp Ile Leu Glu Pro Thr Thr Gln Glu Ser Gly Asp Ile Tyr
 145 150 155 160
 Glu Phe Tyr Gly Ser Thr Ser Glu Pro Ile Glu Arg Ile Pro Leu Glu
 165 170 175
 Phe Phe Thr Leu Glu Pro Tyr Lys Glu His Ser Phe Phe Phe Tyr Arg
 180 185 190
 Asp Met Leu Gln Glu Thr Leu Xaa Ser Pro Gln Glu Val Phe Arg Val
 195 200 205
 Phe Glu Ser Ile Pro Glu Gly Glu Asn Gln Ala Ala Met Phe Ile Ser
 210 215 220
 Lys Gly Ser Glu Leu Ala

225

230

<210>532

<211>356

<212>PRT

<213>Chlamydia pneumoniae

<400>532

Ala Cys Leu Ser Ser Pro Lys Thr Leu Gly Ser Ser Asn Leu Glu Ser
 1 5 10 15
 Pro His Gln Met Lys Asp Met Leu Gly Lys Phe Lys Ser Thr Leu Lys
 20 25 30
 Thr Gln Pro Cys Phe Pro Phe Leu Lys Ala Met Glu Thr Asp His Ile
 35 40 45
 Thr Ser Gln Gly Val Leu Phe Ser Arg Tyr Phe Pro Ser Ala Ser Leu
 50 55 60
 Lys Gly Met Phe Leu Ser Asn Tyr Ser Arg Tyr Tyr Leu Gln His Ile
 65 70 75 80
 Tyr Phe Gln Ile Pro Ser Pro Thr Ser Gly Glu Phe Phe Ser Asn Arg
 85 90 95
 Asp Arg Ser Phe Leu Leu Asp Leu Tyr Phe Ala Gly Ile Ser Val Phe
 100 105 110
 Trp Ala Asp Leu Glu Ser Lys Arg Leu Leu Gln Tyr Ile Lys Arg Arg
 115 120 125
 Asn Lys Asp Val Gly Met Phe Val Pro Lys His Gln Ala Glu Gln Phe
 130 135 140
 Ala Gln Ser Tyr Phe Ile Gly Ile His Gly Ser Cys Leu Ile Ala Gly
 145 150 155 160
 Asp Tyr Asp Glu Phe Leu Arg Glu Leu Leu Thr Gly Met His Thr Leu
 165 170 175
 Ser Gln Gln Phe Thr Ile Pro Glu Phe Pro Pro Gln Thr Pro Leu Ala
 180 185 190
 Ile Leu Thr Gly Gly Gly Ser Gly Ala Met Glu Leu Ala Asn Arg Val
 195 200 205
 Ala Thr Glu Leu Ser Ile Leu Ser Cys Gly Asn Leu Ile Ser Leu Asp
 210 215 220
 Thr Thr Asn Ala Tyr Val Glu Ala Lys Met Ser Tyr Ala Ile Pro Asp
 225 230 235 240
 Leu Leu Glu Arg Gln Ala Asp Phe His Val Asp Leu Ala Val Phe Val
 245 250 255
 Ile Gly Gly Met Gly Thr Asp Phe Glu Leu Leu Leu Glu Leu Ile Ser
 260 265 270
 Leu Lys Thr Gly Lys Lys Ala Leu Val Pro Val Phe Leu Ile Gly Pro
 275 280 285
 Val Asp Tyr Trp Lys Ser Lys Ile Thr Ala Leu Tyr Asn Ser Asn His
 290 295 300
 Ala Val Gly Thr Ile Arg Gly Ser Glu Trp Val His Asn Cys Leu Phe
 305 310 315 320
 Cys Leu Ser Ser Ala Lys Ala Gly Ile Ala Ile Phe Arg Arg Tyr Leu
 325 330 335
 Asn His Thr Leu Pro Ile Gly Pro Glu His Pro Val Pro Glu Asp Gly
 340 345 350
 Phe Val Ile Val
 355

<210>533

<211>420

<212>PRT

<213>Chlamydia pneumoniae

<400>533

Ile Leu Ser Ser Leu Tyr Thr Val Phe Thr Met Lys Thr Ala Phe His
 1 5 10 15
 Ser Cys Tyr Ser Trp Phe Cys Trp Leu Phe Ser Phe Leu Val Leu Phe
 20 25 30
 Val Gly Gly Ile Ala Gly Gly Glu Pro Leu Cys Pro Asp Cys Lys Tyr
 35 40 45
 Glu Thr Lys Ser Val Leu Arg Ser Asp Gln Leu Pro Asp His Leu Trp

50 55 60
 Asn Tyr Glu Asn Asp Cys Tyr Leu Thr Gly Tyr Val Gln Ser Leu Leu
 65 70 75 80
 Asp Met His Phe Leu Asp Ser Arg Thr Gln Val Val Ile Glu Lys Asn
 85 90 95
 Arg Ala Tyr Leu Phe Ser Leu Pro Val Asp Ser Ser Leu Ser Glu Ala
 100 105 110
 Ile Thr Asn Phe Val Arg Asp Leu Pro Phe Ile Cys Ala Val Glu Ile
 115 120 125
 Cys Glu Arg Pro Tyr Gly Glu Cys Ile Thr Arg Ser Ser Ala Glu Arg
 130 135 140
 Pro Leu Leu Pro Lys Glu Lys Thr Leu Gly Met Pro Ile Phe Cys Gly
 145 150 155 160
 Lys Glu Gly Val Trp Leu Pro Gln Asn Thr Ile Leu Phe Ser Pro Leu
 165 170 175
 Ile Ala Asp Pro Arg Gln Val Thr Asn Ser Ala Gly Ile Arg Phe Asn
 180 185 190
 Glu Lys Val Val Gly Asn Arg Val Gly Ala Thr Ile Phe Gly Gly Asp
 195 200 205
 Phe Ile Leu Leu Arg Leu Phe Asp Val Ser Arg Phe His Val Asp Cys
 210 215 220
 Asp Phe Gly Ile Gln Gly Gly Val Phe Ser Val Phe Asp Leu Asp His
 225 230 235 240
 Pro Glu Ser Cys Met Val Asn Ser Asp Phe Phe Val Ala Gly Leu Trp
 245 250 255
 Ser Gly Ala Ile Asp Lys Trp Ser Phe Arg Phe Arg Leu Trp His Leu
 260 265 270
 Ser Ser His Leu Gly Asp Glu Phe Ile Leu Thr His Pro Asn Phe Pro
 275 280 285
 Arg Phe Asn Leu Ser Asp Glu Gly Val Asp Leu Phe Ile Ser Phe Arg
 290 295 300
 Tyr Thr Pro Gln Ile Arg Leu Tyr Gly Gly Cys Gly Tyr Ile Val Ser
 305 310 315 320
 Arg Asp Leu Thr Phe Pro Glu Arg Pro Phe Tyr Cys Glu Trp Gly Ala
 325 330 335
 Glu Leu Arg Pro Phe Gly Leu Arg Glu Gly Asn Leu His Ala Gln Pro
 340 345 350
 Ile Phe Ala Met His Phe Arg Cys Trp Glu Glu Gln Lys Phe Gly Leu
 355 360 365
 Asp Gln Ser Tyr Ile Leu Gly Met Glu Trp Ala Lys Phe Gln Glu Ile
 370 375 380
 Gly Arg Lys Ile Arg Ala Val Leu Glu Tyr His Gln Gly Phe Ser Lys
 385 390 395 400
 Glu Gly Gln Phe Ile Arg Glu Pro Cys Asn Tyr Tyr Gly Phe Arg Leu
 405 410 415
 Thr Tyr Gly Phe
 420

<210>534

<211>96

<212>PRT

<213>Chlamydia pneumoniae

<400>534

Ser Lys Thr Glu Gly Ser His Ser Lys Thr Ser Lys Gly Phe Val Gly
 1 5 10 15
 Arg Phe Val Gln Trp Ile Arg Thr Phe Thr Gly Arg Gly Ser Lys Lys
 20 25 30
 Arg Ser Pro Ser Ser Phe Ser Pro Thr His Pro Tyr Ile Arg Leu Arg
 35 40 45
 Thr Tyr Thr Arg Ser Pro Lys Gln Ser Gly Val Glu Arg Lys Gln Glu
 50 55 60
 Asp Ala Glu Thr Ser Phe Ile Glu Thr Pro Lys Gly Ile Leu Lys Lys
 65 70 75 80
 Pro Gly Asn Lys Asp Pro Lys Gly Lys His Val His Trp Lys Asp Ser
 85 90 95

<210>535

<211>421

<212>PRT

<213>Chlamydia pneumoniae

<400>535

Met Ala Ile Gln Lys Ala Gly Ala Phe Leu Arg Cys Leu Pro Ser Glu
 1 5 10 15
 Ser Arg Pro Tyr Leu Glu His Ala Met Arg Arg Asn Pro His Phe Ser
 20 25 30
 Leu Leu Lys Pro Gln Tyr Leu Phe Ser Glu Ile Ser Lys Lys Leu Ala
 35 40 45
 Gln Phe Arg Lys Glu Asn Pro Glu Ile Ser Val Ile Asp Leu Ser Ile
 50 55 60
 Gly Asp Thr Thr Gln Pro Leu Cys Arg Ser Ile Thr Gln Ala Ile Lys
 65 70 75 80
 Glu Phe Cys Val Ser Gln Glu Lys Gln Glu Thr Tyr Arg Gly Tyr Gly
 85 90 95
 Pro Glu Thr Gly Leu Glu Lys Leu Arg Thr Lys Ile Ala Ser Glu Val
 100 105 110
 Tyr Glu Asn Arg Ile Ser Pro Glu Ile Phe Ile Ser Asp Gly Ala
 115 120 125
 Lys Pro Asp Ile Phe Arg Leu Phe Ser Phe Phe Gly Ser Glu Lys Thr
 130 135 140
 Leu Gly Leu Gln Asp Pro Val Tyr Pro Ala Tyr Arg Asp Ile Ala His
 145 150 155 160
 Ile Thr Gly Ile Arg Asp Ile Ile Pro Leu Ala Cys Arg Lys Glu Thr
 165 170 175
 Gly Phe Ile Pro Glu Leu Pro Asn Gln Gln Ser Leu Asp Ile Leu Cys
 180 185 190
 Leu Cys Tyr Pro Asn Asn Pro Thr Gly Thr Val Leu Thr Phe Gln Gln
 195 200 205
 Leu Gln Ala Leu Val Asn Tyr Ala Asn Gln His Gly Thr Val Leu Ile
 210 215 220
 Phe Asp Ala Ala Tyr Ser Ala Phe Val Ser Asp Pro Ser Leu Pro Lys
 225 230 235 240
 Ser Ile Phe Glu Ile Pro Glu Ala Lys Tyr Cys Ala Ile Glu Ile Asn
 245 250 255
 Ser Phe Ser Lys Ser Leu Gly Phe Thr Gly Met Arg Leu Ala Trp Asn
 260 265 270
 Val Ile Pro Lys Glu Leu Thr Tyr Asp Asn Asn Glu Pro Met Ile Asn
 275 280 285
 Asp Trp Lys Arg Leu Phe Ala Thr Thr Phe Asn Gly Ala Ser Leu Leu
 290 295 300
 Met Gln Glu Ala Gly Tyr Tyr Gly Leu Asp Leu Phe Pro Thr Pro Pro
 305 310 315 320
 Ala Ile Ser Leu Tyr Leu Thr Asn Ala Gln Lys Leu Lys Lys Ser Leu
 325 330 335
 Glu Thr Ala Gly Phe Ser Val His Gly Gly Asp His Ala Pro Tyr Leu
 340 345 350
 Trp Val Glu Leu Pro Glu Gly Ile Ser Asp Glu Glu Ala Phe Asp Phe
 355 360 365
 Phe Leu His Gln Tyr His Ile Ala Val Thr Pro Gly His Gly Phe Gly
 370 375 380
 Ser Cys Gly Gln Gly Phe Val Arg Phe Ser Ala Leu Thr Gln Pro Gln
 385 390 395 400
 Asn Ile Ala Leu Ala Cys Asp Arg Leu Cys Thr Ala Ser Leu Lys Glu
 405 410 415
 Thr Met Val Leu Ala
 420

<210>536

<211>354

<212>PRT

<213>Chlamydia pneumoniae

<400>536

Pro	Pro	Leu	Tyr	Arg	Phe	Thr	Lys	Arg	Asn	Asp	Gly	Ser	Cys	Met	Thr
1				5					10					15	
Ile	Leu	Arg	Lys	Leu	Ser	Gln	Tyr	Leu	Phe	Phe	Phe	Ser	Leu	Phe	Cys
		20						25					30		
Ser	Phe	Ile	Tyr	Val	Ala	Thr	Cys	Gly	Ser	Gln	Pro	Asp	Ser	Val	Ser
	35						40					45			
Ser	Pro	Lys	Ile	Ala	Ile	Phe	Leu	Ser	Phe	Pro	His	Pro	Leu	Leu	Glu
	50					55					60				
Asp	Cys	Ser	Lys	Ser	Cys	Ile	Glu	Thr	Leu	Lys	Asp	Phe	Glu	Asn	Leu
	65				70					75				80	
Pro	Glu	Ile	Val	Val	Leu	Asn	Ala	Glu	Asp	Ser	Ile	Val	Lys	Ala	Arg
				85					90					95	
Lys	Ile	Ala	Arg	Ser	Leu	His	Thr	Asp	Lys	Asn	Val	Val	Ala	Ile	Val
			100					105					110		
Thr	Leu	Gly	Thr	Ile	Ala	Thr	Lys	Val	Met	Ser	His	Ile	Glu	Thr	Gln
	115						120					125			
Lys	Pro	Val	Ile	Tyr	Ala	Ala	Val	Pro	Asp	Arg	Glu	Ser	Leu	Thr	Pro
	130				135						140				
Pro	Lys	Asn	Thr	Met	Asn	Ile	Tyr	Gly	Val	Asn	Asp	Thr	Leu	Asp	Ile
	145				150					155				160	
Asn	Gln	Tyr	Cys	Phe	Ala	Ile	Gln	Ala	Val	Ala	Thr	Asn	Ala	Gln	Ser
			165					170						175	
Ile	Val	Tyr	Leu	Lys	Pro	Ser	Glu	Pro	Phe	Pro	Ser	Asp	Leu	Gln	Lys
		180					185						190		
Glu	Ile	Val	Lys	Lys	Leu	His	Ala	Ser	Gly	Ile	Glu	Val	Ile	Glu	Ile
	195						200					205			
Ser	Ile	Thr	Ser	Ser	Thr	Phe	Lys	Thr	Arg	Ile	Arg	Gln	Ala	Ile	Asp
	210					215					220				
Lys	Arg	Pro	Ser	Ala	Ile	Phe	Ile	Pro	Leu	Ser	Pro	Leu	Ser	His	Lys
	225			230						235				240	
Glu	Gly	Thr	Ala	Phe	Leu	Gln	Glu	Ile	Leu	Lys	Glu	Lys	Ile	Pro	Ile
			245					250					255		
Ile	Thr	Asp	Asp	Thr	Ser	Leu	Ile	Ser	Glu	Glu	Pro	Ala	Leu	Pro	Val
		260						265					270		
Ala	Trp	Ile	Thr	Lys	Asn	Gln	Glu	Asn	Lys	Ser	Gln	Lys	Ile	Val	His
	275						280					285			
His	Leu	Leu	Tyr	Asn	Asn	His	Asp	Val	Asp	Ser	Leu	Arg	Lys	Ile	Ile
	290				295					300					
Ala	Gln	Arg	Leu	Ser	Pro	Thr	Thr	Thr	Phe	Asn	Glu	Asp	Ile	Ile	Lys
	305				310					315				320	
Tyr	Leu	Gly	Ile	Lys	Leu	His	Lys	Thr	Glu	Arg	Asn	Gln	Phe	Leu	Ser
			325					330					335		
Phe	Lys	Ser	Lys	Lys	Leu	Glu	Lys	Ser	Glu	Lys	Gly	Lys	Asn	Val	Ala
			340					345					350		

Val Ser

<210>537

<211>290

<212>PRT

<213>Chlamydia pneumoniae

<400>537

Gln	Ala	Lys	Ser	Arg	Cys	Ser	Ile	Asp	Lys	Tyr	Ile	Pro	Val	Val	Asn
1				5					10					15	
Arg	Leu	Leu	Glu	Val	Cys	Gly	Leu	Pro	Glu	Ala	Glu	Asn	Val	Glu	Asp
		20						25					30		
Leu	Ile	Glu	Ser	Ser	Ser	Ala	Trp	Val	Leu	Thr	Pro	Glu	Glu	Arg	Phe
	35					40					45				
Ser	Gly	Glu	Leu	Val	Ser	Ile	Cys	Gln	Val	Lys	Asp	Glu	His	Ala	Phe
	50				55					60					
Tyr	Asn	Asp	Leu	Ser	Leu	Leu	His	Met	Thr	Gln	Ala	Val	Pro	Ser	Tyr
	65				70					75				80	
Ser	Ala	Thr	Tyr	Asp	Cys	Ala	Val	Val	Phe	Gly	Gly	Pro	Leu	Pro	Ala
			85					90					95		

Leu Arg Gln Arg Leu Asp Phe Leu Val Arg Glu Trp Gln Arg Gly Val

100 105 110
 Arg Phe Lys Lys Ile Val Phe Leu Cys Gly Glu Arg Gly Arg Tyr Gln
 115 120 125
 Ser Ile Glu Glu Gln Glu His Phe Phe Asp Ser Arg Tyr Asn Pro Phe
 130 135 140
 Pro Thr Glu Glu Asn Trp Glu Ser Gly Asn Arg Val Thr Pro Ser Ser
 145 150 155 160
 Glu Glu Glu Val Ala Lys Phe Val Trp Met Gln Met Leu Leu Pro Arg
 165 170 175
 Ala Trp Arg Asp Ser Thr Ser Gly Val Arg Val Thr Phe Leu Leu Ala
 180 185 190
 Lys Pro Glu Asn Arg Val Val Ala Asn Arg Lys Asp Thr Leu Leu
 195 200 205
 Leu Phe Arg Ser Tyr Gln Glu Ala Phe Pro Gly Arg Val Leu Phe Val
 210 215 220
 Ser Ser Gln Pro Phe Ile Gly Leu Asp Ala Cys Arg Val Gly Gln Phe
 225 230 235 240
 Phe Lys Gly Glu Ser Tyr Asp Leu Ala Gly Pro Gly Phe Ala Gln Gly
 245 250 255
 Val Leu Lys Tyr His Trp Ala Pro Arg Ile Cys Leu His Thr Leu Ala
 260 265 270
 Glu Trp Leu Lys Glu Thr Asn Gly Cys Leu Asn Ile Ser Glu Gly Cys
 275 280 285
 Phe Gly
 290

<210>538

<211>400

<212>PRT

<213>Chlamydia pneumoniae

<400>538

Leu Ser Val Tyr Leu Leu Ile Phe Tyr Phe Cys Asn Cys Ser Thr Met
 1 5 10 15
 Ser Ser Val Asn Gln Ser Ser Gly Thr Pro Asn Pro Glu Glu Val Thr
 20 25 30
 Ser Pro Glu Ser Thr Glu Glu Asn Lys Asn Val Val Ser Ser Asp Glu
 35 40 45
 Ala Gln Ala Thr His Ala Val Ala Leu Pro Ile Val Thr Gln Leu Ser
 50 55 60
 Leu Pro Glu Gly Val Gly Thr Ser Ser Glu Glu Thr Ala Ser Asn Pro
 65 70 75 80
 Lys Val Asp Glu Ile Val Ala Glu Val Ser Ser Ser Arg Ala Val Ala
 85 90 95
 Asp Gln Ile Ser Ser Leu Val Glu Arg Val Gly Glu Leu Leu Asp Asp
 100 105 110
 Leu Lys Gly Ala Gln Ser Leu Phe Thr Ser Phe Gln Ser Glu Leu Lys
 115 120 125
 Asn Cys Leu Pro Ala Trp Lys Ser Ser Thr Arg Arg Leu Glu Thr Arg
 130 135 140
 Gly Ala Gly Asp Asn Ala Asp Ile Ala Arg Leu Glu Leu Phe Arg Ser
 145 150 155 160
 Asp Tyr Glu Ala Val Leu Gly His Ala Asn Gln Phe His Gly Lys Ala
 165 170 175
 His Leu Ile Leu Ser Lys Leu Thr Asp Val His His Lys Leu Gln Gly
 180 185 190
 Leu Ser Arg Glu Asp Leu Ser Leu Ala Phe Asp Asn Asn Asp Arg Val
 195 200 205
 Leu Glu His Leu Gly Ser Leu Gly Leu Asp Val Asp Ala Glu Gly Asn
 210 215 220
 Trp Ser Leu Ser Cys Glu Arg Gly Ile Pro Arg Leu Val Leu Thr Ala
 225 230 235 240
 Asp Ser Met Leu Val Gln Ile Lys Lys Val Asn Leu Pro Thr Val Glu
 245 250 255
 Glu Leu Arg Thr Leu Gln Gly Thr Thr Glu Ser Ser Ser Asp Pro Arg
 260 265 270

Val Glu Glu Ser Leu Ser Cys Cys Glu Arg Leu Leu Asn Glu Leu Arg
 275 280 285
 Arg Leu Trp Ala Asn Phe Val Gly Phe Ile Ser Ser Cys Tyr Asp Asn
 290 295 300
 Ile Val Phe Val Leu Met Trp Ile Val Arg Arg Ile Asn Leu Leu Pro
 305 310 315 320
 Gly Leu Gly Cys Leu Pro Phe His Asn Pro Asp Ala Ser Gln Glu Asp
 325 330 335
 Gln Arg Ser Ser Ser Gly Glu Arg Ser Thr Arg Arg Glu Arg Leu Ser
 340 345 350
 Arg Arg Ser Asp Leu Ser Glu Glu Glu Met Ile Val Arg Ala Glu Gly
 355 360 365
 Glu Ser Ile His Pro Glu Ser Pro His Gly Asp Gly Arg Asn Gln Pro
 370 375 380
 Ser Arg Gly Asp Lys Gln Asp Ser Asp Ser Glu Glu Thr Glu Leu
 385 390 395 400
 <210>539
 <211>568
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>539
 Met Lys Thr Ser Gln Leu Phe Tyr Lys Thr Ser Lys Asn Ala Asn Lys
 1 5 10 15
 Ser Ala Ala Val Leu Ser Asn Glu Leu Leu Glu Lys Ala Gly Tyr Leu
 20 25 30
 Phe Lys Val Ser Lys Gly Val Tyr Thr Tyr Thr Pro Leu Leu Trp Arg
 35 40 45
 Val Val Ser Lys Met Met Asn Ile Ile Arg Glu Glu Leu Asn Ala Ile
 50 55 60
 Gly Gly Gln Glu Leu Leu Pro Leu Leu His Asn Ala Glu Leu Trp
 65 70 75 80
 Gln His Thr Gly Arg Trp Glu Ala Phe Thr Ser Glu Gly Leu Leu Tyr
 85 90 95
 Thr Leu Lys Asp Arg Glu Gly Lys Ser His Cys Leu Ala Pro Thr His
 100 105 110
 Glu Glu Val Ile Cys Ser Phe Val Ala Gln Trp Leu Ser Ser Lys Arg
 115 120 125
 Gln Leu Pro Leu His Leu Tyr Gln Ile Ala Thr Lys Phe Arg Asp Glu
 130 135 140
 Ile Arg Pro Arg Phe Gly Leu Ile Arg Ser Arg Glu Leu Leu Met Glu
 145 150 155 160
 Asp Ser Tyr Thr Phe Ser Asp Ser Pro Glu Gln Met Asn Glu Gln Tyr
 165 170 175
 Glu Lys Leu Arg Ser Ala Tyr Ser Lys Ile Phe Asp Arg Leu Gly Leu
 180 185 190
 Ala Tyr Val Ile Val Thr Ala Asp Gly Gly Lys Ile Gly Lys Gly Lys
 195 200 205
 Ser Glu Glu Phe Gln Val Leu Cys Ser Leu Gly Glu Asp Thr Ile Cys
 210 215 220
 Val Ser Gly Ser Tyr Gly Ala Asn Ile Glu Ala Ala Val Ser Ile Pro
 225 230 235 240
 Pro Gln His Ala Tyr Asp Arg Glu Phe Leu Pro Val Glu Glu Val Ala
 245 250 255
 Thr Pro Gly Ile Thr Thr Ile Glu Ala Leu Ala Asn Phe Phe Ser Ile
 260 265 270
 Pro Leu His Lys Ile Leu Lys Thr Leu Val Val Lys Leu Ser Tyr Ser
 275 280 285
 Asn Glu Glu Lys Phe Ile Ala Ile Gly Met Arg Gly Asp Arg Gln Val
 290 295 300
 Asn Leu Val Lys Val Ala Ser Lys Leu Asn Ala Asp Asp Ile Ala Leu
 305 310 315 320
 Ala Ser Asp Glu Glu Ile Glu Arg Val Leu Gly Thr Glu Lys Gly Phe
 325 330 335
 Ile Gly Pro Leu Asn Cys Pro Ile Asp Phe Xaa Ala Asp Glu Thr Thr

340 345 350
 Ser Pro Met Thr Asn Phe Val Cys Ala Gly Asn Ala Lys Asp Lys His
 355 360 365
 Tyr Val Asn Val Asn Trp Asp Arg Asp Leu Leu Pro Pro Gln Tyr Gly
 370 375 380
 Asp Phe Leu Leu Ala Glu Glu Gly Asp Thr Cys Pro Glu Asn Pro Gly
 385 390 395 400
 His Pro Tyr Arg Ile Tyr Gln Gly Ile Glu Val Ala His Ile Phe Asn
 405 410 415
 Leu Gly Thr Arg Tyr Thr Asp Ser Phe Glu Val Asn Phe Gln Asp Glu
 420 425 430
 His Gly Gln Thr Gln Gln Cys Trp Met Gly Thr Tyr Gly Ile Gly Val
 435 440 445
 Gly Arg Thr Leu Ala Ala Cys Val Glu Gln Leu Ala Asp Asp Arg Gly
 450 455 460
 Ile Val Trp Pro Lys Ala Leu Ala Pro Phe Ser Ile Thr Ile Ala Phe
 465 470 475 480
 Asn Gly Gly Asp Thr Val Ser Gln Glu Leu Ala Glu Thr Ile Tyr His
 485 490 495
 Glu Leu Gln Ser Gln Gly Tyr Glu Pro Leu Leu Asp Asp Arg Asp Glu
 500 505 510
 Arg Leu Gly Phe Lys Leu Lys Asp Ser Asp Leu Ile Gly Ile Pro Tyr
 515 520 525
 Lys Leu Ile Leu Gly Lys Ser Tyr Gln Ser Ser Gly Ile Phe Glu Ile
 530 535 540
 Glu Ser Arg Ser Gly Glu Lys Tyr Thr Val Ser Pro Glu Ala Phe Pro
 545 550 555 560
 Thr Trp Cys Gln Asn His Leu Ala
 565

<210>540

<211>126

<212>PRT

<213>Chlamydia pneumoniae

<400>540

Leu Thr Phe Ser Gly Ser Phe Pro Ile Met Leu Ser Val Thr Ile Val
 1 5 10 15
 Leu Val Gly Leu Glu Met Ala Arg Ser Lys Val Ser Lys Arg Asp Ser
 20 25 30
 Lys Ile Leu Asp Ile Leu Phe Ala Thr Thr Glu Leu Tyr Leu Lys Thr
 35 40 45
 Gly Gln Pro Val Gly Ser Lys Thr Leu Lys Glu Ser Phe Cys Ser Asp
 50 55 60
 Leu Ser Thr Ala Thr Ile Arg Asn Tyr Phe Ala Glu Leu Glu Ala Glu
 65 70 75 80
 Gly Phe Leu Lys Xaa Asn His Thr Ser Gly Gly Arg Ile Pro Thr Asp
 85 90 95
 Leu Ala Leu Arg His Tyr Val Asp His Gln Glu Glu Cys Pro Glu Ala
 100 105 110
 Glu Ile Ser Ala Pro Ile Phe Asp Lys Xaa Ser Xaa Leu Pro
 115 120 125

<210>541

<211>304

<212>PRT

<213>Chlamydia pneumoniae

<400>541

Ile Thr Lys Lys Asn Ala Gln Lys Leu Arg Phe Leu Pro Pro Phe Leu
 1 5 10 15
 Ile Xaa Ser Val Xaa Phe Pro Ser Glu Ser Arg Asn Ile Ile Lys Asp
 20 25 30
 Leu Gln Lys Ala Thr Glu Leu Leu Gly Glu Ile Leu Asp Leu Pro Thr
 35 40 45
 Phe Phe Ser Ser Pro Arg Phe Glu Asn Asp Ser Val Thr Asn Ile Gln
 50 55 60
 Ile Thr Gln Val Asp Lys Gln Arg Ala Val Thr Ile Leu Ser Thr Glu

65					70					75					80
Phe	Gly	Gln	Ile	Phe	Thr	Asp	Thr	Leu	Trp	Leu	Pro	Glu	Ala	Cys	Asp
				85					90					95	
Thr	Leu	Ser	Ile	Lys	Arg	Ile	Glu	Lys	Phe	Leu	Gln	Asn	Tyr	Ile	Arg
			100					105				110			
Lys	Leu	Pro	Thr	Asn	Glu	Glu	Leu	Ser	Lys	Lys	Glu	Glu	His	Leu	Ser
		115					120				125				
Met	Ser	Leu	Tyr	Asn	Glu	Val	Val	Val	Arg	Tyr	Leu	Thr	Arg	Tyr	Cys
		130				135					140				
Asn	Phe	Ser	Glu	Glu	Asp	Leu	Tyr	Gln	Thr	Gly	Met	Ser	Lys	Leu	Leu
145					150					155					160
Lys	Tyr	Glu	Ala	Phe	Lys	Asp	Pro	Glu	Val	Leu	Ala	Leu	Gly	Leu	Ser
				165					170					175	
Leu	Phe	Glu	Asn	Arg	Arg	Gln	Met	Cys	Glu	Leu	Leu	Asn	Ile	Gly	Met
			180					185					190		
His	Lys	Gly	Arg	Ala	Thr	Ala	Phe	Ile	Gly	Lys	Glu	Leu	Ser	Asp	Ile
		195					200					205			
Leu	Gly	Thr	Ser	Asn	Pro	Gly	Cys	Ser	Val	Ile	Thr	Ile	Pro	Tyr	Tyr
	210					215					220				
Met	Asn	Arg	Ser	Pro	Leu	Gly	Ala	Leu	Gly	Ile	Leu	Gly	Pro	Ile	Asn
225					230				235						240
Leu	Pro	Tyr	Lys	Glu	Ala	Leu	Pro	Leu	Leu	Lys	Leu	Phe	Ala	Asn	Lys
				245					250					255	
Ile	Asn	Glu	Thr	Leu	Thr	Gln	Ser	Phe	Tyr	Lys	Phe	Lys	Leu	Ser	Phe
			260					265					270		
Arg	Arg	Pro	Leu	Thr	Ser	Asn	Cys	Lys	Leu	Ser	Asn	Glu	Pro	Ile	Leu
		275					280					285			
Arg	Thr	Glu	Tyr	Ser	Ser	Ile	Lys	Leu	Leu	Pro	Ser	Lys	Glu	Thr	Leu
	290					295					300				

<210>542

<211>184

<212>PRT

<213>Chlamydia pneumoniae

<400>542

Met	Thr	Asp	Thr	Pro	Pro	Glu	Asn	Glu	Glu	Gln	His	Glu	Ser	Asn	Val
1				5					10					15	
Gln	Asn	Glu	Asn	Glu	Val	Glu	His	Leu	Gln	Gln	Glu	Ile	Val	Thr	Leu
			20					25					30		
Lys	Thr	Glu	Leu	Lys	Glu	Lys	Asn	Asp	Lys	Tyr	Leu	Met	Ala	Leu	Ala
	35					40					45				
Glu	Ser	Glu	Asn	Ser	Arg	Lys	Arg	Leu	Gln	Lys	Glu	Arg	Gln	Glu	Leu
	50					55				60					
Met	Gln	Tyr	Ala	Leu	Glu	Asn	Thr	Leu	Ile	Asp	Phe	Leu	Asn	Pro	Ile
	65				70					75					80
Glu	Ser	Met	Glu	Lys	Ala	Leu	Gly	Phe	Ala	Thr	Gln	Met	Ser	Asp	Asp
			85					90						95	
Val	Lys	Asn	Trp	Ala	Leu	Gly	Phe	Asn	Met	Ile	Leu	Asn	Gln	Phe	Lys
		100					105						110		
Gln	Ile	Phe	Glu	Glu	Lys	Gly	Ile	Ile	Glu	Tyr	Ser	Ser	Ile	Gly	Gln
	115					120						125			
Lys	Phe	Asn	Pro	Phe	Leu	His	Glu	Ala	Val	Gln	Thr	Glu	Glu	Thr	Ser
	130					135					140				
Glu	Val	Pro	Glu	Gly	Thr	Ile	Leu	Glu	Glu	Phe	Ala	Lys	Gly	Tyr	Lys
145					150					155					160
Ile	Gly	Glu	Arg	Pro	Ile	Arg	Val	Ala	Lys	Val	Lys	Val	Ala	Lys	Ala
			165					170						175	
Pro	Thr	Pro	Lys	Glu	Asn	Lys	Glu								
			180												

<210>543

<211>539

<212>PRT

<213>Chlamydia pneumoniae

<400>543

Met Ser Glu His Lys Lys Ser Ser Lys Ile Ile Gly Ile Asp Leu Gly

1 5 10 15
 Thr Thr Asn Ser Cys Val Ser Val Met Glu Gly Gly Gln Ala Lys Val
 20 25 30
 Ile Thr Ser Ser Glu Gly Thr Arg Thr Thr Pro Ser Ile Val Ala Phe
 35 40 45
 Lys Gly Asn Glu Lys Leu Val Gly Ile Pro Ala Lys Arg Gln Ala Val
 50 55 60
 Thr Asn Pro Glu Lys Thr Leu Gly Ser Thr Lys Arg Phe Ile Gly Arg
 65 70 75 80
 Lys Tyr Ser Glu Val Ala Ser Glu Ile Gln Thr Val Pro Tyr Thr Val
 85 90 95
 Thr Ser Gly Ser Lys Gly Asp Ala Val Phe Glu Val Asp Gly Lys Gln
 100 105 110
 Tyr Thr Pro Glu Glu Ile Gly Ala Gln Ile Leu Met Lys Met Lys Glu
 115 120 125
 Thr Ala Glu Ala Tyr Leu Gly Glu Thr Val Thr Glu Ala Val Ile Thr
 130 135 140
 Val Pro Ala Tyr Phe Asn Asp Ser Gln Arg Ala Ser Thr Lys Asp Ala
 145 150 155 160
 Gly Arg Ile Ala Gly Leu Asp Val Lys Arg Ile Ile Pro Glu Pro Thr
 165 170 175
 Ala Ala Ala Leu Ala Tyr Gly Ile Asp Lys Val Gly Asp Lys Lys Ile
 180 185 190
 Ala Val Phe Asp Leu Gly Gly Gly Thr Phe Asp Ile Ser Ile Leu Glu
 195 200 205
 Ile Gly Asp Gly Val Phe Glu Val Leu Ser Thr Asn Gly Asp Thr Leu
 210 215 220
 Leu Gly Gly Asp Asp Phe Asp Glu Val Ile Ile Lys Trp Met Ile Glu
 225 230 235 240
 Glu Phe Lys Lys Gln Glu Gly Ile Asp Leu Ser Lys Asp Asn Met Ala
 245 250 255
 Leu Gln Arg Leu Lys Asp Ala Ala Glu Lys Ala Lys Ile Glu Leu Ser
 260 265 270
 Gly Val Ser Ser Thr Glu Ile Asn Gln Pro Phe Ile Thr Met Asp Ala
 275 280 285
 Gln Gly Pro Lys His Leu Ala Leu Thr Leu Thr Arg Ala Gln Phe Glu
 290 295 300
 Lys Leu Ala Ala Ser Leu Ile Glu Arg Thr Lys Ser Pro Cys Ile Lys
 305 310 315 320
 Ala Leu Ser Asp Ala Lys Leu Ser Ala Lys Asp Ile Asp Asp Val Leu
 325 330 335
 Leu Val Gly Gly Met Ser Arg Met Pro Ala Val Gln Glu Thr Val Lys
 340 345 350
 Glu Leu Phe Gly Lys Glu Pro Asn Lys Gly Val Asn Pro Asp Glu Val
 355 360 365
 Val Ala Ile Gly Ala Ala Ile Gln Gly Gly Val Leu Gly Gly Glu Val
 370 375 380
 Lys Asp Val Leu Leu Leu Asp Val Ile Pro Leu Ser Leu Gly Ile Glu
 385 390 395 400
 Thr Leu Gly Gly Val Met Thr Thr Leu Val Glu Arg Asn Thr Thr Ile
 405 410 415
 Pro Thr Gln Lys Lys Gln Ile Phe Ser Thr Ala Ala Asp Asn Gln Pro
 420 425 430
 Ala Val Thr Ile Val Val Leu Gln Gly Glu Arg Pro Met Ala Lys Asp
 435 440 445
 Asn Lys Glu Ile Gly Arg Phe Asp Leu Thr Asp Ile Pro Pro Ala Pro
 450 455 460
 Arg Gly His Pro Gln Ile Glu Val Ser Phe Asp Ile Asp Ala Asn Gly
 465 470 475 480
 Ile Phe His Val Ser Ala Lys Asp Val Ala Ser Gly Lys Glu Gln Lys
 485 490 495
 Ile Arg Ile Glu Ala Ser Ser Gly Leu Gln Glu Asp Glu Ile Gln Arg
 500 505 510
 Met Val Arg Asp Ala Glu Ile Asn Lys Glu Glu Asp Lys Asn Val Val

515 520 525
 Lys Leu Gln Met Leu Lys Met Lys Pro Ile Ala
 530 535
 <210>544
 <211>135
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>544
 Lys Arg Arg Glu Ala Ser Asp Ala Lys Asn Glu Ala Asp Ser Met Ile
 1 5 10 15
 Phe Arg Ala Glu Lys Ala Ile Lys Asp Tyr Lys Glu Gln Ile Pro Glu
 20 25 30
 Thr Leu Val Lys Glu Ile Glu Glu Arg Ile Glu Asn Val Arg Asn Ala
 35 40 45
 Leu Lys Asp Asp Ala Pro Ile Glu Lys Ile Lys Glu Val Thr Glu Asp
 50 55 60
 Leu Ser Lys His Met Gln Lys Ile Gly Glu Ser Met Gln Ser Gln Ser
 65 70 75 80
 Ala Ser Ala Ala Ala Ser Ser Ala Ala Asn Ala Lys Gly Gly Pro Asn
 85 90 95
 Ile Asn Thr Glu Asp Leu Lys Lys His Ser Phe Ser Thr Lys Pro Pro
 100 105 110
 Ser Asn Asn Gly Ser Ser Glu Asp His Ile Glu Glu Ala Asp Val Glu
 115 120 125
 Ile Ile Asp Asn Asp Asp Lys
 130 135
 <210>545
 <211>234
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>545
 Ala Thr Gln Phe Thr Ser Glu Thr Thr Gly Phe Leu Val Gln Cys Pro
 1 5 10 15
 Lys Leu Thr Gly Gly Ala Gln Leu Leu Lys Lys Pro Lys Arg Lys Pro
 20 25 30
 Gly Arg Arg Thr Tyr Gly Lys Ser Leu Lys Ile Phe Ile Pro Gly Thr
 35 40 45
 Leu Phe Val His Ala Arg Lys Gly Phe Gly Phe Val Ser Pro Asp Asn
 50 55 60
 Pro Glu Glu Tyr Pro Phe Asp Ile Phe Val Pro Ala Arg Asp Leu Arg
 65 70 75 80
 Gly Ala Leu Asp Gly Asp His Val Ile Val Ser Val Leu Pro Tyr Pro
 85 90 95
 Arg Asp Gly Gln Lys Leu Lys Gly Thr Ile Ser Glu Val Leu Ala Arg
 100 105 110
 Gly Lys Thr Thr Leu Val Gly Thr Ile Thr Ser Leu Val Ser Pro Thr
 115 120 125
 Ser Ala Leu Ala Tyr Thr Ser Met Ser Gly Ser Gln Ser Leu Ile Pro
 130 135 140
 Val Glu Leu Leu Pro Gly Arg Thr Tyr Lys Ile Gly Asp Arg Ile Leu
 145 150 155 160
 Leu Ser Thr Pro Pro Trp Val Asp Lys Pro Gln Glu Gly Ala Ser Pro
 165 170 175
 Ala Leu Gln Met Leu Glu Phe Ile Gly His Ile Thr Asn Ala Lys Ala
 180 185 190
 Asp Phe Gln Ala Ile Gln Ala Glu Tyr Asn Leu Ala Glu Glu Phe Pro
 195 200 205
 Pro Glu Val Ile Glu Glu Ala Ser Leu Phe Ser Gln Xaa Xaa Leu Thr
 210 215 220
 Gln Val Leu Gln Leu Ser Gln Arg Ser Pro
 225 230
 <210>546
 <211>258
 <212>PRT

WO 99/27105

<213>Chlamydia pneumoniae

<400>546

Pro Lys Phe Ser Asn Ser Arg Lys Asp Leu Arg Asp Leu Leu Cys Phe
 1 5 10 15
 Thr Ile Asp Ser Ser Thr Ala Arg Asp Phe Asp Asp Ala Ile Ser Leu
 20 25 30
 Thr Tyr Asp His Asn Asn Asn Tyr Ile Leu Gly Val His Ile Ala Asp
 35 40 45
 Val Ser His Tyr Val Thr Pro His Ser His Leu Asp Lys Glu Ala Ala
 50 55 60
 Lys Arg Cys Asn Ser Thr Tyr Phe Pro Gly Lys Val Ile Pro Met Leu
 65 70 75 80
 Pro Ser Ala Leu Ser Asp Asn Leu Cys Ser Leu Lys Pro Asn Val Asp
 85 90 95
 Arg Leu Ala Val Ser Val Phe Met Thr Phe Thr Lys Ser Gly His Leu
 100 105 110
 Ser Asp Tyr Gln Ile Phe Arg Ser Val Ile Arg Ser Lys Tyr Arg Met
 115 120 125
 Thr Tyr Asp Glu Val Asp Asn Ile Ile Glu Lys Lys His Ser His Pro
 130 135 140
 Leu Ser Lys Ile Leu Asn Glu Met Ala Thr Leu Ser Lys Lys Phe Ser
 145 150 155 160
 Asp Ile Arg Glu Glu Arg Gly Cys Ile Arg Phe Val Leu Pro Ser Val
 165 170 175
 Thr Met Ser Leu Asp Asn Leu Gln Glu Pro Val Ala Leu Ile Glu Asn
 180 185 190
 His Gln Thr Phe Ser His Lys Leu Ile Glu Glu Phe Met Leu Lys Ala
 195 200 205
 Asn Glu Val Val Ala Tyr His Ile Ser His Gln Gly Val Ser Leu Pro
 210 215 220
 Phe Arg Ser His Glu Pro Pro Asn Asp Glu Asn Leu Leu Ala Phe Gln
 225 230 235 240
 Glu Xaa Ala Lys Asn Met Gly Phe Asp Ile Thr Phe Thr Pro Thr Gln
 245 250 255
 Arg Thr

<210>547

<211>286

<212>PRT

<213>Chlamydia pneumoniae

<400>547

Lys Thr Thr Arg Pro Ser Pro Ile Asn Ser Ser Lys Ser Leu Cys Leu
 1 5 10 15
 Lys Gln Thr Lys Trp Ser Pro Ile Ile Ser Pro Ile Lys Ala Phe Leu
 20 25 30
 Tyr Leu Phe Val Val Thr Asn Leu Pro Met Met Lys Thr Tyr Ser Pro
 35 40 45
 Ser Lys Xaa Xaa Gln Lys Thr Trp Ala Leu Ile Ser Arg Ser Leu Pro
 50 55 60
 His Lys Glu Pro Asp Tyr Gln Tyr Leu Leu Gln Thr Thr Ser Ala Gly
 65 70 75 80
 His Pro Leu Glu Gln Val Leu His Ser Gln Phe Val Arg Ser Met Lys
 85 90 95
 Thr Ala Ser Tyr Ser Thr Glu Asn Lys Gly His Tyr Gly Leu Lys Leu
 100 105 110
 Asp Tyr Tyr Thr His Phe Thr Ser Pro Ile Arg Arg Tyr Ile Asp Leu
 115 120 125
 Ile Val His Arg Leu Leu Phe Asn Pro Leu Ser Ile Asp Gln Thr His
 130 135 140
 Leu Glu Ile Ile Val Arg Ala Cys Ser Thr Lys Glu Arg Val Ser Ala
 145 150 155 160
 Lys Ala Glu Asn Ser Phe Glu Asn Leu Lys Lys Thr Arg Phe Ile Asn
 165 170 175
 Lys Phe Leu Gln Glu Gln Pro Lys Thr Thr Tyr His Ala Tyr Ile Ile

180	185	190
Thr Ala Asn His Glu Gly Leu Ser Phe Val Val Thr Glu Phe Cys His		
195	200	205
Glu Gly Phe Ile Ala Ala Ala Glu Leu Pro Lys Glu Tyr Ser Leu Lys		
210	215	220
Lys Asn Ala Leu Pro Glu Ser Ile Pro Asp Lys Met Lys Pro Gly Ala		
225	230	235
Ser Arg Lys Val Thr Ile Asp Ser Val Asn Leu Leu Thr Gln Lys Ile		
245	250	255
Val Trp Ser Ile Ala Thr Thr Thr Glu Asp Lys Pro Lys Lys Ile Lys		
260	265	270
Lys Thr Pro Ser Lys Lys Lys Gly Thr Lys Lys Arg Ala Ser		
275	280	285

<210>548

<211>201

<212>PRT

<213>Chlamydia pneumoniae

<400>548

Lys Glu Pro Arg Asn Val Leu Gln Glu His Phe Phe Leu Ser Glu Asp		
1	5	10
Val Ile Thr Leu Ala Gln Gln Leu Leu Gly His Lys Leu Ile Thr Thr		
20	25	30
His Glu Gly Leu Ile Thr Ser Gly Tyr Ile Val Glu Thr Glu Ala Tyr		
35	40	45
Arg Gly Pro Asp Asp Lys Ala Cys His Ala Tyr Asn Tyr Arg Lys Thr		
50	55	60
Gln Arg Asn Arg Ala Met Tyr Leu Lys Arg Gly Ser Ala Tyr Leu Tyr		
65	70	75
Arg Cys Tyr Gly Met His His Leu Leu Asn Val Val Thr Gly Pro Glu		
85	90	95
Asp Ile Pro His Ala Val Leu Ile Arg Ala Ile Leu Pro Asp Gln Gly		
100	105	110
Lys Glu Leu Met Ile Gln Arg Arg Gln Trp Arg Asp Lys Pro Pro His		
115	120	125
Leu Leu Thr Asn Gly Pro Gly Lys Val Cys Gln Ala Leu Gly Ile Ser		
130	135	140
Leu Glu Asn Asn Arg Gln Arg Leu Asn Thr Pro Ala Leu Tyr Ile Ser		
145	150	155
Lys Glu Lys Ile Ser Gly Thr Leu Thr Ala Thr Ala Arg Ile Gly Ile		
165	170	175
Asp Tyr Ala Gln Glu Tyr Arg Asp Val Pro Trp Arg Phe Leu Leu Ser		
180	185	190
Pro Glu Asp Ser Gly Lys Val Leu Ser		
195	200	

<210>549

<211>189

<212>PRT

<213>Chlamydia pneumoniae

<400>549

Ala Trp Leu Arg Asn Ser Leu Thr Lys Phe Ser Phe Tyr Thr Lys His		
1	5	10
Arg Ala Leu Leu Lys Phe Val Leu Gln Ile Ile Leu Leu Phe Gly Leu		
20	25	30
Phe Phe Ala Thr Val Leu Leu Gly Phe Leu Thr Arg Ile Met Ile Phe		
35	40	45
Lys Ser Leu Leu Ser Ile Tyr Asp Lys Ile Leu His Arg Ile Pro Ile		
50	55	60
Ile Lys Thr Val Tyr Lys Ala Ala Gln Gln Val Met Thr Thr Ile Phe		
65	70	75
Gly Ser Lys Ser Gly Ser Phe Lys Gln Val Val Met Val Pro Phe Pro		
85	90	95
Asn Ala Asn Val Gln Cys Ile Gly Leu Val Ala Gly Asp Ala Pro Thr		
100	105	110
Val Cys Cys Thr Gly Glu Lys Glu Asp Asp Pro Leu Val Thr Val Phe		

115 120 125
 Ile Pro Thr Thr Pro Asn Pro Thr Ser Gly Phe Leu Thr Leu Phe Arg
 130 135 140
 Lys Ser Asp Ile Val Phe Leu Asp Met Lys Ile Glu Asp Ala Phe Lys
 145 150 155 160
 Tyr Ile Ile Ser Cys Gly Val Leu Ser Thr Pro Met Ala Cys Pro Ser
 165 170 175
 Ser Pro Leu Pro Asp Glu Leu His Gln Asp Gln Gly Ser
 180 185
 <210>550
 <211>390
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>550
 Gln Leu Asn Met Leu His Ile Leu Leu Ala Ile Phe Cys Ile Leu Leu
 1 5 10 15
 Phe Leu Ala Phe Gly Leu Thr Gln Pro Ser Cys His Gly Ser Ser Lys
 20 25 30
 Phe Leu Lys Thr Leu Asn Gln Arg Phe Phe Thr Asp Lys Gly Arg Glu
 35 40 45
 Tyr Pro Pro Phe Pro Ser Ala Pro Thr Ile Leu Ala Thr Leu Leu Cys
 50 55 60
 Ile Leu Tyr Gly Ala Leu Gly Thr Lys Leu Tyr Thr Leu Leu Pro Pro
 65 70 75 80
 Lys Thr Ala His Lys Asp Leu Leu Phe Trp Pro Leu Tyr Ser Leu Ser
 85 90 95
 Ala Leu Ile Ala Tyr Gly Phe Leu Pro Pro Trp Ile Ser Thr Lys Val
 100 105 110
 Pro Lys Glu Thr Thr Ala His Leu Arg Phe Leu Ala Ser Val Phe Gln
 115 120 125
 Leu Gly Leu Phe Pro Leu Gln Leu Leu Phe Tyr Arg Arg Arg Pro Asn
 130 135 140
 Gln Gln Val Arg Ser Ser Thr Ser Phe Gln Ser Gln Leu Ser Glu Ala
 145 150 155 160
 Leu Ser Ala Phe Asp Asn Leu Ile Val Arg Glu Val Met Ile Pro Lys
 165 170 175
 Val Asp Ile Phe Ala Leu Pro Glu Glu Thr Thr Leu Gln Glu Ala Leu
 180 185 190
 Val Leu Val Ser Glu Glu Gly Tyr Ser Arg Val Pro Val Tyr Lys Lys
 195 200 205
 Asn Leu Asp Asn Ile Thr Gly Ile Leu Leu Val Lys Asp Leu Leu Leu
 210 215 220
 Leu Tyr Thr Ser Ser His Asp Leu Ser Gln Pro Ile Ser Ser Val Ala
 225 230 235 240
 Lys Pro Pro Phe Tyr Ala Pro Glu Ile Lys Lys Ala Ser Ser Leu Leu
 245 250 255
 Gln Glu Phe Arg Gln Lys His Arg His Leu Ala Ile Ile Val Asn Glu
 260 265 270
 Tyr Gly Phe Thr Glu Gly Ile Ala Thr Met Glu Asp Ile Ile Glu Glu
 275 280 285
 Ile Ile Gly Glu Ile Ala Asp Glu His Asp Val Gln Glu Asn Thr Pro
 290 295 300
 Tyr Lys Lys Ile Gly Ser Ser Trp Ile Val Asp Gly Arg Met Asn Ile
 305 310 315 320
 Ser Asp Ala Glu Glu Tyr Phe Asn Leu Lys Ile Asp His Glu Asn Ser
 325 330 335
 Tyr Asp Thr Leu Gly Gly His Val Phe His Lys Val Gly Ala Val Pro
 340 345 350
 Gln Lys Gly Met Arg Ile His His Glu Asn Phe Asp Ile Glu Ile Ile
 355 360 365
 Thr Cys Thr Glu Arg Asn Val Gly Lys Leu Lys Ile Thr Pro Arg Lys
 370 375 380
 Arg Lys Phe Asn Ile Ser
 385 390

<210>551
 <211>116
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>551

Met	Ser	Asp	Ile	Gln	Lys	Glu	Glu	His	Gly	Ser	Thr	Thr	Ile	Phe	His
1				5					10					15	
Leu	His	Gly	Lys	Leu	Asp	Gly	Ile	Ser	Ser	Pro	Glu	Val	Gln	Glu	Asn
			20					25					30		
Ile	Tyr	Gln	Ser	Leu	Ala	Ala	Gly	Ser	Lys	Asn	Ile	Ile	Leu	Asp	Cys
		35					40					45			
Ala	His	Leu	Asp	Tyr	Met	Ser	Ser	Ala	Gly	Ile	Arg	Val	Leu	Leu	Gln
	50					55					60				
Ser	Tyr	His	Gln	Val	Gly	Gln	His	Ser	Gly	Lys	Ile	Val	Leu	Thr	Thr
	65				70					75					80
Val	Pro	Lys	Thr	Ile	Glu	Gln	Thr	Leu	Tyr	Val	Thr	Gly	Phe	Leu	Ser
				85					90					95	
Tyr	Phe	Lys	Ile	Phe	Asn	Thr	Val	Asp	Glu	Ala	Ile	Gln	Thr	Leu	Asn
			100					105						110	
Lys	Asp	Gly	Asp												
			115												

<210>552
 <211>212
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>552

Ser	Leu	Pro	Leu	Thr	Met	Arg	Arg	Ser	Val	Cys	Tyr	Val	Asn	Pro	Ser
1				5					10					15	
Ile	Ala	Arg	Ala	Gly	Gln	Ile	Ser	Thr	Trp	Lys	Phe	Leu	Tyr	Ser	Leu
			20					25					30		
Ala	Thr	Pro	Leu	Pro	Ala	Gly	Thr	Lys	Cys	Lys	Phe	Asp	Leu	Ala	Gly
		35					40					45			
Ser	Gly	Lys	Pro	Thr	Asp	Trp	Glu	Ala	Pro	Ala	Thr	Asp	Leu	Ser	Gln
	50					55					60				
Thr	Arg	Asn	Val	Ile	Tyr	Ala	Glu	Met	Pro	Glu	Gly	Glu	Ile	Ile	Glu
	65				70					75					80
Ala	Thr	Ala	Ile	Pro	Val	Lys	Asp	Asn	Pro	Val	Pro	Gln	Phe	Glu	Phe
				85					90					95	
Thr	Leu	Pro	Tyr	Glu	Leu	Gln	Val	Gly	Glu	Thr	Leu	Thr	Ile	Val	Met
		100						105					110		
Gly	Ala	Ser	Pro	Asn	His	Pro	Gln	Val	Asp	Asp	Ala	Gly	Asn	Gly	Ala
		115					120					125			
Gln	Leu	Phe	Ala	Gln	Arg	Arg	Lys	Pro	Phe	Tyr	Leu	Tyr	Ile	Asp	Pro
	130						135				140				
Thr	Gly	Glu	Gly	Asn	Tyr	Asp	Glu	Pro	Asp	Val	Phe	Ser	Met	Asp	Ile
	145				150					155					160
Arg	Gly	Asn	Val	Leu	Lys	Lys	Ile	Glu	Ile	Phe	Thr	Pro	Ser	Tyr	Val
				165					170					175	
Val	Lys	Asn	Lys	Arg	Phe	Asp	Ile	Thr	Val	Arg	Phe	Glu	Asp	Glu	Phe
			180					185					190		
Gly	Asn	Leu	Thr	Asn	Phe	Ser	Pro	Glu	Glu	Asp	Pro	Asn	Arg	Ala	Phe
		195					200						205		
Leu	Arg	Ala	Ser												
			210												

<210>553
 <211>457
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>553

Arg	Ser	Leu	Leu	Pro	Pro	Met	Ser	Leu	Lys	Thr	Asn	Ala	Ser	Ile	Ser
1				5					10					15	
Pro	Cys	Asp	Leu	Lys	Thr	Asn	Ser	Gly	Thr	Ser	Pro	Thr	Ser	Leu	Leu
			20					25					30		
Lys	Lys	Thr	Arg	Ile	Glu	Leu	Ser	Tyr	Glu	His	Leu	Arg	Glu	Asn	Leu

35 40 45
 Asn Trp Gln Leu Phe Ile Pro Glu Thr Gly Phe Val Ile Leu Pro Asn
 50 55 60
 Leu Tyr Phe Asn Glu Pro Gly Ile Tyr Arg Ile Gln Leu Lys Asn Leu
 65 70 75 80
 Ser Thr Gln Xaa Ile Phe Ile Ser Ala Pro Ile Lys Cys Phe Ala Asp
 85 90 95
 Ser Ala Pro Asn Leu Met Trp Gly Leu Leu His Gly Glu Ser Glu Arg
 100 105 110
 Val Asp Ser Glu Glu Asn Ile Glu Thr Cys Met Arg Tyr Phe Arg Asp
 115 120 125
 Asp Arg Ala Leu Asn Phe Tyr Ala Ser Ser Ser Phe Glu Asn Gln Glu
 130 135 140
 Asn Leu Ser Pro Asp Ile Trp Lys Leu Ile Asn Gln Thr Val Ser Asp
 145 150 155 160
 Phe Asn Glu Glu Asp Arg Phe Ile Thr Leu Ser Gly Phe Gln Tyr Ser
 165 170 175
 Gly Glu Pro His Leu Glu Gly Val Arg His Ile Leu His Thr Lys Glu
 180 185 190
 Thr Lys Ser His Ser Lys His Lys Glu Tyr Lys His Ile Pro Leu Ala
 195 200 205
 Lys Leu Tyr Lys Ser Thr Val Asn His Asp Met Ile Ser Ile Pro Ser
 210 215 220
 Phe Thr Ala Ser Lys Glu His Gly Phe Asp Phe Glu Asn Phe Tyr Pro
 225 230 235 240
 Glu Phe Glu Arg Val Val Glu Ile Tyr Asn Ala Trp Gly Ser Ser Glu
 245 250 255
 Thr Thr Ala Ala Leu Asn Asn Pro Phe Pro Ile Gln Gly Lys Asp Ser
 260 265 270
 Glu Asp Pro Arg Gly Thr Val Ile Glu Gly Leu Lys Lys Asn Leu Arg
 275 280 285
 Phe Gly Phe Val Ala Gly Gly Leu Asp Asp Arg Gly Ile Tyr Lys Asp
 290 295 300
 Tyr Phe Asp Ser Pro Gln Val Gln Tyr Ser Pro Gly Leu Thr Ala Ile
 305 310 315 320
 Ile Cys Asn Lys Tyr Thr Arg Glu Ser Leu Val Glu Ala Leu Phe Ala
 325 330 335
 Arg His Cys Tyr Ala Thr Thr Gly Pro Arg Ile Val Leu Ser Phe Asn
 340 345 350
 Ile Thr Ser Ala Pro Met Gly Ser Glu Leu Ser Thr Gly Ser Lys Pro
 355 360 365
 Gly Leu Asn Val Asn Arg His Ile Ser Gly His Val Ala Gly Thr Ala
 370 375 380
 Leu Leu Lys Thr Val Glu Ile Ile Arg Asn Gly Glu Val Leu His Thr
 385 390 395 400
 Phe Phe Pro Asp Ser Asn Asn Leu Asp Tyr Glu Tyr Asp Asp Met Val
 405 410 415
 Pro Leu Ser Ser Val Thr Leu Lys Asp Pro Asn Gly Lys Ala Pro Phe
 420 425 430
 Val Phe Tyr Tyr Leu Arg Val Thr Gln Ala Asp Asn Ala Met Ala Trp
 435 440 445
 Ser Ser Pro Ile Trp Val Asp Leu Asn
 450 455
 <210>554
 <211>409
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>554
 Leu Ala Gly Pro Ser Leu Lys Gly Val Lys Asn Gln Ile Ala Ala Lys
 1 5 10 15
 Lys Lys His Val Thr Lys Gln Ser Thr Val Leu Gln Asn Leu Glu Arg
 20 25 30
 Ile Val His Gln Ser Val His Gln Met Thr Thr Cys Leu Pro Gln Pro
 35 40 45

Pro Lys Thr Ser Pro Pro Tyr Ser Ile Phe Glu Lys Leu Asp Ala Gln
 50 55 60
 Glu Arg Leu Ser Ser Glu Asp Ala Leu His Leu Leu Leu Thr Asn
 65 70 75 80
 Lys Glu Asp Gln Arg Thr Leu Trp Asn Phe Ala Asp Gln Val Arg Lys
 85 90 95
 Gln Arg Val Gly Asp Thr Val Tyr Tyr Ser Ser Thr Leu Tyr Leu Tyr
 100 105 110
 Pro Thr Asn Phe Cys Asp Phe Ser Cys Lys Phe Cys Ser Phe Tyr Ala
 115 120 125
 Lys Pro Gly Asp Pro Lys Gly Trp Leu Tyr Ser Pro Asp Asp Leu Leu
 130 135 140
 Gln Gln Ile Gln Asn Ile Lys Thr Pro Ile Thr Glu Val His Ile Val
 145 150 155 160
 Gly Gly Cys Phe Pro Ser Cys Asn Leu Gln Tyr Tyr Ser Asp Leu Phe
 165 170 175
 Thr Lys Ile Lys Glu Tyr Asp Pro Gln Ile His Ile Lys Ala Leu Thr
 180 185 190
 Ala Ile Glu Tyr Ala Tyr Leu Ser Asp Leu Asp Asn Leu Ser Ile Arg
 195 200 205
 Asp Val Leu Leu Thr Leu Lys Asp Ala Gly Leu Asp Ser Ile Pro Gly
 210 215 220
 Gly Gly Ala Glu Ile Leu Val Asp Lys Ile Arg Asn Phe Leu Ala Pro
 225 230 235 240
 Lys Arg Leu Ser Ser Ser Asp Phe Leu Asn Ile His Lys Met Ala His
 245 250 255
 Gln Leu Gly Ile His Ser Asn Ile Thr Met Leu Cys Tyr His Lys Glu
 260 265 270
 Gly Pro Glu Asp Leu Val Thr His Met Val Lys Val Arg Asp Leu Gln
 275 280 285
 Asp Glu Thr Gln Gly Phe Lys Asn Phe Ile Leu Leu Lys Phe Ala Gln
 290 295 300
 Glu Asn Asn Val Leu Gly Lys Arg Leu Arg Lys Ser Gly Gln Gly His
 305 310 315 320
 Ala Ile Pro Leu Lys Ser Leu Met Ala Val Ala Arg Ile Phe Leu Asp
 325 330 335
 Asn Phe Ser Asn Met Lys Ala Leu Trp Asn Tyr Leu Gly Ile Glu Ala
 340 345 350
 Ala Leu Asp Leu Leu Ser Cys Gly Ala Asn Asp Leu Ser Ser Thr His
 355 360 365
 Met Gly Glu Lys Val Phe Gln Met Ala Ser Ser Lys Glu Pro Ile Lys
 370 375 380
 Met Asp Ala Glu Gly Met Ala Ala Leu Ile Thr Gln Gln Gly Arg Thr
 385 390 395 400
 Pro Cys Leu Thr Asn Ser Ser His Val
 405

<210>555

<211>277

<212>PRT

<213>Chlamydia pneumoniae

<400>555

Gly Asn Gly Gly Pro His His Thr Thr Arg Glu Asn Ala Met Ser Asn
 1 5 10 15
 Gln Leu Gln Pro Cys Ile Ser Leu Gly Cys Val Ser Tyr Ile Asn Ser
 20 25 30
 Phe Pro Leu Ser Leu Gln Leu Ile Lys Arg Asn Asp Ile Arg Cys Val
 35 40 45
 Leu Ala Pro Pro Ala Asp Leu Leu Asn Leu Leu Ile Glu Gly Lys Leu
 50 55 60
 Asp Val Ala Leu Thr Ser Ser Leu Gly Ala Ile Ser His Asn Leu Gly
 65 70 75 80
 Tyr Val Pro Gly Phe Gly Ile Ala Ala Asn Gln Arg Ile Leu Ser Ala
 85 90 95
 Asn Leu Tyr Ala Ala Pro Thr Phe Phe Asn Ser Pro Gln Pro Arg Ile

WO 99/27105

100 105 110
 Ala Ala Thr Leu Glu Ser Arg Ser Ser Ile Gly Leu Leu Lys Val Leu
 115 120 125
 Cys Arg His Leu Trp Arg Ile Pro Thr Pro His Ile Leu Arg Phe Ile
 130 135 140
 Thr Thr Lys Val Leu Arg Gln Thr Pro Glu Asn Tyr Asp Gly Leu Leu
 145 150 155 160
 Leu Ile Gly Asp Ala Ala Leu Gln His Pro Val Leu Pro Gly Phe Val
 165 170 175
 Thr Tyr Asp Leu Ala Ser Gly Trp Tyr Asp Leu Thr Lys Leu Pro Phe
 180 185 190
 Val Phe Ala Leu Leu Leu His Ser Thr Ser Trp Lys Glu His Pro Leu
 195 200 205
 Pro Asn Leu Ala Met Glu Glu Ala Leu Gln Gln Phe Glu Ser Ser Pro
 210 215 220
 Glu Glu Val Leu Lys Glu Ala His Gln His Thr Gly Leu Pro Pro Ser
 225 230 235 240
 Leu Leu Gln Glu Tyr Tyr Ala Leu Cys Gln Tyr Arg Leu Gly Glu Glu
 245 250 255
 His Tyr Glu Ser Phe Glu Lys Phe Arg Glu Tyr Tyr Gly Thr Leu Tyr
 260 265 270
 Gln Gln Ala Arg Leu
 275

<210>556

<211>237

<212>PRT

<213>Chlamydia pneumoniae

<400>556

Leu Lys Asn Ser Gly Asn Ile Met Glu Pro Ser Thr Asn Lys Pro Asp
 1 5 10 15
 Cys Lys Lys Ile Phe Asp Ser Ile Ala Ser Lys Tyr Asp Arg Thr Asn
 20 25 30
 Thr Ile Leu Ser Leu Gly Met His His Phe Trp Asn Arg Ser Leu Ile
 35 40 45
 Gln Ile Leu Gly Ser Gly Tyr Ser Leu Leu Asp Leu Cys Ala Gly Thr
 50 55 60
 Gly Lys Val Ala Lys Arg Tyr Ile Ala Ala His Pro Gln Ala Ser Val
 65 70 75 80
 Thr Leu Val Asp Phe Ser Ser Ala Met Leu Asp Ile Ala Lys Gln His
 85 90 95
 Leu Pro Gln Gly Ser Cys Ser Phe Ile His Ser Asp Ile Asn Gln Leu
 100 105 110
 Pro Leu Glu Asn His Ser Tyr Pro Leu Ala Ala Met Ala Tyr Gly Leu
 115 120 125
 Arg Asn Leu Ser Asp Pro His Lys Ala Leu Gln Glu Ile Ser Arg Val
 130 135 140
 Leu Met Pro Ser Gly Lys Leu Gly Ile Leu Glu Leu Thr Pro Pro Lys
 145 150 155 160
 Lys Thr His Pro Thr Tyr Ser Ala His Lys Leu Tyr Leu Arg Ala Val
 165 170 175
 Val Pro Trp Ile Gly Lys Ser Val Ser Lys Asp Pro Asp Ala Tyr Ser
 180 185 190
 Tyr Leu Ser Lys Ser Ile Gln Gln Leu Pro Lys Asp His Asp Leu Glu
 195 200 205
 Asp Leu Phe Ser Lys Ser Gly Phe Tyr Ile Ala Lys Lys Lys Lys Leu
 210 215 220
 Phe Leu Gly Ala Ala Thr Ile Trp Leu Leu Glu Lys Gln
 225 230 235

<210>557

<211>550

<212>PRT

<213>Chlamydia pneumoniae

<400>557

Arg Ile Ser Ile Ser Phe Arg Val Ser Trp Phe Val Lys Ile Ile Leu

WO 99/27105

515 520 525
 Arg Thr Lys Leu Val Gly Ser Phe Ala Asp Glu Ser Leu Pro Arg Gly
 530 535 540
 Arg Phe Thr Ile Leu Val
 545 550
 <210>558
 <211>325
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>558
 Phe Met Met Thr Tyr Pro Val Pro Gln Asn Pro Leu Leu Leu Arg Ile
 1 5 10 15
 Leu Arg Leu Met Met Asp Ala Phe Ser Lys Ser Asp Asp Glu Arg Asp Phe
 20 25 30
 Tyr Leu Asp Arg Val Glu Gly Phe Ile Leu Tyr Ile Asp Leu Asp Lys
 35 40 45
 Asp Gln Glu Asp Leu Asn Lys Ile Tyr Gln Glu Leu Glu Glu Asn Ala
 50 55 60
 Glu Arg Tyr Cys Leu Ile Pro Lys Leu Thr Phe Tyr Glu Val Lys Lys
 65 70 75 80
 Ile Met Glu Thr Phe Ile Asn Glu Lys Ile Tyr Asp Ile Asp Thr Lys
 85 90 95
 Glu Lys Phe Leu Glu Ile Leu Gln Ser Lys Asn Ala Arg Glu Gln Phe
 100 105 110
 Leu Glu Phe Ile Tyr Asp His Glu Ala Glu Leu Glu Lys Trp Gln Gln
 115 120 125
 Phe Tyr Val Glu Arg Ser Arg Ile Arg Ile Ile Glu Trp Leu Arg Asn
 130 135 140
 Asn Lys Phe His Phe Val Phe Glu Glu Asp Leu Asp Phe Thr Lys Asn
 145 150 155 160
 Val Leu Glu Gln Leu Lys Ile His Leu Phe Asp Ala Lys Val Gly Lys
 165 170 175
 Glu Ile Thr Gln Ala Arg Gln Leu Leu Ser Asn Lys Ala Lys Ile Tyr
 180 185 190
 Tyr Ser Asn Glu Ala Leu Asn Pro Arg Pro Lys Arg Gly Arg Pro Pro
 195 200 205
 Lys Gln Ser Ala Lys Val Glu Thr Glu Thr Thr Ile Ser Ser Asp Ile
 210 215 220
 Tyr Thr Lys Val Pro Gln Ala Ala Arg Arg Phe Leu Phe Leu Pro Glu
 225 230 235 240
 Ile Thr Ser Pro Ser Ser Ile Thr Phe Ser Glu Lys Phe Asp Thr Glu
 245 250 255
 Glu Glu Phe Leu Ala Asn Leu Arg Gly Ser Thr Arg Val Glu Asp Gln
 260 265 270
 Leu Asn Leu Thr Asn Leu Ser Glu Arg Phe Ala Ser Leu Lys Glu Leu
 275 280 285
 Ser Ala Lys Leu Gly Tyr Asp Ser Leu Ser Thr Gly Asp Phe Phe Gly
 290 295 300
 Asp Asp Asp Glu Lys Val Val Thr Lys Thr Lys Gly Ser Lys Arg Gly
 305 310 315 320
 Arg Lys Lys Ser Ser
 325

<210>559

<211>261

<212>PRT

<213>Chlamydia pneumoniae

<400>559

Leu Val Tyr Trp Met Ala Phe Tyr Ser Pro Ser Thr Ile Ser Lys Tyr
 1 5 10 15
 Phe Ile Tyr Ser Gly Ala Gly Asn Arg Phe Leu Leu Gly Glu Thr Leu
 20 25 30
 Pro Glu Val Glu Asp Val Arg Phe Leu Cys Gln Glu Thr Arg Val Asp
 35 40 45
 Gly Phe Leu Tyr Leu Lys Pro Ser Ser Cys Ala Asp Ala Gln Leu Ile

50 55 60
 Ile Phe Asn Ser Asp Gly Ser Arg Pro Thr Met Cys Gly Asn Gly Leu
 65 70 75 80
 Arg Cys Ala Ile Ala His Leu Ala Ser Gln Lys Gly Lys Ser Asp Ile
 85 90 95
 Ser Val Ser Thr Asp Ser Gly Leu Tyr Ser Gly Tyr Phe Tyr Ser Trp
 100 105 110
 Asp Arg Val Leu Val Asp Met Thr Leu Ala Asp Trp Arg Ala Ser Val
 115 120 125
 His Arg Leu Glu Ser Arg Pro Asp Pro Leu Pro Lys Glu Ile Val Cys
 130 135 140
 Ile His Thr Gly Val Pro His Ala Val Val Ile Leu Pro Glu Ile Ser
 145 150 155 160
 Thr Leu Asp Leu Ser Ile Leu Gly Pro Phe Leu Arg Tyr His Gln Thr
 165 170 175
 Phe Ser Pro Asp Gly Val Asn Val Asn Phe Val Gln Ile Leu Gly His
 180 185 190
 Cys Gln Leu Arg Val Arg Thr Tyr Glu Arg Gly Val Glu Gly Glu Thr
 195 200 205
 Ala Ala Cys Gly Thr Gly Ala Leu Ala Ser Ala Leu Val Val Ser Asn
 210 215 220
 Ser Tyr Gly Trp Lys Glu Ser Ile Gln Ile His Thr Trp Gly Gly Glu
 225 230 235 240
 Leu Met Thr Val Ser Gln Asn Arg Gly Arg Val Tyr Leu Gln Gly Ser
 245 250 255
 Val Thr Arg Asp Leu
 260

<210>560

<211>196

<212>PRT

<213>Chlamydia pneumoniae

<400>560

Glu Arg His Tyr Phe Met Ala Asp Gly Glu Val His Lys Leu Arg Asp
 1 5 10 15
 Ile Ile Glu Lys Glu Leu Leu Glu Ala Arg Arg Val Phe Phe Ser Glu
 20 25 30
 Pro Val Thr Glu Lys Ser Ala Ser Asp Ala Ile Lys Lys Leu Trp Tyr
 35 40 45
 Leu Glu Leu Lys Asp Pro Gly Lys Pro Ile Val Phe Val Ile Asn Ser
 50 55 60
 Pro Gly Gly Ser Val Asp Ala Gly Phe Ala Val Trp Asp Gln Ile Lys
 65 70 75 80
 Met Leu Thr Ser Pro Val Thr Thr Val Val Thr Gly Leu Ala Ala Ser
 85 90 95
 Met Gly Ser Val Leu Ser Leu Cys Ala Ala Pro Gly Arg Arg Phe Ala
 100 105 110
 Thr Pro His Ser Arg Ile Met Ile His Gln Pro Ser Ile Gly Gly Pro
 115 120 125
 Ile Thr Gly Gln Ala Thr Asp Leu Asp Ile His Ala Arg Glu Ile Leu
 130 135 140
 Lys Thr Lys Ala Arg Ile Ile Asp Val Tyr Val Glu Ala Thr Asn Gln
 145 150 155 160
 Pro Arg Asp Ile Ile Glu Lys Ala Ile Asp Arg Asp Met Trp Met Thr
 165 170 175
 Ala Asn Glu Ala Lys Asp Phe Gly Leu Leu Asp Gly Ile Leu Phe Ser
 180 185 190
 Phe Asn Asp Leu
 195

<210>561

<211>519

<212>PRT

<213>Chlamydia pneumoniae

<400>561

Leu Leu Lys Val Phe Glu Lys Phe Lys Lys Phe Ala Ile Val Glu Ile

1 5 10 15
Phe Thr Lys Val Val Ala Val Val Ser Leu Leu His Lys Phe Leu Glu
20 25 30
Asn Ala Ser Gly Lys Lys Gly Gln Ser Leu Ala Ser Thr Ala Tyr Leu
35 40 45
Ala Ala Leu Asp His Leu Leu Asn Ala Phe Pro Ser Ile Gly Glu Arg
50 55 60
Ile Ile Asp Glu Leu Lys Ser Gln Arg Ser His Leu Lys Met Ile Ala
65 70 75 80
Ser Glu Asn Tyr Ser Ser Leu Ser Val Gln Leu Ala Met Gly Asn Leu
85 90 95
Leu Thr Asp Lys Tyr Cys Glu Gly Ser Pro Phe Lys Arg Phe Tyr Ser
100 105 110
Cys Cys Glu Asn Val Asp Ala Ile Glu Trp Glu Cys Val Glu Thr Ala
115 120 125
Lys Glu Leu Phe Ala Ala Asp Cys Ala Cys Val Gln Pro His Ser Gly
130 135 140
Ala Asp Ala Asn Leu Leu Ala Val Met Ala Ile Leu Thr His Lys Val
145 150 155 160
Gln Gly Pro Ala Val Ser Lys Leu Gly Tyr Lys Thr Val Asn Glu Leu
165 170 175
Thr Glu Glu Glu Tyr Thr Leu Leu Lys Ala Glu Met Ser Ser Cys Val
180 185 190
Cys Leu Gly Pro Ser Leu Asn Ser Gly Gly His Leu Thr His Gly Asn
195 200 205
Val Arg Leu Asn Val Met Ser Lys Leu Met Arg Cys Phe Pro Tyr Asp
210 215 220
Val Asn Pro Asp Thr Glu Cys Phe Asp Tyr Ala Glu Ile Ser Arg Leu
225 230 235 240
Ala Lys Glu Tyr Lys Pro Lys Val Leu Ile Ala Gly Tyr Ser Ser Tyr
245 250 255
Ser Arg Arg Leu Asn Phe Ala Val Leu Lys Gln Ile Ala Glu Asp Cys
260 265 270
Gly Ser Val Leu Trp Val Asp Met Ala His Phe Ala Gly Leu Val Ala
275 280 285
Gly Gly Val Phe Val Asp Glu Glu Asn Pro Ile Pro Tyr Ala Asp Ile
290 295 300
Val Thr Thr Thr Thr His Lys Thr Leu Arg Gly Pro Arg Gly Gly Leu
305 310 315 320
Val Leu Ala Thr Arg Glu Tyr Glu Ser Thr Leu Asn Lys Ala Cys Pro
325 330 335
Leu Met Met Gly Gly Pro Leu Pro His Val Ile Ala Ala Lys Thr Val
340 345 350
Ala Leu Lys Glu Ala Leu Ser Val Asp Phe Lys Lys Tyr Ala His Gln
355 360 365
Val Val Asn Asn Ala Arg Arg Leu Ala Glu Arg Phe Leu Ser His Gly
370 375 380
Leu Arg Leu Leu Thr Gly Gly Thr Asp Asn His Met Met Val Ile Asp
385 390 395 400
Leu Gly Ser Leu Gly Ile Ser Gly Lys Ile Ala Glu Asp Ile Leu Ser
405 410 415
Ser Val Gly Ile Ala Val Asn Arg Asn Ser Leu Pro Ser Asp Ala Ile
420 425 430
Gly Lys Trp Asp Thr Ser Gly Ile Arg Leu Gly Thr Pro Ala Leu Thr
435 440 445
Thr Leu Gly Met Gly Ile Asp Glu Met Glu Glu Val Ala Asp Ile Ile
450 455 460
Val Lys Val Leu Arg Asn Ile Arg Leu Ser Cys His Val Glu Gly Ser
465 470 475 480
Ser Lys Lys Asn Lys Gly Glu Leu Pro Glu Ala Ile Ala Gln Glu Ala
485 490 495
Arg Asp Arg Val Arg Asn Leu Leu Leu Arg Phe Pro Leu Tyr Pro Glu
500 505 510
Ile Asp Leu Glu Ala Leu Val

515
 <210>562
 <211>367
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>562

Lys Val Phe Tyr Lys Lys Asn Val Met Ser Gly Pro Ser Arg Thr Glu
 1 5 10 15
 Ser Ser Gln Val Ser Val Leu Ser Tyr Val Pro Arg Asp Lys Glu Ile
 20 25 30
 Ala Pro Lys Lys Gln Phe Thr Ile Ala Lys Ile Ser Thr Leu Ala Ile
 35 40 45
 Leu Ala Ser Leu Ala Leu Gly Ala Leu Val Ala Gly Ile Ser Leu Thr
 50 55 60
 Ile Val Leu Gly Asn Pro Val Phe Leu Ala Leu Leu Ile Thr Thr Ala
 65 70 75 80
 Leu Phe Ser Val Val Thr Phe Leu Val Tyr His Gln Met Thr Ser Lys
 85 90 95
 Val Ser Ser Asn Trp Gln Lys Val Leu Glu Gln Asn Phe Lys Pro Leu
 100 105 110
 Gly Lys Ala Trp Gln Glu Lys Asn Val Asp Cys Xaa Ser Asn Glu Met
 115 120 125
 Gln Phe Tyr Asn Asn His Leu Asn Pro Lys Phe Lys Val Ala Ile Gln
 130 135 140
 Thr Asp Ala Xaa Gln Pro Phe Gln Pro Thr Phe Leu Thr Gly Leu Arg
 145 150 155 160
 Val Ile Glu Lys Asn Gln Ser Thr Gly Ile Ile Phe Asn Pro Val Gly
 165 170 175
 Pro Thr Asn Leu Ile Asp Asn Thr Ala Thr Asn Leu Ser Thr Ile Leu
 180 185 190
 Tyr Ser Thr Leu Lys Asp Lys Ser Val Trp Asp Thr Cys Lys Gln Arg
 195 200 205
 Glu Gly Gly Pro Ala Lys Gly Glu Asp Pro Phe Ser Pro Thr Glu Val
 210 215 220
 Arg Val Val Lys Leu Pro Asn Glu Ala Leu Asp Gln Thr Phe Asn Leu
 225 230 235 240
 Asn Leu Ser Ser Ala Glu Lys Lys Ser Ile Leu Pro Thr Phe Leu Gly
 245 250 255
 His Val Cys Gly Pro Lys Ser Glu Glu Leu Pro Asn Gln Gln Glu Tyr
 260 265 270
 Tyr Arg Gln Ala Leu Leu Ala Tyr Glu Asn Cys Leu Lys Ala Ala Ile
 275 280 285
 Glu Ser His Ala Ala Ile Val Ala Leu Pro Leu Phe Thr Ser Val Tyr
 290 295 300
 Glu Val Pro Pro Glu Glu Ile Leu Pro Lys Glu Gly Thr Phe Tyr Trp
 305 310 315 320
 Asp Asn Gln Thr Gln Ala Phe Cys Lys Arg Ala Leu Leu Asp Ala Ile
 325 330 335
 Gln Asn Thr Ala Leu Arg Tyr Pro Gln Arg Ser Leu Leu Val Ile Leu
 340 345 350
 Gln Asp Pro Phe Asn Thr Ile Glu Ser Gln Ser Arg Ser Glu Glu
 355 360 365

<210>563
 <211>258
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>563

Gly Ile Ile Phe Met His Asp Ala Leu Leu Ser Ile Leu Ala Ile Gln
 1 5 10 15
 Glu Leu Asp Ile Lys Met Ile Arg Leu Met Arg Val Lys Lys Glu His
 20 25 30
 Gln Lys Glu Leu Ala Lys Val Gln Ser Leu Lys Ser Asp Ile Arg Arg
 35 40 45
 Lys Val Gln Glu Lys Glu Leu Glu Met Glu Asn Leu Lys Thr Gln Ile

50 55 60
 Arg Asp Gly Glu Asn Arg Ile Gln Glu Ile Ser Glu Gln Ile Asn Lys
 65 70 75 80
 Leu Glu Asn Gln Gln Ala Ala Val Lys Lys Met Asp Glu Phe Asn Ala
 85 90 95
 Leu Thr Gln Glu Met Thr Thr Ala Asn Lys Glu Arg Arg Ser Leu Glu
 100 105 110
 His Gln Leu Ser Asp Leu Met Asp Lys Gln Ala Gly Gly Glu Asp Leu
 115 120 125
 Ile Val Ser Leu Lys Glu Ser Leu Ala Ser Thr Glu Asn Ser Ser Ser
 130 135 140
 Val Ile Glu Lys Glu Ile Phe Glu Ser Ile Lys Lys Ile Asn Glu Glu
 145 150 155 160
 Gly Lys Ala Leu Leu Glu Gln Arg Thr Glu Leu Lys His Ala Thr Asn
 165 170 175
 Pro Glu Leu Leu Ser Ile Tyr Glu Arg Leu Leu Asn Asn Lys Lys Asp
 180 185 190
 Arg Val Val Val Pro Ile Glu Asn Arg Val Cys Ser Gly Cys His Ile
 195 200 205
 Val Leu Thr Pro Gln His Glu Asn Leu Val Arg Xaa Lys Asp Arg Leu
 210 215 220
 Ile Phe Cys Glu His Cys Ser Arg Ile Leu Tyr Trp Gln Glu Ser Gln
 225 230 235 240
 Val Asn Ala Gln Glu Asn Ser Thr Ala Lys Arg Arg Arg Arg Ala
 245 250 255
 Ala Val

<210>564

<211>329

<212>PRT

<213>Chlamydia pneumoniae

<400>564

Met Pro Ser Pro Met Ile Ser Thr Asp Val Cys Gln Asp Ile Leu Gly
 1 5 10 15
 Lys Gln Lys Glu Ala Val Asp Phe Phe Phe Gln Ala Phe Gln Pro Lys
 20 25 30
 Glu Ala Met Gln Leu Ala Glu Lys Ile Leu Gly His Ser Gly Trp Val
 35 40 45
 Phe Phe Ser Gly Val Gly Lys Ser Gly Cys Val Ala Arg Lys Leu Val
 50 55 60
 Ala Thr Leu Gln Ser Leu Ser Glu Arg Ala Leu Phe Phe Ser Pro Val
 65 70 75 80
 Asp Leu Leu His Gly Asp Leu Gly Leu Val Ser Pro Gly Asp Ile Val
 85 90 95
 Cys Leu Phe Ser Lys Ser Gly Glu Thr Gln Glu Leu Leu Asp Thr Val
 100 105 110
 Pro His Leu Lys Ser Arg Arg Ala Ile Leu Val Ala Ile Thr Ser Met
 115 120 125
 Pro Tyr Ser Asn Leu Ala Ala Leu Ser Asp Leu Val Val Ile Leu Pro
 130 135 140
 Ser Val Ala Glu Leu Asp Pro Phe Asn Leu Ile Pro Thr Asn Ser Thr
 145 150 155 160
 Thr Cys Gln Met Ile Phe Gly Asp Phe Leu Ala Met Leu Leu Phe His
 165 170 175
 Ser Arg Gly Val Ser Leu Ser Thr Tyr Gly Lys Asn His Pro Ser Gly
 180 185 190
 Gln Val Gly Met Lys Ala Asn Gly Lys Val Lys Asp Phe Met Phe Pro
 195 200 205
 Lys Thr Glu Val Pro Phe Cys His Leu Gly Asp Lys Val Ser Phe Ser
 210 215 220
 Leu Glu Val Phe Ser Ala Tyr Gly Cys Gly Cys Val Cys Ile Val Asp
 225 230 235 240
 Pro Gln Phe Arg Leu Met Gly Ile Phe Thr Asp Gly Asp Leu Arg Arg
 245 250 255

Ser Leu Ala Ser Tyr Gly Gly Glu Val Leu Ser Leu Ser Leu Glu Lys
 260 265 270
 Val Met Thr Ala Asn Pro Arg Cys Ile Thr Glu Asp Ser Asp Ile Ala
 275 280 285
 Ile Ala Leu Gln Leu Met Glu Ser Ser Ser Pro Val Ala Val Leu Pro
 290 295 300
 Val Leu Asp Asn Glu Glu Asn Arg His Val Thr Gly Leu Leu His Met
 305 310 315 320
 His Thr Leu Ala Lys Ala Gly Leu Leu
 325

<210>565

<211>393

<212>PRT

<213>Chlamydia pneumoniae

<400>565

Met Ile Phe Glu Phe Arg Phe Pro Lys Ile Gly Glu Thr Ser Ser Gly
 1 5 10 15
 Gly Ser Ile Val Arg Trp Leu Lys Asn Leu Gly Asp His Val Ala Arg
 20 25 30
 Asp Glu Pro Leu Ile Glu Val Ser Thr Asp Lys Ile Ala Thr Glu Leu
 35 40 45
 Pro Ser Pro Lys Ala Gly Arg Leu Val Arg Phe Cys Val Asn Glu Gly
 50 55 60
 Asp Glu Val Ala Ser Gly Asp Val Leu Gly Leu Ile Glu Leu Glu Glu
 65 70 75 80
 Ile Ser Glu Ala Asp Asp Glu Ser Thr Ser Cys Pro Leu Thr Ser Cys
 85 90 95
 Glu Thr Lys Ser Glu Ala Gly Ser Ser Ser Ser Val Trp Phe Ser
 100 105 110
 Pro Ala Val Leu Ser Leu Ala Gln Arg Glu Gly Ile Gly Leu Asp Asn
 115 120 125
 Leu Gln Lys Ile Ala Gly Thr Gly Lys Gly Gly Arg Val Thr Arg Gln
 130 135 140
 Asp Leu Glu Ala Tyr Ile Ser Glu Ser Gln Gln Val Ser Ile Pro Glu
 145 150 155 160
 Ile Phe Gln Gly Glu Val Asn Arg Ile Pro Met Ser Pro Leu Arg Arg
 165 170 175
 Ala Ile Ala Ser Ser Leu Ser Lys Ser Ser Asp Glu Val Pro His Ala
 180 185 190
 Ser Leu Val Val Asp Val Asp Val Thr Asp Leu Met Asn Leu Ile Ser
 195 200 205
 Gly Glu Arg Gln Arg Phe Leu Asp Thr His Gly Val Lys Leu Thr Ile
 210 215 220
 Thr Ser Phe Ile Val Gln Cys Leu Ala Gln Thr Leu Arg Gln Phe Pro
 225 230 235 240
 Leu Leu Asn Gly Ser Leu Asp Gly Thr Thr Ile Val Met Lys Lys Ser
 245 250 255
 Val Asn Val Gly Val Ala Val Asn Leu Asn Lys Glu Gly Val Val Val
 260 265 270
 Pro Val Ile His Asn Cys Gln Asp Arg Gly Leu Val Ser Ile Ala Lys
 275 280 285
 Ala Leu Ala Asp Leu Ser Ser Arg Ala Arg Leu Asn Lys Leu Asp Pro
 290 295 300
 Ser Glu Val Gln Asp Gly Ser Val Thr Val Thr Asn Phe Gly Met Thr
 305 310 315 320
 Gly Ala Leu Ile Gly Met Pro Ile Ile Arg Tyr Pro Glu Val Ala Ile
 325 330 335
 Leu Gly Ile Gly Thr Ile Gln Lys Arg Val Val Val Arg Asp Asp Asp
 340 345 350
 Ser Leu Ala Ile Arg Lys Met Val Tyr Val Thr Leu Thr Phe Asp His
 355 360 365
 Arg Val Leu Asp Gly Ile Tyr Gly Ser Glu Phe Leu Thr Ser Leu Lys
 370 375 380
 Asn Arg Leu Glu Ser Val Thr Met Gly

385

390

<210>566

<211>90

<212>PRT

<213>Chlamydia pneumoniae

<400>566

Ala Lys Leu Ser Thr Ala Gly Glu Asn His Thr Glu Glu Leu Leu Glu
 1 5 10 15
 Pro Ala Ser Asp Phe Val Ser Gln Glu Val Arg Gly His Glu Val Leu
 20 25 30
 Ser Ser Ser Ala Ser Glu Ile Ser Ser Ser Ile Asn Pro Lys Thr
 35 40 45
 Ser Pro Glu Ala Thr Ser Ser Pro Ser Leu Thr Gln Lys Arg Thr Ser
 50 55 60
 Arg Pro Ala Leu Gly Glu Gly Asn Ser Val Ala Ile Leu Ser Val Asp
 65 70 75 80
 Thr Ser Ile Arg Gly Ser Ser Leu Ala Thr
 85 90

<210>567

<211>415

<212>PRT

<213>Chlamydia pneumoniae

<400>567

Leu Met Lys Leu Trp Met Lys Ile Phe Ile Gly Leu Phe Val Gly Val
 1 5 10 15
 Thr Leu Gly Leu Val Leu Glu Asp Lys Ala Ile Phe Phe Lys Pro Ile
 20 25 30
 Gly Asp Ile Phe Leu Asn Leu Leu Ser Met Val Val Tyr Pro Leu Val
 35 40 45
 Phe Cys Ser Met Val Leu Gly Ile Ala Ser Ile Ser Asp Met Lys Lys
 50 55 60
 Leu Gly Arg Ile Gly Ile Lys Ser Val Gly Leu Tyr Leu Gly Thr Thr
 65 70 75 80
 Ala Leu Ala Ile Val Ile Gly Leu Cys Phe Ala Trp Ile Phe Ser Pro
 85 90 95
 Gly Asn Gly Cys Asp Phe Ala Gln Ala Gln Ser Met Asp Ser Ala Val
 100 105 110
 Thr Val Ile Asp Ser Asn Lys Thr Ala Ala Tyr Phe Leu Ser Ile Ile
 115 120 125
 Ala Gln Val Phe Pro Ser Asn Pro Val Arg Ser Phe Ala Glu Gly Asn
 130 135 140
 Ile Leu Gln Ile Ile Ile Phe Ala Ile Phe Leu Gly Ile Ala Leu Arg
 145 150 155 160
 Leu Ser Gly Glu Arg Gly Arg Pro Val Glu Arg Phe Ile Asp Gly Phe
 165 170 175
 Ser Glu Ile Met Leu Arg Met Val Asn Met Ile Met Ser Phe Ala Pro
 180 185 190
 Tyr Gly Val Gly Ala Ser Met Ala Trp Ile Ser Gly Asn His Gly Leu
 195 200 205
 Gly Val Leu Trp Gln Leu Gly Lys Phe Ile Ile Ala Tyr Tyr Leu Ala
 210 215 220
 Cys Leu Phe His Ala Thr Leu Val Phe Gly Gly Leu Val Arg Phe Gly
 225 230 235 240
 Cys Lys Met Ser Phe Ser Lys Phe Leu Ser Ser Met Met Asp Ala Ile
 245 250 255
 Ser Cys Ala Val Ser Thr Ala Ser Ser Ser Ala Thr Leu Pro Val Thr
 260 265 270
 Met Arg Cys Val Ser Lys Asn Leu Gly Val Ser Ala Glu Val Ser Gly
 275 280 285
 Phe Val Leu Pro Leu Gly Ala Thr Val Asn Met Asn Gly Thr Ala Ile
 290 295 300
 Phe Gln Gly Met Ala Ala Val Phe Ile Ala Gln Ala Tyr Asn Cys Pro
 305 310 315 320
 Leu Ser Leu Ser Ser Leu Leu Leu Val Val Thr Ala Thr Phe Ser

325 330 335
 Ala Val Gly Ser Ala Gly Val Pro Gly Gly Met Ile Thr Leu Gly
 340 345 350
 Ser Val Leu Ala Ser Val Gly Leu Pro Ile Gln Gly Ile Ala Ile Leu
 355 360 365
 Ala Gly Ile Asp Arg Leu Arg Asp Ile Val Gly Thr Pro Met Asn Ile
 370 375 380
 Leu Gly Asp Ala Val Val Ala Thr Tyr Val Ala Ser Gly Glu Gly Glu
 385 390 395 400
 Leu Ser Pro Tyr Glu Ser Ile Lys Gln Glu Ser Val Glu Thr Thr
 405 410 415

<210>568

<211>365

<212>PRT

<213>Chlamydia pneumoniae

<400>568

Met Lys Lys Arg Phe Pro Ser Thr Leu Phe Leu Phe Tyr Arg Arg Val
 1 5 10 15
 Thr Ile Ala Ile Ser Leu Glu Gly Ile Leu Gly Trp Gly Trp Leu Gly
 20 25 30
 Ser Leu Leu Ser Lys Val Phe Ala Phe Leu Val Ala Cys Trp Asn Arg
 35 40 45
 Phe Ser Trp Ser Thr Pro Tyr Arg Ala Arg Ser Thr Val Ile Ser Val
 50 55 60
 Gly Asn Ile Val Val Gly Gly Ala Gly Lys Thr Pro Thr Val Leu Trp
 65 70 75 80
 Leu Ala Glu Ala Leu Arg Leu Arg Gly Tyr Ser Cys Gly Val Leu Ser
 85 90 95
 Arg Gly Tyr Lys Ser Gln Ser Ser Arg Gln Lys Lys Leu Thr Val Val
 100 105 110
 Asp Ser Lys Val His Ser Ala Ser Tyr Val Gly Asp Glu Pro Leu Leu
 115 120 125
 Met Ala Glu Lys Leu Pro Glu Gly Ser Val Trp Val His Lys Asp Arg
 130 135 140
 Arg Ile Ser Ala Ala Arg Ala Ala Glu Lys Phe Gly Ile Leu Leu Leu
 145 150 155 160
 Asp Asp Gly Leu Gln Tyr Arg Lys Leu His Lys Asp Val Glu Ile Ala
 165 170 175
 Val Val Asn Gly Gln Asp Pro Leu Gly Gly Arg Ala Phe Phe Pro Lys
 180 185 190
 Gly Arg Leu Arg Asp Phe Pro Leu Arg Leu Lys Thr Val Asp Ala Ile
 195 200 205
 Ile Val Asn Gly Gly Gly Lys Glu Ala Gly Thr Val Val Lys Arg Val
 210 215 220
 Ser Asn Ala Pro Gln Ile Phe Val Lys Pro Thr Ile Ala Ser Val Val
 225 230 235 240
 Trp Thr His Asn Gly Glu Arg Ile Pro Lys Glu Ala Leu Arg Glu Leu
 245 250 255
 Arg Val Gly Val Phe Cys Gly Leu Gly Phe Pro Gln Gly Phe Leu Asn
 260 265 270
 Met Leu Arg Glu Glu Gly Ile His Ile Leu Gly Lys Tyr Leu Leu Pro
 275 280 285
 Asp His Ala Ala Ile Thr Lys Lys Glu Leu Asn Tyr Phe Cys Gln Gln
 290 295 300
 Met Ala Met Arg Gln Gly Gln Gly Leu Leu Cys Thr Glu Lys Asp Ser
 305 310 315 320
 Val Lys Leu Pro Arg Leu Ser Gly Glu Val Ser Leu Leu Pro Ile Ala
 325 330 335
 Lys Val Glu Met Arg Leu Ser Val Asn Gln Asp Asp Thr Leu Ser Leu
 340 345 350
 Leu Asn Met Ile Glu Gln Ile His Lys Asn Arg Gly Asn
 355 360 365

<210>569

<211>287

<212>PRT

<213>Chlamydia pneumoniae

<400>569

Val Val Leu Trp Gly Lys Phe Leu Trp Arg Arg Cys Gly Ser Leu Ala
 1 5 10 15
 Phe Trp Glu Phe Cys Ser Met Asp Cys Ile Gly Lys His Asn Pro Leu
 20 25 30
 Val Lys Glu Ala Leu Ala Leu Lys Arg Ser Arg Cys Arg Lys Ser Ser
 35 40 45
 Trp Phe Leu Val Glu Gly Ala Arg Glu Ile Gln Lys Ala Leu Arg Thr
 50 55 60
 Gly Tyr Leu Cys Gln His Val Phe Cys Ser Thr His Leu Ser Glu Lys
 65 70 75 80
 Glu Lys Glu Phe Leu Tyr Glu Leu Lys Arg Asn Ser Thr Lys Ile Leu
 85 90 95
 Tyr Cys Leu Asp Ser Thr Leu Ala Gln Leu Ser Phe Lys Glu His His
 100 105 110
 Asp Ser Phe Val Ala Val Ile Gln Lys Arg Val Trp Asn Lys Glu Asp
 115 120 125
 Phe Leu Ile Gln Arg Lys Asn Ala Gln Pro Phe Tyr Leu Ile Ile Glu
 130 135 140
 Gln Val Glu Lys Pro Gly Asn Val Gly Ala Ile Leu Arg Ile Ala Asp
 145 150 155 160
 Gly Ala Gly Val Asp Gly Val Ile Leu Cys Asn Pro Ile Val Asp Leu
 165 170 175
 Tyr Asn Pro Asn Val Val Arg Ser Ser Leu Gly Ala Val Phe Ser Leu
 180 185 190
 Pro Ile Leu Ser Ile Ser Arg Glu Gly Lys Glu Leu Phe Lys Gln
 195 200 205
 Glu Gly Trp Thr Val Phe Val Thr Ser Pro Arg Ala Glu Thr Met Tyr
 210 215 220
 Phe Ser Lys Asn Tyr Leu Gly Pro Thr Ala Leu Val Phe Gly Ser Glu
 225 230 235 240
 Lys Asp Gly Leu Thr Glu Asp Trp Phe Ser Glu Asp Phe Ser Glu Ile
 245 250 255
 Ala Leu Pro Met Leu Gly Glu Ser Asp Ser Leu Asn Leu Ala Thr Ser
 260 265 270
 Val Ala Ala Val Ala Tyr Glu Val Val Arg Gln Arg Trp Val Asn
 275 280 285

<210>570

<211>321

<212>PRT

<213>Chlamydia pneumoniae

<400>570

Asp Ser Ser Lys Asp Asp Phe Arg Lys Glu Lys Gly Arg Arg Lys Ser
 1 5 10 15
 Gln Tyr Arg Asp Arg Tyr Val Asn Lys Asp Thr Gly Arg His Ser Lys
 20 25 30
 Thr Tyr Phe Ser Leu Ile Arg Glu Arg Leu Val Met Asp Tyr Lys Leu
 35 40 45
 Leu Asp Ser Gly Asp Gly Asn Lys Leu Glu Cys Phe Gly Pro Val Thr
 50 55 60
 Leu Ile Arg Pro Ser Ser Ile Ala Val Trp Pro Lys Ser Arg Pro Glu
 65 70 75 80
 Leu Trp Ser Gln Ala Gln Leu Gln Tyr Val Arg Glu Gly Glu Arg Gly
 85 90 95
 Ala Trp Lys Asn Phe Lys Arg Leu Pro Glu Glu Trp Glu Val Ala Phe
 100 105 110
 Ser Asp Val Arg Cys Leu Leu Lys Arg Thr Pro Phe Gly His Leu Gly
 115 120 125
 Val Phe Pro Glu His Met Gly Phe Trp Pro Ala Leu Lys Gln Ala Ile
 130 135 140
 Glu Lys His Lys Glu Arg Gln Val Leu Asn Leu Phe Ala Tyr Thr Gly
 145 150 155 160

Ala Gly Ser Ile Phe Ala Ala Lys Cys Gly Ala Arg Val Thr His Val
165 170 175
Asp Ala Ser Gln Ala Ala Val Arg Trp Ala Gln Arg Asn Val Glu Lys
180 185 190
Asn Ala Phe Pro Glu Arg Arg Ile Phe Trp Val Ile Glu Asp Val Ile
195 200 205
Ser Phe Leu Lys Lys Glu Ile Arg Arg Asn Lys Lys Tyr Gln Val Ile
210 215 220
Leu Leu Asp Pro Pro Ser Tyr Gly Arg Gly Pro Asp Gly Glu Val Phe
225 230 235 240
Lys Ile Asp Lys Asp Leu Phe Pro Leu Leu Ser Leu Cys Ser Lys Leu
245 250 255
Leu Ala Asp Asp Ala Ser Tyr Phe Leu Leu Thr Ser His Thr Pro Gly
260 265 270
His Thr Pro Glu Phe Leu Arg Ala Ile Ala Arg Arg Arg Cys Gln Pro
275 280 285
Leu Phe Leu Lys Arg Gly Leu Val Gly Lys Val Phe Val Glu Lys Val
290 295 300
Trp Glu Pro Cys Leu Leu Gly Val Leu Phe Asn Gly Leu His Arg Glu
305 310 315 320
Thr

<210>571

<211>200

<212>PRT

<213>Chlamydia pneumoniae

<400>571

Met Phe Ser Gly Ile Ile Gln Glu Leu Gly Glu Val Cys Phe Phe Glu
1 5 10 15
Ala Gln Gly Asn Gly Leu Ser Leu Gly Ile Lys Ser Thr Pro Leu Phe
20 25 30
Val Thr Pro Leu Val Thr Gly Asp Ser Val Ala Val Asp Gly Val Cys
35 40 45
Leu Thr Leu Thr Ser Cys Asn Glu Ser Lys Ile Phe Phe Asp Val Ile
50 55 60
Pro Glu Thr Leu Ala Cys Thr Thr Leu Gly Glu Lys Arg Cys Ser Asp
65 70 75 80
Gln Val Asn Leu Glu Ala Ala Leu Lys Met Gly Asp Ser Ile Gly Gly
85 90 95
His Leu Leu Ser Gly His Val Phe Gly Thr Ala Glu Ile Phe Leu Ile
100 105 110
Lys Glu Asn Arg Tyr Tyr Phe Arg Gly Ser Lys Glu Leu Ser Gln Tyr
115 120 125
Leu Phe Glu Lys Gly Phe Ile Ala Ile Asp Gly Val Ser Leu Thr Leu
130 135 140
Val Ser Val Asp Ser Asp Thr Phe Ser Val Gly Leu Ile Pro Glu Thr
145 150 155 160
Leu Gln Arg Thr Thr Leu Gly Lys Lys Arg Glu Gly Glu Arg Val Asn
165 170 175
Ile Glu Ile Asp Met Ser Thr Lys Ile Gln Val Asp Thr Val Lys Arg
180 185 190
Ile Leu Ala Ser Ser Gly Lys Asp
195 200

<210>572

<211>152

<212>PRT

<213>Chlamydia pneumoniae

<400>572

Met Gln Cys Pro Phe Cys Asn His Gly Glu Leu Lys Val Ile Asp Ser
1 5 10 15
Arg Asn Ala Pro Glu Ala Asn Ala Ile Lys Arg Arg Arg Glu Cys Leu
20 25 30
Lys Cys Ser Gln Arg Phe Thr Thr Phe Glu Thr Val Glu Leu Thr Leu
35 40 45

WO 99/27105

Gln Val Leu Lys Arg Asp Gly Arg Tyr Glu Asn Phe Gln Glu Ser Lys
 50 55 60
 Leu Ile His Gly Leu Asn Ala Ala Ser Ser His Thr Arg Ile Gly Gln
 65 70 75 80
 Asp Gln Val His Ala Ile Ala Ser Asn Val Lys Ser Glu Leu Leu Gly
 85 90 95
 Lys Gln Asn Arg Glu Ile Ser Thr Lys Glu Ile Gly Glu Leu Val Met
 100 105 110
 Lys Tyr Leu Lys Lys Ala Asp Met Ile Ala Tyr Ile Arg Phe Ala Cys
 115 120 125
 Val Tyr Arg Arg Phe Lys Asp Val Gly Glu Leu Met Glu Val Leu Leu
 130 135 140
 Ser Ala Thr Pro Asp Met Glu Lys
 145 150

<210>573

<211>132

<212>PRT

<213>Chlamydia pneumoniae

<400>573

Leu Asn Phe Ile Arg Ser Lys Val Val Pro Leu Ser Asp Asp Glu Ile
 1 5 10 15
 Glu Gln Phe Lys Lys Arg Leu Leu Glu Met Lys Ala Lys Leu Ser His
 20 25 30
 Thr Leu Glu Gly Asn Ala Gln Glu Val Lys Lys Pro Asn Glu Ala Thr
 35 40 45
 Gly Tyr Ser Gln His Gln Ala Asp Gln Gly Thr Asp Thr Phe Asp Arg
 50 55 60
 Thr Ile Ser Leu Glu Val Thr Thr Lys Glu Tyr Glu Leu Leu Arg Gln
 65 70 75 80
 Ile Asn Arg Ala Leu Glu Lys Ile Asn Glu Ser Ser Tyr Gly Ile Cys
 85 90 95
 Asp Val Ser Gly Glu Glu Ile Pro Leu Ala Arg Leu Ile Ala Ile Pro
 100 105 110
 Tyr Ala Thr Met Thr Val Lys Ala Gln Glu Gln Phe Glu Lys Gly Leu
 115 120 125
 Leu Ser Gly Asn
 130

<210>574

<211>168

<212>PRT

<213>Chlamydia pneumoniae

<400>574

Met Ala Thr Arg Phe Arg Ser Thr Leu Leu Val Ile Thr Leu Phe Val
 1 5 10 15
 Leu Ile Asp Trp Val Thr Lys Leu Val Val Leu Leu Gln Tyr Lys Asp
 20 25 30
 Leu Gln Ile Leu Thr His Pro Thr Leu Tyr Thr His Ser Trp Gly Arg
 35 40 45
 Phe Ser Phe Ser Ile Ala Pro Val Phe Asn Glu Gly Ala Ala Phe Gly
 50 55 60
 Leu Phe Ser Asn Tyr Lys Tyr Phe Leu Phe Leu Arg Ile Phe Val
 65 70 75 80
 Ile Leu Gly Leu Leu Ala Tyr Leu Phe Phe Lys Lys Lys Ser Ile Gln
 85 90 95
 Ser Thr Thr Gln Thr Ala Leu Val Leu Leu Cys Ala Gly Ala Ile Gly
 100 105 110
 Asn Val Gly Asp Ile Ile Phe Tyr Gly His Ile Val Asp Phe Ile Ser
 115 120 125
 Phe Asn Tyr Lys Gln Trp Ala Phe Pro Thr Phe Asn Val Ala Asp Val
 130 135 140
 Leu Ile Ser Leu Gly Thr Leu Leu Leu Val Tyr Lys Phe Tyr Phe Pro
 145 150 155 160
 Thr Lys Gln Thr Glu Lys Lys Arg
 165

<210>575
 <211>449
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>575
 Met Asn Arg Leu Leu Ser Leu Leu Ser Val Phe Asp Asp Phe Phe Trp
 1 5 10 15
 Ser Tyr Val Ala Phe Ile Leu Ile Ile Val Leu Gly Val Ser Phe Ser
 20 25 30
 Trp Lys Ser Arg Phe Phe Gln Phe Thr Lys Phe Ser Gln Phe Cys Lys
 35 40 45
 Leu Phe Arg Tyr Tyr Ser Gln Asn Pro Gln Glu Arg Glu Thr Lys Gln
 50 55 60
 Gly Val His Pro Leu Lys Val Phe Phe Ala Ser Ala Gly Gly Asn Ile
 65 70 75 80
 Gly Ile Gly Asn Val Val Gly Ile Val Thr Ala Ala Cys Ile Gly Gly
 85 90 95
 Pro Gly Ala Leu Phe Trp Val Trp Ile Ala Gly Ile Phe Gly Ser Ile
 100 105 110
 Val Lys Tyr Ser Glu Val Tyr Leu Gly Ile Lys Phe Arg Lys Leu Asp
 115 120 125
 Arg Asp Gly Val Tyr Gln Gly Gly Pro Met Tyr Phe Leu Ile Lys Ala
 130 135 140
 Phe Lys Thr Pro Val Val Ser Val Ile Val Ala Ile Leu Leu Cys Ile
 145 150 155 160
 Tyr Gly Val Glu Ile Tyr Gln Phe Ser Val Ile Thr Asp Ser Leu Ala
 165 170 175
 His Cys Trp Asn Leu Pro Lys Val Tyr Pro Met Leu Gly Leu Leu Phe
 180 185 190
 Leu Val Phe Tyr Ala Ile Arg Gly Gly Leu Gln Arg Ile Gly Lys Ile
 195 200 205
 Cys Ser Ile Val Leu Pro Phe Phe Met Leu Leu Tyr Cys Ala Leu Ser
 210 215 220
 Leu Tyr Ile Leu Val Lys Glu Phe His Thr Leu Pro His Leu Leu Ser
 225 230 235 240
 Thr Val Phe Ser Ser Ala Phe Lys Gly Gln Ser Ala Leu Gly Gly Phe
 245 250 255
 Ala Gly Cys Thr Val Ala Thr Thr Ile His Gln Gly Ile Ser Arg Ala
 260 265 270
 Ala Tyr Ser Gly Asp Ile Gly Ile Gly Phe Asp Ser Ile Ile Gln Ser
 275 280 285
 Glu Ser Ser Ala Lys Asp Pro Ser Thr Gln Ala Gln Leu Ser Ile Val
 290 295 300
 Gly Ile Ala Ile Asp Asn Leu Ile Cys Thr Leu Ser Leu Leu Met Val
 305 310 315 320
 Leu Ala Ser Gly Ser Trp Ser Leu Gly Leu Glu Asn Ala Ser Gln Val
 325 330 335
 Val Glu His Thr Leu Ala Ser Tyr Phe Pro Met Val Lys Phe Phe Leu
 340 345 350
 Pro Thr Phe Phe Val Thr Gly Tyr Thr Thr Ile Ile Ser Tyr Phe
 355 360 365
 Leu Val Gly Lys Lys Cys Ala Lys Phe Leu Tyr Gly Asn Thr Gly Ala
 370 375 380
 Lys Ile Tyr Thr Leu Tyr Gly Leu Leu Ile Leu Pro Leu Phe Cys Phe
 385 390 395 400
 Leu Ser Gln Asn Thr Ala Leu Leu Ile Met Ser Val Ser Gly Ala Leu
 405 410 415
 Leu Leu Cys Phe Asn Leu Leu Gly Val Phe Ile Leu Arg Lys Glu Val
 420 425 430
 Ile Phe Pro Ala Arg Ala Ala Ser Leu Thr Glu Thr Ser Leu Ser Thr
 435 440 445
 Glu

<210>576

<211>232

<212>PRT

<213>Chlamydia pneumoniae

<400>576

Leu Ile Phe Leu Leu Phe Met Asp Asn Tyr Leu Leu Gly Ser Leu Ile
 1 5 10 15
 Phe Cys Cys Val Leu Leu Ser Ile Gly Met Cys Thr Ile Phe Val Met
 20 25 30
 Thr Ile Cys Phe Leu Arg Gln Leu Asn Lys Ile Leu Lys Asn Ile His
 35 40 45
 Arg Val Thr Thr Ile Leu Asn Phe Glu Ala Lys Ile Leu Ala Pro Leu
 50 55 60
 Met Leu Gly Lys Lys Leu Cys Gly Trp Leu Lys Lys Arg Lys Asn
 65 70 75 80
 Arg Gly Ser Leu Ser Glu Asp Ile Asp Glu Leu Leu Asp Glu Lys Lys
 85 90 95
 Gln Arg Ser Trp Lys Lys Asn Leu Asp Gln Gly Ile Lys Trp Cys Ala
 100 105 110
 His Trp Ser Ser Phe Gly Lys Cys Phe Val Ile Lys Ile Lys Thr Leu
 115 120 125
 Arg Asp Ile Val Met Phe Arg Asn Asn His Lys Pro Lys Lys Thr Lys
 130 135 140
 Cys Lys Arg Phe Arg Trp Leu Arg Gly Val Leu Phe Gly Gly Phe Ile
 145 150 155 160
 Ala Thr Leu Leu Thr Cys Leu Phe Thr Pro Lys Ser Gly Val Gln Leu
 165 170 175
 Arg Lys Lys Ile Leu Lys Val Lys Asn Ser Gly Ala Lys Lys Ser Arg
 180 185 190
 Val Phe Phe Lys Asn Ser Lys Gln His Thr Lys Ser Phe Val Lys Gln
 195 200 205
 Ala Lys Leu Leu Ala Lys Asn Ile Ser His Glu Leu Gln Asp Phe Lys
 210 215 220
 Lys Gly Ile Leu Asp Asp Lys Asp
 225 230

<210>577

<211>308

<212>PRT

<213>Chlamydia pneumoniae

<400>577

Gly Tyr Asn Leu Leu Gly Leu Arg His Met Lys Gln Met Arg Leu Trp
 1 5 10 15
 Gly Phe Leu Phe Leu Ser Ser Phe Cys Gln Val Ser Tyr Leu Arg Ala
 20 25 30
 Asn Asp Val Leu Leu Pro Leu Ser Gly Ile His Ser Gly Glu Asp Leu
 35 40 45
 Glu Leu Phe Thr Leu Arg Ser Ser Ser Pro Thr Lys Thr Thr Tyr Ser
 50 55 60
 Leu Arg Lys Asp Phe Ile Val Cys Asp Phe Ala Gly Asn Ser Ile His
 65 70 75 80
 Lys Pro Gly Ala Ala Phe Leu Asn Leu Lys Gly Asp Leu Phe Phe Ile
 85 90 95
 Asn Ser Thr Pro Leu Ala Ala Leu Thr Phe Lys Asn Ile His Leu Gly
 100 105 110
 Ala Arg Gly Ala Gly Leu Phe Ser Glu Ser Asn Val Thr Phe Lys Gly
 115 120 125
 Leu His Ser Leu Val Leu Glu Asn Asn Glu Ser Trp Gly Gly Val Leu
 130 135 140
 Thr Thr Ser Gly Asp Leu Ser Phe Ile Asn Asn Thr Ser Val Leu Cys
 145 150 155 160
 Gln Asn Asn Ile Ser Tyr Gly Pro Gly Gly Ala Leu Leu Leu Gln Gly
 165 170 175
 Arg Lys Ser Lys Ala Leu Phe Phe Arg Asp Asn Arg Gly Thr Ile Leu
 180 185 190
 Phe Leu Lys Asn Lys Ala Val Asn Gln Asp Glu Ser His Pro Gly Tyr

195 200 205
 Gly Gly Ala Val Ser Ser Ile Ser Pro Gly Ser Pro Ile Thr Phe Ala
 210 215 220
 Asp Asn Gln Glu Ile Leu Phe Gln Glu Asn Glu Gly Glu Leu Gly Gly
 225 230 235 240
 Ala Ile Tyr Asn Asp Gln Gly Ala Ile Thr Phe Glu Asn Asn Phe Gln
 245 250 255
 Thr Thr Ser Phe Phe Ser Asn Lys Ala Ser Phe Gly Gly Ala Val Tyr
 260 265 270
 Ser Arg Tyr Cys Asn Leu Tyr Ser Gln Trp Gly Asp Thr Leu Phe Thr
 275 280 285
 Lys Asn Ala Ala Ala Lys Val Gly Gly His Pro Cys Gly Leu Cys Ser
 290 295 300
 Tyr Lys Arg Leu
 305
 <210>578
 <211>660
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>578
 Ala Asp Ile His Ala Asp Tyr Val His Ile Arg Asp Cys Lys Gly Ser
 1 5 10 15
 Ile Val Phe Glu Glu Asn Ser Ala Thr Ala Gly Gly Ala Ile Ala Val
 20 25 30
 Asn Ala Val Cys Asp Ile Asn Ala Gln Gly Pro Val Arg Phe Ile Asn
 35 40 45
 Asn Ser Ala Leu Gly Leu Asn Gly Gly Ala Ile Tyr Met Gln Ala Thr
 50 55 60
 Gly Ser Ile Leu Arg Leu His Ala Asn Gln Gly Asp Ile Glu Phe Cys
 65 70 75 80
 Gly Asn Lys Val Arg Ser Gln Phe His Ser His Ile Asn Ser Thr Ser
 85 90 95
 Asn Phe Thr Asn Asn Ala Ile Thr Ile Gln Gly Ala Pro Arg Glu Phe
 100 105 110
 Ser Leu Ser Ala Asn Glu Gly His Arg Ile Cys Phe Tyr Asp Pro Ile
 115 120 125
 Ile Ser Ala Thr Glu Asn Tyr Asn Ser Leu Tyr Ile Asn His Gln Arg
 130 135 140
 Leu Leu Glu Ala Gly Gly Ala Val Ile Phe Ser Gly Ala Arg Leu Ser
 145 150 155 160
 Pro Glu His Lys Lys Glu Asn Lys Asn Lys Thr Ser Ile Ile Asn Gln
 165 170 175
 Pro Val Arg Leu Cys Ser Gly Val Leu Ser Ile Glu Gly Gly Ala Ile
 180 185 190
 Leu Ala Val Arg Ser Phe Tyr Gln Glu Gly Gly Leu Leu Ala Leu Gly
 195 200 205
 Pro Gly Ser Lys Leu Thr Thr Gln Gly Lys Asn Ser Glu Lys Asp Lys
 210 215 220
 Ile Val Ile Thr Asn Leu Gly Phe Asn Leu Glu Asn Leu Asp Ser Ser
 225 230 235 240
 Asp Pro Ala Glu Ile Arg Ala Thr Glu Lys Ala Ser Ile Glu Ile Ser
 245 250 255
 Gly Val Pro Arg Val Tyr Gly His Thr Glu Ser Phe Tyr Glu Asn His
 260 265 270
 Glu Tyr Ala Ser Lys Pro Tyr Thr Thr Ser Ile Ile Leu Ser Ala Lys
 275 280 285
 Lys Leu Val Thr Ala Pro Ser Arg Pro Glu Lys Asp Ile Gln Asn Leu
 290 295 300
 Ile Ile Ala Glu Ser Glu Tyr Met Gly Tyr Gly Tyr Gln Gly Ser Trp
 305 310 315 320
 Glu Phe Ser Trp Ser Pro Asn Asp Thr Lys Glu Lys Lys Thr Ile Ile
 325 330 335
 Ala Ser Trp Thr Pro Thr Gly Glu Phe Ser Leu Asp Pro Lys Arg Arg
 340 345 350

Gly Ser Phe Ile Pro Thr Thr Leu Trp Ser Thr Phe Ser Gly Leu Asn
 355 360 365
 Ile Ala Ser Asn Ile Val Asn Asn Asn Tyr Leu Asn Asn Ser Glu Val
 370 375 380
 Ile Pro Leu Gln His Leu Cys Val Phe Gly Gly Pro Val Tyr Gln Ile
 385 390 395 400
 Met Glu Gln Asn Pro Lys Gln Ser Ser Asn Asn Leu Leu Val Gln His
 405 410 415
 Ala Gly His Asn Val Gly Ala Arg Ile Pro Phe Ser Phe Asn Thr Ile
 420 425 430
 Leu Ser Ala Ala Leu Thr Gln Leu Phe Ser Ser Ser Ser Gln Gln Asn
 435 440 445
 Val Ala Asp Lys Ser His Ala Gln Ile Leu Ile Gly Thr Val Ser Leu
 450 455 460
 Asn Lys Ser Trp Gln Ala Leu Ser Leu Arg Ser Ser Phe Ser Tyr Thr
 465 470 475 480
 Glu Asp Ser Gln Val Met Lys His Val Phe Pro Tyr Lys Gly Thr Ser
 485 490 495
 Arg Gly Ser Trp Arg Asn Tyr Gly Trp Ser Gly Ser Val Gly Met Ser
 500 505 510
 Tyr Ala Tyr Pro Lys Gly Ile Arg Tyr Leu Lys Met Thr Pro Phe Val
 515 520 525
 Asp Leu Gln Tyr Thr Lys Leu Val Gln Asn Pro Phe Val Glu Thr Gly
 530 535 540
 Tyr Asp Pro Arg Tyr Phe Ser Ser Ser Glu Met Thr Asn Leu Ser Leu
 545 550 555 560
 Pro Ile Gly Ile Ala Leu Glu Met Arg Phe Ile Gly Ser Arg Ser Ser
 565 570 575
 Leu Phe Leu Gln Val Ser Thr Ser Tyr Ile Lys Asp Leu Arg Arg Val
 580 585 590
 Asn Pro Gln Ser Ser Ala Ser Leu Val Leu Asn His Tyr Thr Trp Asp
 595 600 605
 Ile Gln Gly Val Pro Leu Gly Lys Glu Ala Leu Asn Ile Thr Leu Asn
 610 615 620
 Ser Thr Ile Lys Tyr Lys Ile Val Thr Ala Tyr Met Gly Ile Ser Ser
 625 630 635 640
 Thr Gln Arg Glu Gly Ser Asn Leu Ser Ala Asn Ala His Ala Gly Leu
 645 650 655
 Ser Leu Ser Phe
 660

<210>579

<211>609

<212>PRT

<213>Chlamydia pneumoniae

<400>579

Phe Ile His Leu Ile Tyr Leu Ser Leu Ile Glu Phe Val Asn Ile Ser
 1 5 10 15
 Asp Arg Phe Ser Ser Met Lys Trp Leu Pro Ala Thr Ala Val Phe Ala
 20 25 30
 Ala Val Leu Pro Ala Leu Thr Ala Phe Gly Asp Pro Ala Ser Val Glu
 35 40 45
 Ile Ser Thr Ser His Thr Gly Ser Gly Asp Pro Thr Ser Asp Ala Ala
 50 55 60
 Leu Thr Gly Phe Thr Gln Ser Ser Thr Glu Thr Asp Gly Thr Thr Tyr
 65 70 75 80
 Thr Ile Val Gly Asp Ile Thr Phe Ser Thr Phe Thr Asn Ile Pro Val
 85 90 95
 Pro Val Val Thr Pro Asp Ala Asn Asp Ser Ser Ser Asn Ser Ser Lys
 100 105 110
 Gly Gly Ser Ser Ser Ser Gly Ala Thr Ser Leu Ile Arg Ser Ser Asn
 115 120 125
 Leu His Ser Asp Phe Asp Phe Thr Lys Asp Ser Val Leu Asp Leu Tyr
 130 135 140
 His Leu Phe Phe Pro Ser Ala Ser Asn Thr Leu Asn Pro Ala Leu Leu

145		150		155		160
Ser Ser Ser Ser Ser Gly Gly Ser Ser Ser Ser Ser Ser Ser Ser						
	165		170		175	
Ser Gly Ser Ala Ser Ala Val Val Ala Ala Asp Pro Lys Gly Gly Ala						
	180		185		190	
Ala Phe Tyr Ser Asn Glu Ala Asn Gly Thr Leu Thr Phe Thr Thr Asp						
	195		200		205	
Ser Gly Asn Pro Gly Ser Leu Thr Leu Gln Asn Leu Lys Met Thr Gly						
	210		215		220	
Asp Gly Ala Ala Ile Tyr Ser Lys Gly Pro Leu Val Phe Thr Gly Leu						
	225		230		235	
Lys Asn Leu Thr Phe Thr Gly Asn Glu Ser Gln Lys Ser Gly Gly Ala						
	245		250		255	
Ala Tyr Thr Glu Gly Ala Leu Thr Thr Gln Ala Ile Val Glu Ala Val						
	260		265		270	
Thr Phe Thr Gly Asn Thr Ser Ala Gly Gln Gly Gly Ala Ile Tyr Val						
	275		280		285	
Lys Glu Ala Thr Leu Phe Asn Ala Leu Asp Ser Leu Lys Phe Glu Lys						
	290		295		300	
Asn Thr Ser Gly Gln Ala Gly Gly Gly Ile Tyr Thr Glu Ser Thr Leu						
	305		310		315	
Thr Ile Ser Asn Ile Thr Lys Ser Ile Glu Phe Ile Ser Asn Lys Ala						
	325		330		335	
Ser Val Pro Ala Pro Ala Pro Glu Pro Thr Ser Pro Ala Pro Ser Ser						
	340		345		350	
Leu Ile Asn Ser Thr Thr Ile Asp Thr Ser Thr Leu Gln Thr Arg Ala						
	355		360		365	
Ala Ser Ala Thr Pro Ala Val Ala Pro Val Ala Val Thr Pro Thr						
	370		375		380	
Pro Ile Ser Thr Gln Glu Thr Ala Gly Asn Gly Gly Ala Ile Tyr Ala						
	385		390		395	
Lys Gln Gly Ile Ser Ile Ser Thr Phe Lys Asp Leu Thr Phe Lys Ser						
	405		410		415	
Asn Ser Ala Ser Val Asp Ala Thr Leu Thr Val Asp Ser Ser Thr Ile						
	420		425		430	
Gly Glu Ser Gly Gly Ala Ile Phe Ala Ala Asp Ser Ile Gln Ile Gln						
	435		440		445	
Gln Cys Thr Gly Thr Thr Leu Phe Ser Gly Asn Thr Ala Asn Lys Ser						
	450		455		460	
Gly Gly Gly Ile Tyr Ala Val Gly Gln Val Thr Leu Glu Asp Ile Ala						
	465		470		475	
Asn Leu Lys Met Thr Asn Asn Thr Cys Lys Gly Glu Gly Gly Ala Ile						
	485		490		495	
Tyr Thr Lys Lys Ala Leu Thr Ile Asn Asn Gly Ala Ile Leu Thr Thr						
	500		505		510	
Phe Ser Gly Asn Thr Ser Thr Asp Asn Gly Gly Ala Ile Phe Ala Val						
	515		520		525	
Gly Gly Ile Thr Leu Ser Asp Leu Val Glu Val Arg Phe Ser Lys Asn						
	530		535		540	
Lys Thr Gly Asn Tyr Ser Ala Pro Ile Thr Lys Ala Ala Ser Asn Thr						
	545		550		555	
Ala Pro Val Val Ser Ser Ser Thr Thr Ala Ala Ser Pro Ala Val Pro						
	565		570		575	
Ala Ala Ala Ala Pro Val Thr Asn Ala Ala Lys Gly Gly Ala Leu						
	580		585		590	
Tyr Ser Thr Glu Gly Leu Thr Val Ser Gly Ile Thr Ser Xaa Ile Val						
	595		600		605	

Val

<210>580

<211>1146

<212>PRT

<213>Chlamydia pneumoniae

<400>580

Leu Tyr Leu Glu Ser His Arg Xaa Leu Ser Phe Glu Asn Asn Glu Cys
 1 5 10 15
 Gln Asn Gln Gly Gly Gly Ala Tyr Val Thr Lys Thr Phe Gln Cys Ser
 20 25 30
 Asp Ser His Arg Leu Gln Phe Thr Ser Asn Lys Ala Ala Asp Glu Gly
 35 40 45
 Gly Gly Leu Tyr Cys Gly Asp Asp Val Thr Leu Thr Asn Leu Thr Gly
 50 55 60
 Lys Thr Leu Phe Gln Glu Asn Ser Ser Glu Lys His Gly Gly Gly Leu
 65 70 75 80
 Ser Leu Ala Ser Gly Lys Ser Leu Thr Met Thr Ser Leu Glu Ser Phe
 85 90 95
 Cys Leu Asn Ala Asn Thr Ala Lys Glu Asn Gly Gly Gly Ala Asn Val
 100 105 110
 Pro Glu Asn Ile Val Leu Thr Phe Thr Tyr Thr Pro Thr Pro Asn Glu
 115 120 125
 Pro Ala Pro Val Gln Gln Pro Val Tyr Gly Glu Ala Leu Val Thr Gly
 130 135 140
 Asn Thr Ala Thr Lys Ser Gly Gly Gly Ile Tyr Thr Lys Asn Ala Ala
 145 150 155 160
 Phe Ser Asn Leu Ser Ser Val Thr Phe Asp Gln Asn Thr Ser Ser Glu
 165 170 175
 Asn Gly Gly Ala Leu Leu Thr Gln Lys Ala Ala Asp Lys Thr Asp Cys
 180 185 190
 Ser Phe Thr Tyr Ile Thr Asn Val Asn Ile Thr Asn Asn Thr Ala Thr
 195 200 205
 Gly Asn Gly Gly Gly Ile Ala Gly Gly Lys Ala His Phe Asp Arg Ile
 210 215 220
 Asp Asn Leu Thr Val Gln Ser Asn Gln Ala Lys Lys Gly Gly Gly Val
 225 230 235 240
 Tyr Leu Glu Asp Ala Leu Ile Leu Glu Lys Val Ile Thr Gly Ser Val
 245 250 255
 Ser Gln Asn Thr Ala Thr Glu Ser Gly Gly Gly Ile Tyr Ala Lys Asp
 260 265 270
 Ile Gln Leu Gln Ala Leu Pro Gly Ser Phe Thr Ile Thr Asp Asn Lys
 275 280 285
 Val Glu Thr Ser Leu Thr Thr Ser Thr Asn Leu Tyr Gly Gly Gly Ile
 290 295 300
 Tyr Ser Ser Gly Ala Val Thr Leu Thr Asn Ile Ser Gly Thr Phe Gly
 305 310 315 320
 Ile Thr Gly Asn Ser Val Ile Asn Thr Ala Thr Ser Gln Asp Ala Asp
 325 330 335
 Ile Gln Gly Gly Gly Ile Tyr Ala Thr Thr Ser Leu Ser Ile Asn Gln
 340 345 350
 Cys Asn Thr Pro Ile Leu Phe Ser Asn Asn Ser Ala Ala Thr Lys Lys
 355 360 365
 Thr Ser Thr Thr Lys Gln Ile Ala Gly Gly Ala Ile Phe Ser Ala Ala
 370 375 380
 Val Thr Ile Glu Asn Asn Ser Gln Pro Ile Ile Phe Leu Asn Asn Ser
 385 390 395 400
 Ala Lys Ser Glu Ala Thr Thr Ala Ala Thr Ala Gly Asn Lys Asp Ser
 405 410 415
 Cys Gly Gly Ala Ile Ala Ala Asn Ser Val Thr Leu Thr Asn Asn Pro
 420 425 430
 Glu Ile Thr Phe Lys Gly Asn Tyr Ala Glu Thr Gly Gly Ala Ile Gly
 435 440 445
 Cys Ile Asp Leu Thr Asn Gly Ser Pro Pro Arg Lys Val Ser Ile Ala
 450 455 460
 Asp Asn Gly Ser Val Leu Phe Gln Asp Asn Ser Ala Leu Asn Arg Gly
 465 470 475 480
 Gly Ala Ile Tyr Gly Glu Thr Ile Asp Ile Ser Arg Thr Gly Ala Thr
 485 490 495
 Phe Ile Gly Asn Ser Ser Lys His Asp Gly Ser Ala Ile Cys Cys Ser
 500 505 510

Thr	Ala	Leu	Thr	Leu	Ala	Pro	Asn	Ser	Gln	Leu	Ile	Phe	Glu	Asn	Asn	
		515					520						525			
Lys	Val	Thr	Glu	Thr	Thr	Ala	Thr	Thr	Lys	Ala	Ser	Ile	Asn	Asn	Leu	
		530				535					540					
Gly	Ala	Ala	Ile	Tyr	Gly	Asn	Asn	Glu	Thr	Ser	Asp	Val	Thr	Ile	Ser	
545					550					555					560	
Leu	Ser	Ala	Glu	Asn	Gly	Ser	Ile	Phe	Phe	Lys	Asn	Asn	Leu	Cys	Thr	
				565				570						575		
Ala	Thr	Asn	Lys	Tyr	Cys	Ser	Ile	Ala	Gly	Asn	Val	Lys	Phe	Thr	Ala	
			580					585					590			
Ile	Glu	Ala	Ser	Ala	Gly	Lys	Ala	Ile	Ser	Phe	Tyr	Asp	Ala	Val	Asn	
		595					600					605				
Val	Ser	Thr	Lys	Xaa	Thr	Asn	Ala	Gln	Glu	Leu	Lys	Leu	Asn	Glu	Lys	
		610				615					620					
Ala	Thr	Ser	Thr	Gly	Thr	Ile	Leu	Phe	Ser	Gly	Glu	Leu	His	Glu	Asn	
625					630					635					640	
Lys	Ser	Tyr	Ile	Pro	Gln	Lys	Val	Thr	Phe	Ala	His	Gly	Asn	Leu	Ile	
				645					650						655	
Leu	Gly	Lys	Asn	Ala	Glu	Leu	Ser	Val	Val	Ser	Phe	Thr	Gln	Ser	Pro	
			660					665					670			
Gly	Thr	Thr	Ile	Thr	Met	Gly	Pro	Gly	Ser	Val	Leu	Ser	Asn	His	Ser	
		675				680						685				
Lys	Glu	Ala	Gly	Gly	Ile	Ala	Ile	Asn	Asn	Val	Ile	Ile	Asp	Phe	Ser	
		690				695					700					
Glu	Ile	Val	Pro	Thr	Lys	Asp	Asn	Ala	Thr	Val	Ala	Pro	Pro	Thr	Leu	
705					710					715					720	
Lys	Leu	Val	Ser	Arg	Thr	Asn	Ala	Asp	Ser	Lys	Asp	Lys	Ile	Asp	Ile	
				725					730					735		
Thr	Gly	Thr	Val	Thr	Leu	Leu	Asp	Pro	Asn	Gly	Asn	Leu	Tyr	Gln	Asn	
			740					745					750			
Ser	Tyr	Leu	Gly	Glu	Asp	Arg	Asp	Ile	Thr	Leu	Phe	Asn	Ile	Asp	Asn	
		755					760					765				
Ser	Ala	Ser	Gly	Ala	Val	Thr	Ala	Thr	Asn	Val	Thr	Leu	Gln	Gly	Asn	
		770				775					780					
Leu	Gly	Ala	Lys	Lys	Gly	Tyr	Leu	Gly	Thr	Trp	Asn	Leu	Asp	Pro	Asn	
785					790					795					800	
Ser	Ser	Gly	Ser	Lys	Ile	Ile	Leu	Lys	Trp	Thr	Phe	Asp	Lys	Tyr	Leu	
				805					810					815		
Arg	Trp	Pro	Tyr	Ile	Pro	Arg	Asp	Asn	His	Phe	Tyr	Ile	Asn	Ser	Ile	
			820					825					830			
Trp	Gly	Ala	Gln	Asn	Ser	Leu	Val	Thr	Val	Lys	Gln	Gly	Ile	Leu	Gly	
		835					840					845				
Asn	Met	Leu	Asn	Asn	Ala	Arg	Phe	Glu	Asp	Pro	Ala	Phe	Asn	Asn	Phe	
		850				855					860					
Trp	Ala	Ser	Ala	Ile	Gly	Ser	Phe	Leu	Arg	Lys	Glu	Val	Ser	Arg	Asn	
865					870					875					880	
Ser	Asp	Ser	Phe	Thr	Tyr	His	Gly	Arg	Gly	Tyr	Thr	Ala	Ala	Val	Asp	
				885					890					895		
Ala	Lys	Pro	Arg	Gln	Glu	Phe	Ile	Leu	Gly	Ala	Ala	Phe	Ser	Gln	Val	
			900					905				910				
Phe	Gly	His	Ala	Glu	Ser	Glu	Tyr	His	Leu	Asp	Asn	Tyr	Lys	His	Lys	
		915					920					925				
Gly	Ser	Gly	His	Ser	Thr	Gln	Ala	Ser	Leu	Tyr	Ala	Gly	Asn	Ile	Phe	
		930				935					940					
Tyr	Phe	Pro	Ala	Ile	Arg	Ser	Arg	Pro	Ile	Leu	Phe	Gln	Gly	Val	Ala	
945					950					955					960	
Thr	Tyr	Gly	Tyr	Met	Gln	His	Asp	Thr	Thr	Thr	Tyr	Tyr	Pro	Ser	Ile	
				965					970					975		
Glu	Glu	Lys	Asn	Met	Ala	Asn	Trp	Asp	Ser	Ile	Ala	Trp	Leu	Phe	Asp	
			980					985					990			
Leu	Arg	Phe	Ser	Val	Asp	Leu	Lys	Glu	Pro	Gln	Pro	His	Ser	Thr	Ala	
		995					1000					1005				
Arg	Leu	Thr	Phe	Tyr	Thr	Glu	Ala	Glu	Tyr	Thr	Arg	Ile	Arg	Gln	Glu	
		1010					1015					1020				

Lys Phe Thr Glu Leu Asp Tyr Asp Pro Arg Ser Phe Ser Ala Cys Ser
 1025 1030 1035 1040
 Tyr Gly Asn Leu Ala Ile Pro Thr Gly Phe Ser Val Asp Gly Ala Leu
 1045 1050 1055
 Ala Trp Arg Glu Ile Ile Leu Tyr Asn Lys Val Ser Ala Ala Tyr Leu
 1060 1065 1070
 Pro Val Ile Leu Arg Asn Asn Pro Lys Ala Thr Tyr Glu Val Leu Ser
 1075 1080 1085
 Thr Lys Glu Lys Gly Asn Val Val Asn Val Leu Pro Thr Arg Asn Ala
 1090 1095 1100
 Ala Arg Ala Glu Val Ser Ser Gln Ile Tyr Leu Gly Ser Tyr Trp Thr
 1105 1110 1115 1120
 Leu Tyr Gly Thr Tyr Thr Ile Asp Ala Ser Met Asn Thr Leu Val Gln
 1125 1130 1135
 Met Ala Asn Gly Gly Ile Arg Phe Val Phe
 1140 1145

<210>581

<211>289

<212>PRT

<213>Chlamydia pneumoniae.

<400>581

Asn Asn Arg Ser Ser Tyr Gln Thr Ala Phe Val Met His Lys Val Ile
 1 5 10 15
 Val Xaa Ile Phe Leu Thr Leu Tyr Ser Leu Lys Ser Tyr Gly Asn Asp
 20 25 30
 Val Ile Asp Lys Pro His Val Leu Val Ser Ile Ala Pro Tyr Lys Phe
 35 40 45
 Leu Val Glu Gln Ile Ala Glu Glu Thr Cys Phe Val Tyr Ala Ile Val
 50 55 60
 Thr Asn His Tyr Asp Pro His Thr Tyr Glu Leu Pro Pro Gln Gln Ile
 65 70 75 80
 Lys Glu Leu Arg Gln Gly Asp Leu Trp Phe Arg Ile Gly Glu Ala Phe
 85 90 95
 Glu Lys Thr Cys Glu Arg Asn Leu Thr Cys Gln Gln Val Asp Leu Ser
 100 105 110
 Gln Asn Val Ser Leu Ile Gln Gly Lys Pro Cys Cys Asn Gln His Thr
 115 120 125
 Thr Asn Tyr Asp Thr His Thr Trp Leu Ser Pro Lys Asn Leu Lys Val
 130 135 140
 Gln Val Glu Thr Ile Val Thr Thr Leu Ser Lys Lys Tyr Pro Gln His
 145 150 155 160
 Ala Thr Leu Tyr Gln Ser Asn Gly Glu Lys Leu Leu Leu Ala Leu Asp
 165 170 175
 Gln Leu Asn Glu Glu Ile Leu Thr Ile Thr Ser Lys Ala Lys Gln Arg
 180 185 190
 His Ile Leu Val Ser His Gly Ala Phe Gly Tyr Phe Cys Arg Asp Tyr
 195 200 205
 Asn Phe Ser Gln His Thr Ile Glu Lys Ser Ser His Val Glu Pro Ser
 210 215 220
 Pro Lys Asp Val Ala Arg Val Phe Arg Asp Ile Glu Gln Tyr Lys Ile
 225 230 235 240
 Ser Ser Val Ile Leu Leu Glu Tyr Ser Gly Arg Arg Ser Ser Ala Met
 245 250 255
 Leu Ala Asp Arg Phe His Met His Thr Val Asn Leu Asp Pro Tyr Ala
 260 265 270
 Glu Asn Ile Leu Val Asn Leu Lys Thr Ile Ala Thr Thr Phe Ser Ser
 275 280 285
 Leu

<210>582

<211>352

<212>PRT

<213>Chlamydia pneumoniae

<400>582

Leu Lys Lys Asp Lys Asn Val Ile Met Phe Val Asp Gln Ile Thr Leu
 1 5 10 15
 Glu Leu Arg Ala Gly Lys Gly Gly Asn Gly Val Val Ala Trp Arg Lys
 20 25 30
 Glu Lys Tyr Leu Pro Lys Gly Gly Pro Tyr Gly Gly Asn Gly Gly Asn
 35 40 45
 Gly Gly Ser Val Ile Ile Glu Ala Thr Thr Ser Val Tyr Ser Phe Glu
 50 55 60
 Ala Tyr Arg Asn Ile Arg Phe Leu Lys Ala Pro Asp Gly Gln Ser Gly
 65 70 75 80
 Ala Thr Asn Asn Arg Thr Gly Arg Ser Gly Lys Asp Leu Ile Val Ser
 85 90 95
 Val Pro Thr Gly Thr Leu Leu Arg Asp Ala Glu Thr Gly Glu Ile Leu
 100 105 110
 His Asp Phe Thr Val Asp Gly Glu Arg Leu Leu Val Ser Gln Gly Gly
 115 120 125
 Lys Gly Lys Lys Gly Asn Thr Phe Phe Lys Thr Ser Val Asn Arg Ala
 130 135 140
 Pro Thr Lys Ala Thr Pro Gly Lys Pro Gly Glu Ile Arg Gln Val Glu
 145 150 155 160
 Leu Glu Leu Lys Leu Ile Ala Asp Ile Gly Leu Val Gly Phe Pro Asn
 165 170 175
 Ala Gly Lys Ser Thr Leu Phe Asn Thr Leu Ala His Thr Glu Val Lys
 180 185 190
 Val Gly Ala Tyr Pro Phe Thr Thr Leu Ala Pro Ser Leu Gly Leu Val
 195 200 205
 Leu Cys Lys Asp Arg Leu Tyr Gln Lys Pro Trp Ile Ile Ala Asp Ile
 210 215 220
 Pro Gly Ile Ile Glu Gly Ala His Gln Asn Lys Gly Leu Gly Leu Asp
 225 230 235 240
 Phe Leu Arg His Ile Glu Arg Thr Leu Leu Leu Phe Val Ile Asp
 245 250 255
 Val Ser Lys Arg Glu Arg Asn Ser Pro Glu Glu Asp Leu Glu Thr Leu
 260 265 270
 Ile His Glu Leu His Ser His Gln Pro Asp Phe Glu Lys Lys Asp Met
 275 280 285
 Leu Val Ala Leu Asn Lys Ile Asp Asp Leu Leu Pro Asp Glu Gln Glu
 290 295 300
 Glu Cys Leu Gln Ser Phe Gln Lys Arg Phe Pro Ser Tyr Thr Phe Val
 305 310 315 320
 Leu Ile Ser Gly Leu Thr Gly Glu Gly Val Asp Gly Leu Tyr Arg Phe
 325 330 335
 Phe Thr Gln Asp Ser Leu Tyr Asn Xaa Thr Pro Ser Ala Met Ile Ser
 340 345 350

<210>583

<211>84

<212>PRT

<213>Chlamydia pneumoniae

<400>583

Met Ala His Lys Lys Gly Gln Gly Ala Ser Arg Asn Gly Arg Asp Ser
 1 5 10 15
 Lys Ser Lys Arg Leu Gly Val Lys Val Gly Ala Gly Gln Lys Val Ser
 20 25 30
 Thr Gly Ser Ile Leu Val Arg Gln Arg Gly Thr Arg Trp Asn Pro Ala
 35 40 45
 Gln Asn Val Gly Arg Gly Arg Asp Asp Thr Leu Phe Ala Leu Val Asp
 50 55 60
 Gly Ile Val Val Met Lys Lys Thr Asn Arg Thr Tyr Ile Ser Val Val
 65 70 75 80
 Pro Glu Gln Leu

<210>584

<211>107

<212>PRT

<213>Chlamydia pneumoniae

<400>584

Leu Met Glu Pro Tyr Ala Val Ile Gln Thr Gly Ser Lys Gln Tyr Gln
 1 5 10 15
 Val Arg Ser Gly Asp Val Ile Asp Val Glu Leu Leu Gly Glu Val Ala
 20 25 30
 Ser Asp Lys Glu Val Ile Phe Gln Asp Val Leu Phe Val Phe Asp Gly
 35 40 45
 Thr Lys Ala Ser Leu Gly Ser Pro Thr Ile Ala Asn Ala Gln Val Lys
 50 55 60
 Ala Glu Tyr Leu Ser His Val Lys Gly Glu Lys Val Val Ala Tyr Lys
 65 70 75 80
 Tyr Lys Lys Arg Lys Asn Tyr His Arg Lys His Gly His Arg Gln Lys
 85 90 95
 Tyr Leu Arg Val Lys Ile Arg Glu Ile Leu Ile
 100 105

<210>585

<211>199

<212>PRT

<213>Chlamydia pneumoniae

<400>585

Val Asn Phe Arg Asn Phe Val Val Ser Ser Val Lys Glu Ile Leu Lys
 1 5 10 15
 Lys Asn Ile Tyr Gln Val Val Met Asp Arg Asp Asn Glu Val Pro Leu
 20 25 30
 Pro Lys Pro Lys Trp Ile Tyr Arg Thr Gly Ile Gly Gln Asp Ser His
 35 40 45
 Arg Phe Leu Pro Glu Ser Ser Thr Lys Pro Cys Ile Leu Gly Gly Ile
 50 55 60
 Ile Phe Asp His Cys Pro Gly Phe Gln Ala Asn Ser Asp Gly Asp Ile
 65 70 75 80
 Ile Phe His Ala Ile Cys Asn Ala Ile Ser Ser Val Thr Asn Lys Ile
 85 90 95
 Ile Leu Gly Lys Val Ala Asp Glu Leu Leu Gln Thr Arg Gly Ile Thr
 100 105 110
 Asp Ser Gly Ile Tyr Leu Glu Glu Ala Leu Lys Ser Leu Lys Pro Asn
 115 120 125
 Gln Lys Ile Ser His Val Ala Ile Thr Ile Glu Gly Ser Arg Pro Lys
 130 135 140
 Phe Leu Cys Lys Leu Ser Ala Leu Arg Gln Asn Ile Ala Gln Val Met
 145 150 155 160
 Asn Leu Thr Pro Thr Asp Ile Gly Ile Thr Ala Thr Ser Gly Glu Gly
 165 170 175
 Leu Ser Asp Phe Gly Cys Gly Asp Gly Val Gln Cys Phe Cys Val Leu
 180 185 190
 Thr Val Met Glu Tyr Cys Asp
 195

<210>586

<211>246

<212>PRT

<213>Chlamydia pneumoniae

<400>586

Ile Pro Ala Lys Leu Asn Ser Phe Phe Pro Asp Lys Asp Pro Lys Ile
 1 5 10 15
 Thr Leu Tyr Asp Ala Ile Gln Glu Tyr Arg Pro Gln Ile Pro Ile Glu
 20 25 30
 Leu Phe Ala Glu Ser Val Phe Pro Leu Leu Pro Arg Phe Tyr Ser Ile
 35 40 45
 Ala Ser Ser Pro Asp Leu His Pro Lys Ser Ile Glu Leu Leu Val Lys
 50 55 60
 His Val Ser Tyr Pro Gly Lys Tyr Gln Lys Arg Phe Gly Val Cys Ser
 65 70 75 80
 Ser Phe Leu Cys Ser Glu Leu Gln Val Asn Asp Ser Ala Tyr Ile Phe
 85 90 95

Val Gln Pro Thr Lys His Phe Thr Leu Ser Thr Gln Thr Glu Gly Lys
 100 105 110
 Pro Leu Val Met Ile Gly Ala Gly Thr Gly Ile Ala Pro Tyr Lys Ala
 115 120 125
 Phe Leu Glu Glu Arg Leu Phe Asn Lys Asp Pro Gly Asn Asn Leu Leu
 130 135 140
 Phe Phe Gly Glu Arg Lys Glu Lys Val Asn Phe Tyr Tyr Arg Glu Phe
 145 150 155 160
 Trp Asn His Ala Glu Glu Glu Gly Lys Leu Lys Leu Phe Leu Ala Phe
 165 170 175
 Ser Arg Glu Arg Asp Gln Lys Val Tyr Val Gln Asp Leu Leu Arg Ile
 180 185 190
 Gln Lys Asp Glu Val Arg Lys Ala Tyr Glu Glu Gly Gly Phe Phe Phe
 195 200 205
 Val Cys Gly Arg Lys Val Leu Gly Ile Glu Val Lys His Ala Leu Glu
 210 215 220
 Glu Ile Leu Gly Lys Asp Thr Leu Ala Ser Leu Arg Lys Glu His Arg
 225 230 235 240
 Tyr Val Val Asp Val Tyr
 245

<210>587

<211>85

<212>PRT

<213>Chlamydia pneumoniae

<400>587

Lys Met Tyr Leu Gln Glu Lys Phe Lys Ala Gln Gln Val Pro Leu Val
 1 5 10 15
 Leu Arg Glu Leu Leu Ser Cys Ser Asp Ser Ile Asn Asp Ser Asp Pro
 20 25 30
 Ile Tyr Arg Met Val Phe Asp Ser Asn Asp Thr Thr Ile Ser Tyr Lys
 35 40 45
 Val Gly Asp Ala Leu Gly Val Leu Pro Glu Asn Ser Lys Glu Val Ser
 50 55 60
 Glu His Val Leu Gln Leu Leu Arg Leu Phe Pro Asn Asp Pro Cys Gln
 65 70 75 80
 Arg Lys Lys Asn Phe
 85

<210>588

<211>118

<212>PRT

<213>Chlamydia pneumoniae

<400>588

Lys Lys Phe Lys Lys Arg Leu Leu Arg Ser Lys Gly Cys Met Lys Gln
 1 5 10 15
 Gln Lys Gln Lys Ile Arg Ile Arg Leu Lys Gly Phe Asp Gln Gly Gln
 20 25 30
 Leu Asp Arg Ser Thr Ala Asp Ile Val Glu Thr Ala Lys Arg Thr Gly
 35 40 45
 Ala Arg Val Val Gly Pro Ile Pro Leu Pro Thr Lys Arg Glu Val Tyr
 50 55 60
 Thr Val Leu Arg Ser Pro His Val Asp Lys Lys Ser Arg Glu Gln Phe
 65 70 75 80
 Glu Ile Arg Thr His Lys Arg Leu Val Asp Ile Leu Asp Pro Thr Gly
 85 90 95
 Lys Thr Ile Asp Ala Leu Lys Met Leu Ala Leu Pro Ala Gly Val Asp
 100 105 110
 Ile Lys Ile Lys Ala Ala
 115

<210>589

<211>651

<212>PRT

<213>Chlamydia pneumoniae

<400>589

Ser His Glu Gly Gly Ala Thr Met Asp Trp Met Ala Gln Glu Gln Glu

1 5 10 15
 Arg Gly Ile Thr Ile Thr Ser Ala Ala Thr Thr Val Phe Trp Leu Gly
 20 25 30
 Ala Lys Ile Asn Ile Ile Asp Thr Pro Gly His Val Asp Phe Thr Ile
 35 40 45
 Glu Val Glu Arg Ser Leu Arg Val Leu Asp Gly Ala Val Ala Val Phe
 50 55 60
 Asp Ala Val Ser Gly Val Glu Pro Gln Ser Glu Thr Val Trp Arg Gln
 65 70 75 80
 Ala Asp Lys Tyr Gly Val Pro Arg Ile Ala Phe Val Asn Lys Met Asp
 85 90 95
 Arg Met Gly Ala Asp Tyr Phe Ala Ala Val Glu Ser Met Lys Glu Lys
 100 105 110
 Leu Gly Ala Asn Ala Phe Pro Val His Cys Pro Ile Gly Ser Glu Ser
 115 120 125
 Gln Phe Val Gly Met Val Asp Leu Ile Ser Gln Lys Ala Leu Tyr Phe
 130 135 140
 Leu Asp Asp Thr Leu Gly Ala Lys Trp Glu Glu Lys Glu Ile Ser Glu
 145 150 155 160
 Asp Leu Lys Glu Arg Cys Ala Glu Leu Arg Ala Asn Leu Leu Glu Glu
 165 170 175
 Leu Ala Thr Ile Asp Glu Ser Asn Glu Ala Phe Met Met Lys Val Leu
 180 185 190
 Glu Asp Pro Asp Ser Ile Thr Glu Asp Glu Ile His Gln Val Met Arg
 195 200 205
 Lys Gly Val Ile Glu Asn Lys Ile Asn Pro Val Leu Cys Gly Thr Ala
 210 215 220
 Phe Lys Asn Lys Gly Val Gln Gln Leu Leu Asn Val Ile Val Lys Trp
 225 230 235 240
 Leu Pro Ser Pro Leu Asp Arg Gly Asn Ile Arg Gly Ile Asn Leu Lys
 245 250 255
 Thr Asp Gln Glu Ile Ser Leu Glu Pro Arg Arg Asp Gly Pro Leu Ala
 260 265 270
 Ala Leu Ala Phe Lys Ile Met Thr Asp Pro Tyr Val Gly Arg Ile Thr
 275 280 285
 Phe Ile Arg Ile Tyr Ser Gly Thr Leu Lys Lys Gly Ser Ala Ile Leu
 290 295 300
 Asn Ser Thr Lys Asp Lys Lys Glu Arg Ile Ser Arg Leu Leu Glu Met
 305 310 315 320
 His Ala Asn Glu Arg Thr Asp Arg Asp Glu Phe Thr Val Gly Asp Ile
 325 330 335
 Gly Ala Cys Val Gly Leu Lys Phe Ser Val Thr Gly Asp Thr Leu Cys
 340 345 350
 Asp Asp Asn Gln Glu Ile Val Leu Glu Arg Ile Glu Phe Pro Asp Pro
 355 360 365
 Val Ile Asp Met Ala Ile Glu Pro Lys Ser Lys Gly Asp Arg Glu Lys
 370 375 380
 Leu Ala Gln Ala Leu Ser Ser Leu Ser Glu Glu Asp Pro Thr Phe Arg
 385 390 395 400
 Val Ser Thr Asn Glu Glu Thr Gly Gln Thr Ile Ile Ser Gly Met Gly
 405 410 415
 Glu Leu His Leu Asp Ile Leu Arg Asp Arg Met Ile Arg Glu Phe Lys
 420 425 430
 Val Glu Ala Asn Val Gly Lys Pro Gln Val Ser Tyr Lys Glu Thr Ile
 435 440 445
 Thr Val Ser Gly Asn Ser Glu Thr Lys Tyr Val Lys Gln Ser Gly Gly
 450 455 460
 Arg Gly Gln Tyr Ala His Val Cys Leu Glu Ile Glu Pro Asn Glu Pro
 465 470 475 480
 Gly Lys Gly Asn Glu Val Val Ser Lys Ile Val Gly Gly Val Ile Pro
 485 490 495
 Lys Glu Tyr Ile Pro Ala Val Ile Lys Gly Ile Glu Glu Gly Leu Asn
 500 505 510
 Thr Gly Val Leu Ala Gly Tyr Gly Leu Val Asp Val Lys Val Ser Ile

Val	Phe	Gly	Ser	Tyr	His	Glu	Val	Asp	Ser	Ser	Glu	Met	Ala	Phe	Lys
530						535					540				
Ile	Cys	Gly	Ser	Met	Ala	Val	Lys	Asp	Ala	Cys	Arg	Lys	Ala	Lys	Pro
545					550					555					560
Val	Ile	Leu	Glu	Pro	Ile	Met	Lys	Val	Ala	Val	Ile	Thr	Pro	Glu	Asp
				565					570					575	
His	Leu	Gly	Asp	Val	Ile	Gly	Asp	Leu	Asn	Arg	Arg	Arg	Gly	Lys	Ile
			580					585					590		
Leu	Gly	Gln	Glu	Ser	Ser	Arg	Gly	Met	Ala	Gln	Val	Asn	Ala	Glu	Val
		595					600					605			
Pro	Leu	Ser	Glu	Met	Phe	Gly	Tyr	Thr	Thr	Ser	Leu	Arg	Ser	Leu	Thr
	610					615					620				
Ser	Gly	Arg	Ala	Thr	Ser	Thr	Met	Glu	Pro	Ala	Phe	Phe	Ala	Lys	Val
625					630					635					640
Pro	Gln	Lys	Ile	Gln	Glu	Glu	Ile	Val	Lys	Lys					
				645					650						

<210>590

<211>82

<212>PRT

<213>Chlamydia pneumoniae

<400>590

Leu	Asn	Tyr	Gly	Glu	Asn	Asn	Lys	Phe	Met	Ser	Asn	Gln	Glu	Phe	Asp
1				5				10						15	
Leu	Ser	Ala	Ile	Arg	Asn	Ile	Gly	Ile	Met	Ala	His	Ile	Asp	Ala	Gly
			20					25					30		
Lys	Thr	Thr	Thr	Thr	Glu	Arg	Ile	Leu	Phe	Tyr	Ala	Gly	Arg	Thr	His
		35					40					45			
Lys	Ile	Gly	Glu	Val	Met	Lys	Ala	Glu	Leu	Pro	Trp	Thr	Gly	Trp	Pro
	50					55				60					
Arg	Ser	Lys	Lys	Glu	Glu	Leu	Arg	Leu	Pro	Leu	Leu	Gln	Leu	Leu	Ser
65					70					75					80
Ser	Gly														

<210>591

<211>159

<212>PRT

<213>Chlamydia pneumoniae

<400>591

Met	Tyr	Met	Ser	Arg	Arg	His	Ser	Ala	Glu	Lys	Arg	Asp	Ile	Pro	Gly
1				5					10					15	
Asp	Pro	Ile	Tyr	Gly	Ser	Val	Ile	Leu	Glu	Lys	Phe	Ile	Asn	Lys	Val
			20					25					30		
Met	Met	His	Gly	Lys	Lys	Ser	Val	Ala	Arg	Lys	Ile	Val	Tyr	Ser	Ala
		35					40					45			
Leu	Glu	Arg	Phe	Gly	Lys	Lys	Leu	Asn	Leu	Glu	Asn	Val	Leu	Glu	Gly
	50					55				60					
Phe	Gly	Glu	Ala	Leu	Glu	Asn	Ala	Lys	Pro	Ile	Leu	Glu	Val	Arg	Ser
65					70					75				80	
Arg	Arg	Val	Gly	Gly	Ala	Thr	Tyr	Gln	Val	Pro	Val	Glu	Val	Ala	Ser
				85					90					95	
Glu	Arg	Arg	Asn	Cys	Leu	Ala	Met	Gln	Trp	Ile	Ile	Lys	His	Ala	Arg
			100					105					110		
Ser	Lys	Pro	Gly	Lys	Ser	Met	Glu	Val	Gly	Leu	Ala	Thr	Glu	Leu	Ile
		115					120						125		
Asp	Cys	Phe	Asn	Lys	Gln	Gly	Ala	Thr	Ile	Lys	Lys	Arg	Glu	Asp	Thr
	130					135					140				
His	Arg	Met	Ala	Glu	Ala	Asn	Lys	Ala	Phe	Ala	His	Tyr	Lys	Trp	
145					150					155					

<210>592

<211>146

<212>PRT

<213>Chlamydia pneumoniae

<400>592

Leu Pro Thr Lys Arg Ala Leu Leu Tyr Ile Ser Met Leu Val Val Val
 1 5 10 15
 Arg Leu Lys Arg Glu Glu Tyr Met Pro Thr Ile Asn Gln Leu Ile Arg
 20 25 30
 Lys Arg Arg Lys Ser Ser Leu Ala Arg Lys Lys Ser Pro Ala Leu Gln
 35 40 45
 Lys Cys Pro Gln Lys Arg Gly Val Cys Leu Gln Val Lys Thr Lys Thr
 50 55 60
 Pro Lys Lys Pro Asn Ser Ala Leu Arg Lys Val Ala Trp Val Arg Leu
 65 70 75 80
 Ser Asn Gly Gln Glu Val Ile Ala Tyr Ile Gly Gly Glu Gly His Asn
 85 90 95
 Leu Gln Glu His Ser Ile Val Leu Ile Gln Gly Gly Arg Val Lys Asp
 100 105 110
 Leu Pro Gly Val Arg Tyr His Ile Val Arg Gly Thr Leu Asp Cys Ala
 115 120 125
 Ala Val Lys Asn Arg Lys Gln Ser Arg Ser Arg Tyr Gly Ala Lys Arg
 130 135 140
 Pro Lys
 145
 <210>593
 <211>268
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>593
 Gly Cys Met Trp Arg Val Val Leu Arg Phe Leu Ile Ile Phe Ile Leu
 1 5 10 15
 Gly Arg Ala Val Phe Pro Leu Arg Ala Ser Glu Ser Phe Ser Trp Glu
 20 25 30
 Thr Ser Thr Cys Leu Thr Val Leu Gly Ile Pro Phe Ile Asp Ile Ile
 35 40 45
 Leu Thr Thr Asn Glu Asp Phe Val Ala Gln Cys Gly Leu Gln Ile Gly
 50 55 60
 Thr Ile Ser Ser Thr Asn Asn Ala Lys Ile Lys Glu Ile Phe Leu Ile
 65 70 75 80
 Tyr Lys Glu Lys Phe Pro Glu Ala Ser Ile Ser Phe Lys Arg Lys Glu
 85 90 95
 Pro Leu Asn Leu Ser Gln Ser His Leu Ser Asp Leu Gly Ile Leu Cys
 100 105 110
 Met Arg Asn Gly Glu Thr Tyr Ala Glu Gly Met Ala Asn Lys Glu Asn
 115 120 125
 Gly Pro Ala Leu Lys Gln Pro Lys Asp Leu Arg Leu Val Leu Arg Cys
 130 135 140
 Pro Asn Gln Pro Asp Thr Leu Leu Tyr Ser Glu Lys Glu Ala Glu Lys
 145 150 155 160
 Gly Ile Glu Thr Asn Thr Cys Leu Cys Asn Gln Gly Tyr Thr Leu Leu
 165 170 175
 Asp Gly Gln Leu Ile Leu Tyr Gly Asp Ser Ile Glu Lys Phe Leu Lys
 180 185 190
 Glu Thr Lys Arg Lys Asn Asn His Thr Leu Val Asp Leu Cys Asp Ser
 195 200 205
 Gln Val Val Thr Thr Phe Leu Gly Arg Phe Trp Ser Leu Leu Asn Tyr
 210 215 220
 Val Gln Val Leu Phe Leu Ser Glu Asp Ser Ala Lys Xaa Leu Ala Gly
 225 230 235 240
 Ile Pro Asp Leu Ala Gln Xaa Arg Asn Cys Phe Pro Thr Pro Tyr Leu
 245 250 255
 Cys Phe Leu Phe Ile Pro Thr Ile Leu Phe Thr Ser
 260 265

<210>594
 <211>648
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>594

Met	Phe	Val	Met	Lys	Lys	Leu	Val	Arg	Leu	Cys	Val	Val	Leu	Leu	Ser	1	5	10	15
Leu	Leu	Pro	Asn	Val	Leu	Phe	Ser	Ser	Asp	Leu	Leu	Arg	Glu	Gly		20	25	30	
Ile	Lys	Lys	Met	Met	Asp	Lys	Leu	Ile	Glu	Tyr	His	Val	Asp	Ala	Gln	35	40	45	
Glu	Val	Ser	Thr	Asp	Ile	Leu	Ser	Arg	Ser	Leu	Ser	Ser	Tyr	Ile	Gln	50	55	60	
Ser	Phe	Asp	Pro	His	Lys	Ser	Tyr	Leu	Ser	Asn	Gln	Glu	Val	Ala	Val	65	70	75	80
Phe	Leu	Gln	Ser	Pro	Glu	Thr	Lys	Lys	Arg	Leu	Leu	Lys	Asn	Tyr	Lys	85	90	95	
Ala	Gly	Asn	Phe	Ala	Ile	Tyr	Arg	Asn	Ile	Asn	Gln	Leu	Ile	His	Glu	100	105	110	
Ser	Ile	Leu	Arg	Ala	Arg	Gln	Trp	Arg	Asn	Glu	Trp	Val	Lys	Asn	Pro	115	120	125	
Lys	Glu	Leu	Val	Leu	Glu	Ala	Ser	Ser	Tyr	Gln	Ile	Ser	Lys	Gln	Pro	130	135	140	
Met	Gln	Trp	Ser	Lys	Ser	Leu	Asp	Glu	Val	Lys	Gln	Arg	Gln	Arg	Ala	145	150	155	160
Leu	Leu	Leu	Ser	Tyr	Leu	Ser	Leu	His	Leu	Ala	Gly	Ala	Ser	Ser	Ser	165	170	175	
Arg	Tyr	Glu	Gly	Lys	Glu	Glu	Gln	Leu	Ala	Ala	Leu	Cys	Leu	Arg	Gln	180	185	190	
Ile	Glu	Asn	His	Glu	Asn	Val	Tyr	Leu	Gly	Ile	Asn	Asp	His	Gly	Val	195	200	205	
Ala	Met	Asp	Arg	Asp	Glu	Glu	Ala	Tyr	Gln	Phe	His	Ile	Arg	Val	Val	210	215	220	
Lys	Ala	Leu	Ala	His	Ser	Leu	Asp	Ala	His	Thr	Ala	Tyr	Phe	Ser	Lys	225	230	235	240
Asp	Glu	Ala	Leu	Ala	Met	Arg	Ile	Gln	Leu	Glu	Lys	Gly	Met	Cys	Gly	245	250	255	
Ile	Gly	Val	Val	Leu	Lys	Glu	Asp	Ile	Asp	Gly	Val	Val	Val	Arg	Glu	260	265	270	
Ile	Ile	Pro	Gly	Gly	Pro	Ala	Ala	Lys	Ser	Gly	Asp	Leu	Gln	Leu	Gly	275	280	285	
Asp	Ile	Ile	Tyr	Arg	Val	Asp	Gly	Lys	Asp	Ile	Glu	His	Leu	Ser	Phe	290	295	300	
Arg	Gly	Val	Leu	Asp	Cys	Leu	Arg	Gly	Ser	His	Gly	Ser	Thr	Val	Val	305	310	315	320
Leu	Asp	Ile	His	Arg	Gly	Glu	Ser	Asp	His	Thr	Ile	Ala	Leu	Arg	Arg	325	330	335	
Glu	Lys	Ile	Leu	Leu	Glu	Asp	Arg	Arg	Val	Asp	Val	Ser	Tyr	Glu	Pro	340	345	350	
Tyr	Gly	Asp	Gly	Val	Ile	Gly	Lys	Val	Thr	Leu	His	Ser	Phe	Tyr	Glu	355	360	365	
Gly	Glu	Asn	Gln	Val	Ser	Ser	Glu	Gln	Asp	Leu	Arg	Arg	Ala	Ile	Gln	370	375	380	
Gly	Leu	Lys	Glu	Lys	Asn	Leu	Leu	Gly	Leu	Val	Leu	Asp	Ile	Arg	Glu	385	390	395	400
Asn	Thr	Gly	Gly	Phe	Leu	Ser	Gln	Ala	Ile	Lys	Val	Ser	Gly	Leu	Phe	405	410	415	
Met	Thr	Asn	Gly	Val	Val	Val	Val	Ser	Arg	Tyr	Ala	Asp	Gly	Thr	Met	420	425	430	
Lys	Cys	Tyr	Arg	Thr	Val	Ser	Pro	Lys	Lys	Phe	Tyr	Asp	Gly	Pro	Leu	435	440	445	
Ala	Ile	Leu	Val	Ser	Lys	Ser	Ser	Ala	Ser	Ala	Ala	Glu	Ile	Val	Ala	450	455	460	
Gln	Thr	Leu	Gln	Asp	Tyr	Gly	Val	Ala	Leu	Val	Val	Gly	Asp	Glu	Gln	465	470	475	480
Thr	Tyr	Gly	Lys	Gly	Thr	Ile	Gln	His	Gln	Thr	Ile	Thr	Gly	Asp	Ala	485	490	495	
Ser	Gln	Asp	Asp	Cys	Phe	Lys	Val	Thr	Val	Gly	Lys	Tyr	Tyr	Ser	Pro	500	505	510	

Ser Gly Lys Ser Thr Gln Leu Gln Gly Val Lys Ser Asp Ile Leu Ile
 515 520 525
 Pro Ser Leu Tyr Ala Glu Asp Arg Leu Gly Glu Arg Phe Leu Glu His
 530 535 540
 Pro Leu Pro Ala Asp Cys Cys Asp Asn Val Leu His Asp Pro Leu Thr
 545 550 555 560
 Asp Leu Asp Thr Gln Thr Arg Pro Trp Phe Gln Lys Tyr Tyr Leu Pro
 565 570 575
 Asn Leu Gln Lys Gln Glu Thr Leu Trp Arg Glu Met Leu Pro Gln Leu
 580 585 590
 Thr Lys Asn Ser Glu Gln Arg Leu Ser Glu Asn Ser Asn Phe Gln Ala
 595 600 605
 Phe Leu Ser Gln Ile Lys Ser Ser Glu Lys Thr Asp Leu Ser Tyr Gly
 610 615 620
 Ser Asn Asp Leu Gln Leu Glu Glu Ser Ile Asn Ile Leu Lys Asp Met
 625 630 635 640
 Ile Leu Leu Gln Gln Cys Arg Lys
 645

<210>595

<211>199

<212>PRT

<213>Chlamydia pneumoniae

<400>595

Glu Asn Gly Met Ser Ser Asn Leu His Pro Val Gly Gly Thr Gly Thr
 1 5 10 15
 Gly Ala Ala Ala Pro Glu Ser Val Leu Asn Ile Val Glu Glu Ile Ala
 20 25 30
 Ala Ser Gly Ser Val Thr Ala Gly Leu Gln Ala Ile Thr Ser Ser Pro
 35 40 45
 Gly Met Val Asn Leu Leu Ile Gly Trp Ala Lys Thr Lys Phe Ile Gln
 50 55 60
 Pro Ile Arg Glu Ser Lys Leu Phe Gln Ser Arg Ala Cys Gln Ile Thr
 65 70 75 80
 Leu Leu Val Leu Gly Ile Leu Leu Val Val Ala Gly Leu Ala Cys Met
 85 90 95
 Phe Ile Phe His Ser Gln Leu Gly Ala Asn Ala Phe Trp Leu Ile Ile
 100 105 110
 Pro Ala Ala Ile Gly Leu Ile Lys Leu Leu Val Thr Ser Leu Cys Phe
 115 120 125
 Asp Glu Ala Cys Thr Ser Glu Lys Leu Met Val Phe Gln Lys Trp Ala
 130 135 140
 Gly Val Leu Glu Asp Gln Leu Asp Asp Gly Ile Leu Asn Asn Ser Asn
 145 150 155 160
 Lys Ile Phe Gly His Val Lys Thr Glu Gly Asn Thr Ser Arg Ala Xaa
 165 170 175
 Thr Pro Val Leu Asn Asp Gly Arg Gly Xaa Pro Val Leu Ser Pro Leu
 180 185 190
 Val Ser Lys Ile Ala Arg Val
 195

<210>596

<211>556

<212>PRT

<213>Chlamydia pneumoniae

<400>596

Met Ser Lys Leu Ile Arg Arg Val Val Thr Val Leu Ala Leu Thr Ser
 1 5 10 15
 Met Ala Ser Cys Phe Ala Ser Gly Gly Ile Glu Ala Ala Val Ala Glu
 20 25 30
 Ser Leu Ile Thr Lys Ile Val Ala Ser Ala Glu Thr Lys Pro Ala Pro
 35 40 45
 Val Pro Met Thr Ala Lys Lys Val Arg Leu Val Arg Arg Asn Lys Gln
 50 55 60
 Pro Val Glu Gln Lys Ser Arg Gly Ala Phe Cys Asp Lys Glu Phe Tyr
 65 70 75 80

Pro Cys Glu Glu Gly Arg Cys Gln Pro Val Glu Ala Gln Gln Glu Ser
 85 90 95
 Cys Tyr Gly Arg Leu Tyr Ser Val Lys Val Asn Asp Asp Cys Asn Val
 100 105 110
 Glu Ile Cys Gln Ser Val Pro Glu Tyr Ala Thr Val Gly Ser Pro Tyr
 115 120 125
 Pro Ile Glu Ile Leu Ala Ile Gly Lys Lys Asp Cys Val Asp Val Val
 130 135 140
 Ile Thr Gln Gln Leu Pro Cys Glu Ala Glu Phe Val Ser Ser Asp Pro
 145 150 155 160
 Glu Thr Thr Pro Thr Ser Asp Gly Lys Leu Val Trp Lys Ile Asp Arg
 165 170 175
 Leu Gly Ala Gly Asp Lys Cys Lys Ile Thr Val Trp Val Lys Pro Leu
 180 185 190
 Lys Glu Gly Cys Cys Phe Thr Ala Ala Thr Val Cys Ala Cys Pro Glu
 195 200 205
 Leu Arg Ser Tyr Thr Lys Cys Gly Gln Pro Ala Ile Cys Ile Lys Gln
 210 215 220
 Glu Gly Pro Asp Cys Ala Cys Leu Arg Cys Pro Val Cys Tyr Lys Ile
 225 230 235 240
 Glu Val Val Asn Thr Gly Ser Ala Ile Ala Arg Asn Val Thr Val Asp
 245 250 255
 Asn Pro Val Pro Asp Gly Tyr Ser His Ala Ser Gly Gln Arg Val Leu
 260 265 270
 Ser Phe Asn Leu Gly Asp Met Arg Pro Gly Asp Lys Lys Val Phe Thr
 275 280 285
 Val Glu Phe Cys Pro Gln Arg Arg Gly Gln Ile Thr Asn Val Ala Thr
 290 295 300
 Val Thr Tyr Cys Gly Gly His Lys Cys Ser Ala Asn Val Thr Thr Val
 305 310 315 320
 Val Asn Glu Pro Cys Val Gln Val Asn Ile Ser Gly Ala Asp Trp Ser
 325 330 335
 Tyr Val Cys Lys Pro Val Glu Tyr Ser Ile Ser Val Ser Asn Pro Gly
 340 345 350
 Asp Leu Val Leu His Asp Val Val Ile Gln Asp Thr Leu Pro Ser Gly
 355 360 365
 Val Thr Val Leu Glu Ala Pro Gly Gly Glu Ile Cys Cys Asn Lys Val
 370 375 380
 Val Trp Arg Ile Lys Glu Met Cys Pro Gly Glu Thr Leu Gln Phe Lys
 385 390 395 400
 Leu Val Val Lys Ala Gln Val Pro Gly Arg Phe Thr Asn Gln Val Ala
 405 410 415
 Val Thr Ser Glu Ser Asn Cys Gly Thr Cys Thr Ser Cys Ala Glu Thr
 420 425 430
 Thr Thr His Trp Lys Gly Leu Ala Thr His Met Cys Val Leu Asp
 435 440 445
 Thr Asn Asp Pro Ile Cys Val Gly Glu Asn Thr Val Tyr Arg Ile Cys
 450 455 460
 Val Thr Asn Arg Gly Ser Ala Glu Asp Thr Asn Val Ser Leu Ile Leu
 465 470 475 480
 Lys Phe Ser Lys Glu Leu Gln Pro Ile Ala Ser Ser Gly Pro Thr Lys
 485 490 495
 Gly Thr Ile Ser Gly Asn Thr Val Val Phe Asp Ala Leu Pro Lys Leu
 500 505 510
 Gly Ser Lys Glu Ser Val Glu Phe Ser Val Thr Leu Lys Gly Ile Ala
 515 520 525
 Pro Gly Asp Ala Arg Gly Glu Ala Ile Leu Ser Ser Asp Thr Leu Thr
 530 535 540
 Ser Pro Val Ser Asp Thr Glu Asn Thr His Val Tyr
 545 550 555

<210>597

<211>90

<212>PRT

<213>Chlamydia pneumoniae

<400>597

Met Lys Lys Ala Val Leu Ile Ala Ala Met Phe Cys Gly Val Val Ser
 1 5 10 15
 Leu Ser Ser Cys Cys Arg Ile Val Asp Cys Cys Phe Glu Asp Pro Cys
 20 25 30
 Ala Pro Ser Ser Cys Asn Pro Cys Glu Val Ile Arg Lys Lys Glu Arg
 35 40 45
 Ser Cys Gly Gly Asn Ala Cys Gly Ser Tyr Val Pro Ser Cys Ser Asn
 50 55 60
 Pro Cys Gly Ser Thr Glu Cys Asn Ser Gln Ser Pro Gln Val Lys Gly
 65 70 75 80
 Cys Thr Ser Pro Asp Gly Arg Cys Lys Gln
 85 90

<210>598

<211>516

<212>PRT

<213>Chlamydia pneumoniae

<400>598

Met Lys Ser Leu Trp Ser Lys Asp Lys Arg Ile Met Asn Trp Glu Asn
 1 5 10 15
 Val Arg Val Arg Val Ala Pro Ser Pro Thr Gly Asp Pro His Val Gly
 20 25 30
 Thr Ala Tyr Met Ala Leu Phe Asn Glu Ile Phe Ala Lys Arg Phe Lys
 35 40 45
 Gly Lys Met Ile Leu Arg Ile Glu Asp Thr Asp Arg Thr Arg Ser Arg
 50 55 60
 Gln Asp Tyr Glu Glu Asn Ile Phe Ser Ala Leu Arg Trp Cys Gly Ile
 65 70 75 80
 Gln Trp Asp Glu Gly Pro Asp Val Gly Gly Pro Tyr Gly Pro Tyr Arg
 85 90 95
 Gln Ser Glu Arg Thr Lys Ile Tyr Gln Gly Tyr Val Glu Thr Leu Leu
 100 105 110
 Lys Thr Asp Cys Ala Tyr Lys Cys Phe Ala Thr Pro Gln Glu Leu Ala
 115 120 125
 Glu Met Arg Ala Val Ala Ser Thr Leu Gly Tyr Arg Gly Gly Tyr Asp
 130 135 140
 Arg Arg Tyr Arg Tyr Leu Ser Pro Glu Glu Val Ala Ser Arg Glu Ala
 145 150 155 160
 Ala Gly Gln Pro Tyr Thr Ile Arg Leu Lys Val Pro Leu Ser Gly Glu
 165 170 175
 Cys Val Phe Glu Asp Tyr Ser Lys Gly Arg Val Val Phe Pro Trp Ala
 180 185 190
 Asp Val Asp Asp Gln Val Leu Val Lys Ser Asp Gly Phe Pro Thr Tyr
 195 200 205
 His Phe Ala Asn Val Ile Asp Asp His Leu Met Gly Ile Thr His Val
 210 215 220
 Leu Arg Gly Glu Glu Trp Leu Ser Ser Thr Pro Lys His Leu Leu Leu
 225 230 235 240
 Tyr Glu Ala Phe Gly Trp Glu Pro Pro Val Phe Leu His Met Pro Leu
 245 250 255
 Leu Leu Asn Pro Asp Gly Thr Lys Leu Ser Lys Arg Lys Asn Pro Thr
 260 265 270
 Ser Ile Phe Tyr Tyr Arg Asp Ser Gly Tyr Val Lys Glu Ala Phe Val
 275 280 285
 Asn Phe Leu Thr Leu Met Gly Tyr Ser Met Glu Gly Asp Glu Glu Val
 290 295 300
 Tyr Ser Leu Glu Arg Ile Ile Glu Thr Phe Asn Pro Arg Arg Ile Gly
 305 310 315 320
 Lys Ser Gly Ala Val Phe Asp Ile Gln Lys Leu Asp Trp Met Asn Lys
 325 330 335
 His Tyr Leu Asn His Glu Gly Ser Pro Glu Cys Leu Leu Lys Glu Leu
 340 345 350
 Gln Gly Trp Leu Leu Asn Asp Glu Phe Phe Leu Lys Ile Leu Pro Leu
 355 360 365

Cys Gln Ser Arg Ile Thr Thr Leu Ala Glu Phe Ile Asn Leu Thr Ser
 370 375 380
 Phe Phe Phe Ser Gly Leu Leu Glu Tyr Arg Val Glu Glu Leu Leu Pro
 385 390 395 400
 Gln Ala Leu Ser Pro Glu Lys Ala Ala Ile Leu Leu Tyr Ser Tyr Val
 405 410 415
 Lys Tyr Leu Glu Lys Thr Asp Gln Trp Thr Lys Glu Thr Cys Tyr Leu
 420 425 430
 Gly Ser Lys Trp Leu Ala Gln Ala Phe Asn Val His His Lys Lys Ala
 435 440 445
 Ile Ile Pro Leu Leu Tyr Val Ala Ile Thr Gly Lys Lys Gln Gly Leu
 450 455 460
 Pro Leu Phe Asp Ser Ile Glu Ile Leu Gly Lys Pro Arg Ala Arg Ala
 465 470 475 480
 Arg Leu Val Tyr Ala Glu Lys Leu Leu Gly Gly Val Pro Lys Lys Leu
 485 490 495
 Ala Ala Thr Val Asp Lys Phe Met Gln Arg Glu Asp Phe Glu Glu Ala
 500 505 510
 Thr Phe Asp Leu
 515

<210>599

<211>181

<212>PRT

<213>Chlamydia pneumoniae

<400>599

Met Ala Cys Glu Gln His Glu Gly Cys Tyr Glu Leu Glu Glu Arg Glu
 1 5 10 15
 Glu Arg Glu Glu Ile Glu Asp Ile Lys Asp Ser Asp Thr Lys Trp Val
 20 25 30
 Ser Ile Thr Gln Ala Ala Lys Leu His Asn Val Thr Arg Gln Ala Ile
 35 40 45
 Tyr Val Ala Ile Lys Gln Lys Lys Leu Lys Ala Ser Lys Glu Thr Arg
 50 55 60
 Trp Glu Ile Asp Ile Lys Asp Leu Glu Glu Tyr Lys Arg Asn Arg Tyr
 65 70 75 80
 Ser Arg Lys Lys Ser Leu Tyr Gln Gly Glu Leu Val Phe Asp Asn Gly
 85 90 95
 Lys Gly Cys Tyr Ser Ile Asn Gln Val Ala Gln Ile Leu Gly Ile Pro
 100 105 110
 Val Gln Lys Val Tyr Tyr Ala Thr Arg Thr Gly Thr Ile Arg Gly Glu
 115 120 125
 Arg Lys Gly Ala Ala Trp Val Ile His Val Ser Glu Ile Glu Arg Tyr
 130 135 140
 Lys Asn Glu Tyr Leu Ser Lys Gln Ala Ala Lys Lys Leu Lys Gly Ala
 145 150 155 160
 Glu Pro Lys Glu His Gln Ala Pro Asn Phe Glu Pro Pro Thr Glu Ile
 165 170 175
 Phe Pro Glu Ser Asn
 180

<210>600

<211>373

<212>PRT

<213>Chlamydia pneumoniae

<400>600

Met Ser Ile Ala Ile Ala Arg Glu Gln His Ala Ala Ile Leu Asp Met
 1 5 10 15
 His Pro Lys Pro Ser Ile Ala Met Phe Ser Ser Glu Gln Ala Arg Thr
 20 25 30
 Ser Trp Glu Lys Arg Gln Ala His Pro Tyr Leu Tyr Arg Leu Leu Glu
 35 40 45
 Ile Ile Trp Gly Val Val Lys Phe Leu Leu Gly Leu Ile Phe Phe Ile
 50 55 60
 Pro Leu Gly Leu Phe Trp Val Leu Gln Lys Ile Cys Gln Asn Phe Ile
 65 70 75 80

<400>601

751

165 170 175
 Lys Glu Val Ser Asp Ile Thr Arg Gln Gly Ile Asp Val Ile Thr
 180 185 190
 Asp His His Met Pro Thr Gly Lys Ile Pro His Cys Val Val Thr Leu
 195 200 205
 Asn Pro Lys Leu Arg Asp His Thr Tyr Pro Asn Arg Glu Leu Thr Gly
 210 215 220
 Val Gly Val Ala Phe Lys Leu Ala Arg Gly Val Leu Asn Ala Leu Ile
 225 230 235 240
 Ser Arg Asn Leu Val Pro Lys Ser Gln Gly Ser Leu Lys Lys Leu Leu
 245 250 255
 Asp Leu Val Thr Leu Gly Thr Ile Thr Asp Val Gly Val Leu Leu Gly
 260 265 270
 Glu Asn Arg Val Met Val Arg Tyr Gly Ile Lys Glu Ile Ala Arg Gly
 275 280 285
 Ala Arg Pro Gly Leu Asn Lys Leu Cys Ala Leu Cys Gly Val Glu Lys
 290 295 300
 Ser Glu Val Thr Ser Thr Asp Ile Val Leu Lys Ile Ala Pro Lys Leu
 305 310 315 320
 Asn Ser Leu Gly Arg Leu Asp Asp Pro Ala Lys Gly Val Glu Leu Leu
 325 330 335
 Leu Thr Gln Asp Asp Glu Arg Val Asp Ala Leu Ile Met Glu Leu Asp
 340 345 350
 Asn Ile Asn Arg Glu Arg Gln Arg Ile Glu Ala Glu Val Phe Gln Asp
 355 360 365
 Val Gln Glu Ile Leu Asn Ser Asn Pro Glu Ile Leu Lys Gln Ala Ala
 370 375 380
 Ile Val Leu Ser Ser Thr Ala Trp His Ala Arg Val Ile Pro Ile Ile
 385 390 395 400
 Ser Ala Arg Leu Ala Lys Thr Tyr Asn Lys Pro Val Val Ile Ile Ala
 405 410 415
 Ile Gln Arg Gly Ile Gly Lys Gly Ser Ala Arg Thr Ile Gly Ser Phe
 420 425 430
 Pro Leu Leu Gly Val Leu Lys Lys Cys Ser Ser Leu Leu Leu Ser Tyr
 435 440 445
 Gly Gly His Asp Phe Ala Ala Gly Val Ile Met Lys Glu Asp Lys Val
 450 455 460
 Glu Asp Phe Lys Lys Lys Phe Val His Leu Val Asn Ser Ser Leu Lys
 465 470 475 480
 Lys Gly Asp Thr Leu Pro His Leu Glu Ile Asp Ala Tyr Ala Asp Phe
 485 490 495
 Asp Ala Ile Asp Tyr Asp Leu Leu Ala Ser Met Glu Leu Phe Glu Pro
 500 505 510
 Phe Gly Lys Gly Asn Leu Met Pro Ile Phe Tyr Ser Lys Val Arg Gln
 515 520 525
 Val Arg Tyr Pro Lys Val Leu Pro Gly Asn His Leu Lys Leu Tyr Leu
 530 535 540
 Ser Gln Lys Glu Arg Asn Leu Glu Gly Val Ala Ser Val Trp Glu Asp
 545 550 555 560
 Thr Leu Met His

<210>602

<211>997

<212>PRT

<213>Chlamydia pneumoniae

<400>602

Arg Lys Arg Ser Phe Gly Cys Tyr Ile Phe Ser Pro Asn Thr Asp Cys
 1 5 10 15
 Lys His Phe Ser Lys Gly Ser Val Tyr Ile Leu Leu Lys Gly Leu Arg
 20 25 30
 Ser Ile Val Ala Lys Tyr Gln Gln Gly Gly Lys Glu Leu Gln Ser
 35 40 45
 Phe Glu Lys Asp Leu Gln Asn Leu Tyr Asn Cys Phe Ser His Thr Glu
 50 55 60

Ala Ile Ser Trp Thr Leu Gly Glu Asp Gln Val Leu Glu Ile Arg His
 65 70 75 80
 Pro Leu Gln Gln Phe Leu Asp Val Trp Gly Glu Gly Phe Val Ile Gly
 85 90 95
 Lys Glu Gly Cys Ala Phe Leu Glu Val Lys Asp Ile Gln Asp Arg Leu
 100 105 110
 Ala Thr Val Asn Gln Ile Glu Lys Asn Arg Gln Ser Asp Leu Val Arg
 115 120 125
 Trp His Glu Gln Tyr Arg His Ala Lys Cys Ser Met Asp Leu Gln Glu
 130 135 140
 Arg Leu Ser Ala Pro Ile Pro Tyr Gln Asn Leu Phe Leu Glu Asn Met
 145 150 155 160
 Lys Leu Asn Met Arg Lys Phe Ser Arg Gly Glu Asn Ile Leu Arg Leu
 165 170 175
 Gly Ile Asp Phe Val Gly Gly Arg Gln Leu Leu Leu Ser Phe Lys Asp
 180 185 190
 His Gln Gly Lys Gln Leu Thr Asp Lys Glu Asp Ile Leu Lys Val Ser
 195 200 205
 Asp Glu Leu Cys Ala Arg Leu Asn Lys Leu Gly Val Ser Glu Ile Glu
 210 215 220
 Leu Arg Arg Glu Gly Asp Tyr Ile His Leu Ser Val Pro Gly Ser Ser
 225 230 235 240
 Thr Ile Ser Ser Ser Glu Ile Leu Gly Thr Ser Lys Met Ser Phe His
 245 250 255
 Val Val Asn Glu Arg Phe Ser Ser Tyr Ser Ala Ser Arg Tyr Glu Val
 260 265 270
 Gln Arg Phe Leu Asp Tyr Leu Trp Phe Thr Ser Gln Ala Gln Gly Lys
 275 280 285
 Thr Ser Pro Glu Glu Ile Asn Thr Phe Ala Ser Ala Leu Phe Asn Glu
 290 295 300
 Glu Val Asp Val Pro Pro Ser Val His Glu Ala Ile Thr Lys Leu Lys
 305 310 315 320
 Ser Glu Gly Leu Ala Phe Ser Pro Ser Gly Cys Glu Thr Pro Ser Thr
 325 330 335
 Asp Leu Asp Thr Thr Phe Ser Met Ile Ala Ile Gly Lys Asp Ala Glu
 340 345 350
 Gln Lys Ala Asn Pro Leu Val Ile Val Phe Arg Asn Tyr Ala Leu Asp
 355 360 365
 Gly Ala Ser Leu Lys Asp Ile Arg Pro Glu Phe Ala Ala Gly Glu Gly
 370 375 380
 Tyr Val Leu Asn Phe Ser Val Lys Asp Thr Ser Pro Lys Lys Met Ala
 385 390 395 400
 Glu Lys Leu Ser Pro Thr Glu Ser Phe His Thr Trp Thr Ser Ala Tyr
 405 410 415
 Cys Gln Glu Gly Ile Ser Gly Thr Ala Asn Gly Gln Tyr Ser Ala Asn
 420 425 430
 Arg Gly Trp Arg Met Ala Val Val Ile Asp Gly Tyr Met Val Ser Ser
 435 440 445
 Pro Ile Leu Asn Val Pro Leu Lys Asn His Ala Ser Val Ser Gly Lys
 450 455 460
 Phe Thr His Arg Glu Val Ser Lys Leu Ala Ser Asp Leu Lys Ser Gly
 465 470 475 480
 Ala Met Ser Phe Val Pro Glu Val Leu Ser Glu Glu Thr Ile Ser Ser
 485 490 495
 Asp Leu Gly Lys Lys Gln Cys Thr Gln Gly Ile Ile Ser Ala Cys Cys
 500 505 510
 Gly Leu Ala Met Leu Ile Val Leu Met Ser Val Tyr Tyr Arg Phe Gly
 515 520 525
 Gly Val Ile Ala Ser Gly Ala Val Leu Leu Asn Leu Leu Ile Trp
 530 535 540
 Ala Ala Leu Gln Tyr Leu Asp Ala Pro Leu Thr Leu Ser Gly Leu Ala
 545 550 555 560
 Gly Ile Val Leu Ala Met Gly Met Ala Val Asp Ala Asn Val Leu Val
 565 570 575

Phe Glu Arg Ile Arg Glu Glu Phe Leu Leu Ser Gln Ser Leu Lys Lys
 580 585 590
 Ser Val Glu Lys Gly Tyr Thr Lys Ala Phe Gly Ala Ile Phe Asp Ser
 595 600 605
 Asn Leu Thr Thr Val Leu Ala Ser Ala Leu Leu Phe Phe Leu Asp Thr
 610 615 620
 Gly Pro Ile Lys Gly Phe Ala Leu Thr Leu Ile Leu Gly Ile Phe Ser
 625 630 635 640
 Ser Met Phe Thr Ala Leu Phe Met Thr Lys Phe Phe Phe Met Leu Trp
 645 650 655
 Met Asn Lys Thr Gln His Thr Gln Leu His Met Met Asn Lys Phe Val
 660 665 670
 Gly Ile Lys His Asp Phe Leu Arg Gly Cys Lys Lys Leu Trp Ala Val
 675 680 685
 Ser Gly Ser Val Phe Leu Leu Gly Cys Val Ala Leu Gly Phe Gly Ala
 690 695 700
 Trp Asn Ser Val Leu Gly Met Asp Phe Lys Gly Gly Tyr Ala Phe Thr
 705 710 715 720
 Phe Asn Pro Lys Glu His Gly Ile Ser Asp Val Ala Gln Met Arg Gly
 725 730 735
 Lys Val Val His Lys Leu Gln Glu Ala Gly Leu Ser Ser Arg Asp Phe
 740 745 750
 Arg Ile Gln Thr Phe Gly Ser Ser Glu Lys Ile Lys Ile Tyr Phe Ser
 755 760 765
 Asp Lys Ala Leu Ser Tyr Thr Lys Ala Asp Thr Ser Leu Ser Pro Lys
 770 775 780
 Ile Asn Asp His Glu Leu Ala Leu Ala Val Gly Leu Leu Ser Glu Thr
 785 790 795 800
 Gly Leu Asp Phe Ser Thr Glu Thr Leu Asn Glu Thr Gln Asn Phe Trp
 805 810 815
 Ser Lys Val Ser Ser Lys Leu Ser Lys Lys Met Arg Tyr Gln Ala Thr
 820 825 830
 Ile Gly Leu Leu Gly Ala Leu Ala Ile Ile Leu Leu Tyr Val Ser Leu
 835 840 845
 Arg Phe Glu Trp Gln Tyr Ala Phe Ser Ala Val Cys Ala Leu Ile His
 850 855 860
 Asp Leu Leu Ala Thr Cys Ala Val Leu Phe Ile Ala His Phe Phe Leu
 865 870 875 880
 Lys Lys Ile Gln Ile Asp Leu Gln Ala Ile Gly Ala Leu Met Thr Val
 885 890 895
 Leu Gly Tyr Ser Leu Asn Asn Thr Leu Ile Ile Phe Asp Arg Ile Arg
 900 905 910
 Glu Asp Arg Gln Ala Asn Leu Phe Thr Pro Met His Val Leu Val Asn
 915 920 925
 Asp Ala Leu Gln Lys Thr Phe Ser Arg Thr Val Met Thr Thr Ala Thr
 930 935 940
 Thr Leu Ser Val Leu Leu Met Leu Leu Phe Ile Gly Gly Ser Ser Val
 945 950 955 960
 Phe Asn Phe Ala Phe Ile Met Thr Ile Gly Ile Leu Leu Gly Thr Leu
 965 970 975
 Ser Ser Leu Tyr Ile Ala Pro Pro Leu Leu Leu Phe Met Val Arg Lys
 980 985 990
 Glu Asn Arg Ser Lys
 995

<210>603

<211>435

<212>PRT

<213>Chlamydia pneumoniae

<400>603

Ser Gly Ala Met Lys Gln Lys Val Lys Arg Asn Phe Ala Ile Ile Ile
 1 5 10 15

Cys Val Phe Ala Leu Ala Leu Tyr Tyr Val Leu Pro Thr Cys Leu Tyr
 20 25 30

Tyr Ala Lys Pro Leu Asp Lys Lys Ile Asp Gly Asn Glu Ala Glu His

35 40 45
 Ile Ile Lys Ser Phe Thr Lys Gln Ala Gln Gln Val Arg Lys Asp Val
 50 55 60
 Ile Pro Arg Val Ser Ala Ile Leu Ser Ser Leu His Leu Arg Gly His
 65 70 75 80
 Ile Gln Gln His Pro Ala Ile Pro Asp Ile Val Ser Val Arg Phe Lys
 85 90 95
 Arg Gly Glu Asp Ala Glu Asp Phe Ile Gly Asn Leu Val His Gly Glu
 100 105 110
 Pro Asn Val Pro Ile Lys Ser Ala Arg Leu His Val Val Gly Tyr Ser
 115 120 125
 Arg Glu His Asp Asp His Val Ile Gln Val Ala Ser Ser Ile Asn Thr
 130 135 140
 Ser Leu Val Glu Ser Asp Phe Ser Phe Val Ser Tyr Ser Ser Glu Asn
 145 150 155 160
 Glu Gln Glu Met Ala Ser Ser Ile Leu Gln Arg Val Tyr Ser Ala Cys
 165 170 175
 Thr Cys Pro Lys Gln Lys Asp Cys Ser Cys Ser Tyr Pro Ser Ile Trp
 180 185 190
 Glu Thr Ala Pro Lys Glu Gln Leu Leu Gln Tyr Ala Lys Asn Leu Ser
 195 200 205
 Ser Gly Phe Glu Val Phe Ser Ser Arg Leu Ser Ala Phe Cys Gln Gln
 210 215 220
 Ser Phe Ser Ser Asn Gln Asp Arg Leu Ala Phe Leu Ser Arg Leu Ser
 225 230 235 240
 Ser Leu Ser Asn Asp Ala Ala Ile Asp Val Glu Asp Gln Lys Leu Leu
 245 250 255
 Lys Ser Val Tyr Glu Thr Leu Ser Gln Thr Ala Cys Ile Arg Ser Leu
 260 265 270
 Asp Cys Pro Tyr Ile Glu Gly Leu Arg Leu Asp Cys Ser Glu Ser Ser
 275 280 285
 Leu Phe Phe Ser Ser Ile Glu Tyr Cys Pro Lys Glu Arg Lys Ile Phe
 290 295 300
 Leu Thr Leu His Ser Asp Leu Leu Ala Gln Arg Thr Ser Leu Ser Lys
 305 310 315 320
 Glu Gln Arg Leu Asp Phe Asp Ser Arg Leu Ala Val Glu Lys Gln Lys
 325 330 335
 Leu Ser Lys Asn Leu Thr Val Gln Val Glu Asp Tyr Asn Asn Gly Phe
 340 345 350
 Ser Phe Gln Trp Met Asp Lys Asp Thr Gln Gly Lys Ile Ile Leu Gln
 355 360 365
 Gly Glu Arg Leu Leu Gln Gly Ile Ala Glu His Leu Thr Ala Leu Thr
 370 375 380
 Leu His Arg Pro Ala Ala Glu Ser Cys Asp Leu Ile Pro Glu Asn Phe
 385 390 395 400
 Pro Val Phe Cys Arg Gln Pro Arg Glu Ser Glu Val Leu Ala Val Thr
 405 410 415
 Ser Phe Leu Pro Ile Gln Ile Ala Asn Thr Phe Leu Lys Ala Pro Phe
 420 425 430
 Thr Ser Tyr
 435

<210>604

<211>367

<212>PRT

<213>Chlamydia pneumoniae

<400>604

Tyr Glu Ile Ser Ser His Ile His Phe Arg Phe Asp Ser His Ser Asn
 1 5 10 15
 Gly His Leu Val Ala Ala Glu Xaa Gly Asn Val His Tyr Val Pro Asn
 20 25 30
 Ala Gln Asn Leu Pro Lys Lys Ile Leu Gly Gly Val Leu Ala Cys Phe
 35 40 45
 Gly Leu Ala Leu Leu Gly Cys Ala Ala Phe Ala Ala Gly Val Cys Gln
 50 55 60

Thr Ile Phe Pro Cys Ile Gly Leu Met Ile Leu Gly Leu Val Leu Leu
 65 70 75 80
 Gly Phe Ala Tyr Leu Gln Tyr Ser Lys Gly Trp Ser Arg Phe Glu Arg
 85 90 95
 Pro Leu Phe Arg Glu Thr Lys Val Phe Glu Lys Pro Ile Asn Trp Leu
 100 105 110
 Gly Cys Leu Ser Leu Leu Gln Ser Trp Lys Lys Ile Arg Pro Gly Cys
 115 120 125
 Tyr Tyr His Pro Gly Cys Pro Gln Val Glu Ile Cys Glu Gly Ser Gln
 130 135 140
 Glu Ile Val Thr Lys Ile Phe Gln Lys Lys Ser Asp Arg Asn Thr Ser
 145 150 155 160
 Ile Phe Leu Ile Gln Glu Met Asp Gln Ile Ala Leu Arg Gln Gly Ile
 165 170 175
 Glu Lys Ser Ser Leu Ser Arg Lys Thr Phe Ala Ile Asp Pro Ser Val
 180 185 190
 Val Ser Ser Leu Leu Ser Glu Ile Gln Arg Glu Glu Gln Tyr Leu
 195 200 205
 Asp Pro Lys Val Ile Ser Trp Ser Ser Glu Asp Gln Ala Ser Asp Arg
 210 215 220
 Thr His Pro Lys Ser Ala Ile Tyr Val Asn Ile Ser Asp Ala Ala Gln
 225 230 235 240
 Glu Pro Gln Gly Arg Cys Tyr Ile Asp Ala Tyr Thr Lys Ala Phe Phe
 245 250 255
 Thr Val Leu Asp Gln Ile Gly Asp Pro Asn Ile Val Lys Lys His Thr
 260 265 270
 Ile Tyr Val Leu Thr Pro Ile Leu Gly Val Pro Asp Ala Leu Pro Lys
 275 280 285
 Glu Glu Gln Glu Asn Leu Lys Leu Leu Ser Gln Ala Ala Phe Leu Tyr
 290 295 300
 Ser Ala Glu Gln Val Ala Lys Arg Met Arg Glu Glu Lys Gln Asp Ser
 305 310 315 320
 Ile Arg Ile Lys Phe Ile Phe Thr Asp Pro Thr Ser Pro Thr Ser Leu
 325 330 335
 Tyr Phe Ser Pro His His Ser Ser Thr Pro His Ser Val Thr Pro Ile
 340 345 350
 Ser Leu Ser Gly Phe Val Gly Glu Gln Glu Ser Tyr Thr Phe Ala
 355 360 365

<210>605

<211>261

<212>PRT

<213>Chlamydia pneumoniae

<400>605

Val Thr Tyr Ala Leu Ile Asn Asp Pro Val Asp Leu Ser Leu Ala Thr
 1 5 10 15
 Asn Asn Ala Glu Ser Lys Phe Pro Ser Leu Gln Arg Leu Pro Asn His
 20 25 30
 Val Ala Ile Met Asp Gly Asn Arg Arg Trp Tyr Lys Lys His Arg
 35 40 45
 Glu Glu Cys Gly His Thr His Thr Ser Gly His Tyr Tyr Gly Ala Lys
 50 55 60
 Val Leu Pro Asn Ile Leu Asn Ala Val Leu Asp Leu Gly Ile Lys Val
 65 70 75 80
 Leu Thr Leu Tyr Thr Phe Ser Thr Glu Asn Phe Gly Arg Pro Lys Glu
 85 90 95
 Glu Ile Gln Glu Ile Phe Asn Ile Phe Tyr Thr Gln Leu Asp Lys Gln
 100 105 110
 Leu Pro Tyr Leu Met Glu Asn Glu Ile Cys Leu Arg Cys Ile Gly Asp
 115 120 125
 Leu Ser Lys Leu Pro Lys Gly Ile Gln Thr Lys Ile Asn His Val Ser
 130 135 140
 Arg Met Thr Ala Ser Phe Ser Arg Leu Glu Leu Val Leu Ala Val Asn
 145 150 155 160
 Tyr Gly Gly Lys Asp Glu Leu Val Arg Ala Phe Lys Lys Leu His Val

165 170 175
 Asp Ile Leu Asn Lys Lys Ile Ser Ser Asp Asp Leu Ser Glu Ser Leu
 180 185 190
 Ile Ser Ser Tyr Leu Asp Thr Ser Gly Leu Thr Asp Pro Asp Leu Leu
 195 200 205
 Ile Arg Thr Gly Gly Glu Met Arg Val Ser Asn Phe Leu Leu Trp Gln
 210 215 220
 Ile Ala Tyr Thr Glu Leu Tyr Ile Thr Asp Thr Leu Trp Pro Asp Phe
 225 230 235 240
 Thr Pro Gln Asp Leu Phe Glu Ala Ile Asn Val Tyr Gln Gln Arg Ser
 245 250 255
 Arg Arg Gly Gly Lys
 260

<210>606

<211>308

<212>PRT

<213>Chlamydia pneumoniae

<400>606

Val Leu Asn Ser Asn Lys Phe Lys Ser Lys Thr Gly Ala Tyr Gly Asp
 1 5 10 15
 Leu Phe Gln Arg Val Val Val His Ser Leu Val Leu Thr Phe Leu Val
 20 25 30
 Leu Leu Leu Tyr Ser Ser Leu Phe Pro Leu Thr Ser Phe Ala Leu Gly
 35 40 45
 Phe Ile Thr Ala Thr Cys Gly Ala Val Gly Thr Tyr Glu Tyr Ser Ser
 50 55 60
 Met Ala Lys Ala Lys Met His Tyr Pro Leu Ser Thr Phe Ser Ala Ile
 65 70 75 80
 Gly Ser Phe Leu Phe Leu Ala Leu Ser Phe Leu Ser Ile Arg Trp Gly
 85 90 95
 His Ser Leu Pro Gly Phe Phe Asp Ala Leu Pro Trp Thr Leu Leu Ile
 100 105 110
 Val Trp Val Val Trp Ser Ile Phe Arg Val Arg Lys Ser Thr Ile Gly
 115 120 125
 Ala Leu Gln Leu Ser Gly Val Thr Leu Phe Ser Ile Leu Tyr Val Gly
 130 135 140
 Ile Pro Ile Arg Leu Phe Leu His Val Leu Tyr Ser Phe Ile His Thr
 145 150 155 160
 Gln Glu Pro Tyr Leu Gly Ile Trp Trp Ala Ser Phe Leu Ile Ala Thr
 165 170 175
 Thr Lys Gly Ala Asp Ile Phe Gly Tyr Phe Phe Gly Lys Ala Phe Gly
 180 185 190
 Asn Lys Lys Ile Ala Pro Gln Ile Ser Pro Asn Lys Thr Val Val Gly
 195 200 205
 Phe Val Ala Gly Cys Leu Gly Ala Thr Leu Ile Ser Phe Ile Phe Phe
 210 215 220
 Leu Gln Ile Pro Thr Arg Phe Ala Ser Tyr Phe Pro Met Pro Ala Ile
 225 230 235 240
 Leu Ile Pro Leu Gly Leu Ala Leu Gly Ile Thr Gly Phe Phe Gly Asp
 245 250 255
 Ile Ile Glu Ser Ile Phe Lys Arg Asp Ala His Leu Lys Asn Ser Asn
 260 265 270
 Lys Leu Lys Ala Val Gly Gly Met Leu Asp Thr Leu Asp Ser Leu Leu
 275 280 285
 Leu Ser Thr Pro Ile Ala Tyr Leu Phe Leu Leu Ile Thr Gln Ser Lys
 290 295 300
 Glu Phe Ile Gly
 305

<210>607

<211>220

<212>PRT

<213>Chlamydia pneumoniae

<400>607

Arg Val Tyr Trp Met Ile Ile Thr Ile Asp Gly Pro Ser Gly Thr Gly

1 5 10 15
 Lys Ser Thr Thr Ala Lys Ala Leu Ala Asp His Leu His Phe Asn Tyr
 20 25 30
 Cys Asn Thr Gly Lys Met Tyr Arg Thr Leu Ala Tyr Ala Arg Leu Gln
 35 40 45
 Ser Pro Trp Ala Thr Leu Pro Leu Thr Lys Phe Leu Glu Glu Pro Pro
 50 55 60
 Phe Ser Phe Thr Phe Ala Thr Gly Gln Pro Leu Glu Ser Phe Phe Asn
 65 70 75 80
 Gly His Leu Leu Thr Ser Glu Leu Thr Thr Gln Glu Val Ala Asn Ala
 85 90 95
 Ala Ser Glu Leu Ser Gln Leu Pro Glu Val Arg Ala Phe Met Gln Asp
 100 105 110
 Leu Gln Arg Arg Tyr Ala Gln Leu Gly Asn Cys Val Phe Glu Gly Arg
 115 120 125
 Asp Met Gly Ser Lys Val Phe Pro Asn Ala Asp Leu Lys Ile Phe Leu
 130 135 140
 Thr Ser Ser Pro Glu Val Arg Ala Gln Arg Arg Leu Lys Asp Leu Pro
 145 150 155 160
 Glu Gly Thr Leu Ser Pro Glu Gln Leu Gln Ala Glu Leu Val Lys Arg
 165 170 175
 Asp Ala Ala Asp Ala Gln Arg Ala His Asp Pro Leu Val Ile Pro Glu
 180 185 190
 Asn Gly Ile Val Ile Asp Ser Ser Asp Leu Thr Ile Arg Gln Val Leu
 195 200 205
 Glu Lys Ile Leu Ala Leu Leu Phe Arg Asn Glu Leu
 210 215 220

<210>608

<211>234

<212>PRT

<213>Chlamydia pneumoniae

<400>608

Leu Phe Gly Phe Asp Asn Lys Thr Ser Ser Gly Glu Asn Phe Ser Phe
 1 5 10 15
 Thr Ile Ser Lys Arg Ala Met Ile Phe Arg Ile Cys Lys Phe Phe Thr
 20 25 30
 Trp Val Ala Phe Ser Leu Phe Tyr Lys Leu Lys Val Tyr Gly Val Lys
 35 40 45
 Lys Asn Phe Ile Lys Gly Pro Ala Ile Ile Ala Val Asn His Asn Ser
 50 55 60
 Phe Leu Asp Pro Ile Ala Leu His Met Cys Val His Glu Cys Ile Tyr
 65 70 75 80
 His Leu Ala Arg Ala Ser Leu Phe Asn Ile Pro Trp Leu Trp Lys Gln
 85 90 95
 Trp Gly Cys Phe Pro Val Arg Gln Asp Glu Gly Asn Ser Ala Ala Phe
 100 105 110
 Lys Ile Ala Ser Arg Leu Phe Asn Lys Arg Lys Lys Leu Val Ile Tyr
 115 120 125
 Pro Glu Gly Ala Arg Ser Pro Asp Gly Gln Leu Gln Pro Gly Lys Val
 130 135 140
 Gly Ile Gly Met Met Ala Ala Lys Ser Arg Val Pro Ile Ile Pro Val
 145 150 155 160
 Tyr Ile Arg Gly Thr Phe Glu Ala Phe Asn Arg His Gln Lys Ile Pro
 165 170 175
 His Val Trp Lys Thr Ile Thr Cys Val Phe Gly Thr Pro Met Tyr Phe
 180 185 190
 Asp Asp Ile Ile Gln Asn Pro Glu Ile Lys Asn Lys Glu Thr Tyr Gln
 195 200 205
 Ile Ile Thr Asn Gln Thr Met Asn Lys Ile Ala Glu Leu Lys Ala Trp
 210 215 220
 Tyr Glu Ser Gly Cys Lys Gly Asp Val Pro
 225 230

<210>609

<211>580

<212>PRT

<213>Chlamydia pneumoniae

<400>609

Leu Pro Ser Ser Lys His Gly Met Asn Arg Gly Ala Lys Glu Thr Ser
 1 5 10 15
 Pro Lys Leu Met Ser Thr Leu Leu Ser Ile Leu Ser Val Ile Cys Ser
 20 25 30
 Gln Ala Ile Ala Lys Ala Phe Pro Asn Leu Glu Asp Trp Ala Pro Glu
 35 40 45
 Ile Thr Pro Ser Thr Lys Glu His Phe Gly His Tyr Gln Cys Asn Asp
 50 55 60
 Ala Met Lys Leu Ala Arg Val Leu Lys Lys Ala Pro Arg Ala Ile Ala
 65 70 75 80
 Glu Ala Ile Val Ala Glu Leu Pro Gln Glu Pro Phe Ser Leu Ile Glu
 85 90 95
 Ile Ala Gly Ala Gly Phe Ile Asn Phe Thr Phe Ser Pro Val Phe Leu
 100 105 110
 Asn Gln Gln Leu Glu His Phe Lys Asp Ala Leu Lys Leu Gly Phe Gln
 115 120 125
 Val Ser Gln Pro Lys Xaa Ile Ile Ile Asp Phe Ser Ser Pro Asn Ile
 130 135 140
 Ala Lys Asp Met His Val Gly His Leu Arg Ser Thr Ile Ile Gly Asp
 145 150 155 160
 Ser Leu Ala Arg Ile Phe Ser Tyr Val Gly His Asp Val Leu Arg Leu
 165 170 175
 Asn His Ile Gly Asp Trp Gly Thr Ala Phe Gly Met Leu Ile Thr Tyr
 180 185 190
 Leu Gln Glu Asn Pro Cys Asp Tyr Ser Asp Leu Glu Asp Leu Thr Ser
 195 200 205
 Leu Tyr Lys Lys Ala Tyr Val Cys Phe Thr Asn Asp Glu Glu Phe Lys
 210 215 220
 Lys Arg Ser Gln Gln Asn Val Val Ala Leu Gln Ala Lys Asp Pro Gln
 225 230 235 240
 Ala Ile Ala Ile Trp Glu Lys Ile Cys Glu Thr Ser Glu Lys Ala Phe
 245 250 255
 Gln Lys Ile Tyr Asp Ile Leu Asp Ile Val Val Glu Lys Arg Gly Glu
 260 265 270
 Ser Phe Tyr Asn Pro Phe Leu Pro Glu Ile Ile Glu Asp Leu Glu Lys
 275 280 285
 Lys Gly Leu Leu Thr Val Ser Asn Asp Ala Lys Cys Val Phe His Glu
 290 295 300
 Ala Phe Ser Ile Pro Phe Met Val Gln Lys Ser Asp Gly Gly Tyr Asn
 305 310 315 320
 Tyr Ala Thr Thr Asp Leu Ala Ala Met Arg Tyr Arg Ile Glu Glu Asp
 325 330 335
 His Ala Asp Lys Ile Ile Ile Val Thr Asp Leu Gly Gln Ser Leu His
 340 345 350
 Phe Gln Leu Leu Glu Ala Thr Ala Ile Ala Ala Gly Tyr Leu Gln Pro
 355 360 365
 Gly Ile Phe Ser His Val Gly Phe Gly Leu Val Leu Asp Pro Gln Gly
 370 375 380
 Lys Lys Leu Lys Thr Arg Ser Gly Glu Asn Val Lys Leu Arg Glu Leu
 385 390 395 400
 Leu Asp Thr Ala Ile Glu Lys Ala Glu Glu Ala Leu Arg Glu His Arg
 405 410 415
 Pro Glu Leu Thr Asp Glu Ala Ile Gln Glu Arg Ala Pro Val Ile Gly
 420 425 430
 Ile Asn Ala Ile Lys Tyr Ser Asp Leu Ser Ser His Arg Thr Ser Asp
 435 440 445
 Tyr Val Phe Ser Phe Glu Lys Met Leu Arg Phe Glu Gly Asn Thr Ala
 450 455 460
 Met Phe Leu Leu Tyr Ala Tyr Val Arg Ile Gln Gly Ile Lys Arg Arg
 465 470 475 480
 Leu Gly Ile Ser Gln Leu Ser Leu Glu Gly Pro Pro Glu Ile Gln Glu

Pro	Ala	Glu	Glu	Leu	Leu	Ala	Leu	Thr	Leu	Leu	Arg	Phe	Pro	Glu	Ala
			500					505					510		
Leu	Glu	Ser	Thr	Ile	Lys	Glu	Leu	Cys	Pro	His	Phe	Leu	Thr	Asp	Tyr
		515					520					525			
Leu	Tyr	Asn	Leu	Thr	His	Lys	Phe	Asn	Gly	Phe	Phe	Arg	Asp	Ser	His
	530					535					540				
Ile	Gln	Asp	Ser	Pro	Tyr	Ala	Lys	Ser	Arg	Leu	Phe	Leu	Cys	Ala	Leu
545					550					555				560	
Ala	Glu	Gln	Val	Leu	Ala	Thr	Gly	Met	His	Leu	Leu	Gly	Leu	Lys	Thr
			565					570						575	
Leu	Glu	Arg	Leu												
			580												

<210>610

<211>458

<212>PRT

<213>Chlamydia pneumoniae

<400>610

Met	Gln	Ile	Ala	Gln	Val	Phe	Gly	Cys	Gly	Arg	Leu	Asn	Gly	Glu	Val
1				5					10					15	
Lys	Val	Ser	Gly	Ala	Lys	Asn	Ala	Ala	Thr	Lys	Leu	Leu	Val	Ala	Ser
			20					25					30		
Leu	Leu	Ser	Asp	Gln	Lys	Cys	Thr	Leu	Arg	Asn	Val	Pro	Asp	Ile	Gly
		35					40					45			
Asp	Val	Ser	Leu	Thr	Val	Glu	Leu	Cys	Lys	Ser	Leu	Gly	Ala	His	Val
	50					55					60				
Ser	Trp	Asp	Lys	Glu	Thr	Glu	Val	Leu	Glu	Ile	Tyr	Thr	Pro	Glu	Ile
	65				70					75				80	
Gln	Cys	Thr	Arg	Val	Pro	Pro	Thr	Phe	Ser	Asn	Val	Asn	Arg	Ile	Pro
				85					90					95	
Ile	Leu	Leu	Leu	Gly	Ala	Leu	Leu	Gly	Arg	Cys	Pro	Glu	Gly	Val	Tyr
			100					105					110		
Val	Pro	Thr	Val	Gly	Gly	Asp	Ala	Ile	Gly	Glu	Arg	Thr	Leu	Asn	Phe
		115					120					125			
His	Phe	Glu	Gly	Leu	Lys	Gln	Leu	Gly	Val	Gln	Ile	Ser	Ser	Asp	Ser
	130					135					140				
Ser	Gly	Tyr	Tyr	Ala	Lys	Ala	Pro	Arg	Gly	Leu	Lys	Gly	Asn	Tyr	Ile
145					150					155				160	
His	Leu	Pro	Tyr	Pro	Ser	Val	Gly	Ala	Thr	Glu	Asn	Leu	Ile	Leu	Ala
				165					170					175	
Ala	Ile	His	Ala	Lys	Gly	Arg	Thr	Val	Ile	Lys	Asn	Val	Ala	Leu	Glu
		180						185					190		
Ala	Glu	Ile	Leu	Asp	Leu	Val	Leu	Phe	Leu	Gln	Lys	Ala	Gly	Ala	Asp
	195						200					205			
Ile	Thr	Thr	Asp	Asn	Asp	Arg	Thr	Ile	Asp	Ile	Phe	Gly	Thr	Gly	Gly
	210					215						220			
Leu	Gly	Ser	Val	Asp	His	Thr	Ile	Leu	Pro	Asp	Lys	Ile	Glu	Ala	Ala
225					230					235				240	
Ser	Phe	Gly	Met	Ala	Ala	Val	Val	Ser	Gly	Gly	Arg	Val	Phe	Val	Arg
				245					250					255	
Asn	Ala	Lys	Gln	Glu	Leu	Leu	Ile	Pro	Phe	Leu	Lys	Met	Leu	Arg	Ser
			260					265					270		
Ile	Gly	Gly	Gly	Phe	Leu	Val	Ser	Glu	Ser	Gly	Ile	Glu	Phe	Phe	Gln
		275					280					285			
Glu	Arg	Pro	Leu	Val	Gly	Gly	Val	Val	Leu	Glu	Thr	Asp	Val	His	Pro
	290					295						300			
Gly	Phe	Leu	Thr	Asp	Trp	Gln	Gln	Pro	Phe	Ala	Val	Leu	Leu	Ser	Gln
305					310					315				320	
Ala	Gln	Gly	Ser	Ser	Val	Ile	His	Glu	Thr	Val	His	Glu	Asn	Arg	Leu
				325					330					335	
Gly	Tyr	Leu	His	Gly	Leu	Gln	His	Met	Gly	Ala	Glu	Cys	Gln	Leu	Phe
		340						345					350		
His	Gln	Cys	Leu	Ser	Thr	Lys	Ala	Cys	Arg	Tyr	Ala	Ile	Gly	Asn	Phe
		355					360						365		

Pro His Ser Ala Val Ile His Gly Ala Thr Pro Leu Trp Ala Ser His
 370 375 380
 Leu Val Ile Pro Asp Leu Arg Ala Gly Phe Ala Tyr Val Met Ala Ala
 385 390 395 400
 Leu Ile Ala Glu Gly Gly Gly Ser Ile Ile Glu Asn Thr His Leu Leu
 405 410 415
 Asp Arg Gly Tyr Thr Asn Trp Val Gly Lys Leu Arg Ser Leu Gly Ala
 420 425 430
 Lys Ile Gln Ile Phe Asp Met Glu Gln Glu Glu Leu Thr Thr Ser Pro
 435 440 445
 Lys Ser Leu Ala Leu Arg Asp Ala Ser Leu
 450 455

<210>611

<211>96

<212>PRT

<213>Chlamydia pneumoniae

<400>611

His Asn Asp Met Pro Trp Tyr Leu Ser Thr Asp Glu Lys Ala Asp Thr
 1 5 10 15
 Gln Leu Pro Cys Ala Glu Asp His Glu Gly Ser Arg Gly Asp Phe His
 20 25 30
 Gly Gln Ser His Gly Leu Leu Lys Ile Pro Glu Pro Val Ile Val Glu
 35 40 45
 Leu Arg Arg Val Val Ala Ser Pro Ser Gly Thr Leu Asp Glu His Arg
 50 55 60
 Phe Pro Arg Gln His Leu Pro Pro Arg Gly Val Leu Glu Lys Ile Leu
 65 70 75 80
 Phe Pro Thr Arg Arg Pro Lys Ile Leu Arg Leu Trp Ser Ala Thr Ser
 85 90 95

<210>612

<211>183

<212>PRT

<213>Chlamydia pneumoniae

<400>612

Ile Met Ala Ala Pro Ile Asn Gln Pro Ser Thr Thr Thr Gln Ile Thr
 1 5 10 15
 Gln Thr Gly Gln Thr Thr Thr Thr Thr Thr Val Gly Ser Leu Gly Glu
 20 25 30
 His Ser Val Thr Thr Thr Gly Ser Gly Ala Ala Ala Gln Thr Ser Gln
 35 40 45
 Thr Val Thr Leu Ile Ala Asp His Glu Met Gln Asp Ile Ala Ser Gln
 50 55 60
 Asp Gly Ser Ala Val Ser Phe Ser Ala Glu His Ser Phe Ser Thr Leu
 65 70 75 80
 Pro Pro Glu Thr Gly Ser Val Gly Ala Thr Ala Gln Ser Ala Gln Ser
 85 90 95
 Ala Gly Leu Phe Ser Leu Ser Gly Arg Thr Gln Arg Arg Asp Ser Glu
 100 105 110
 Ile Ser Ser Ser Ser Asp Gly Ser Ser Ile Ser Arg Thr Ser Ser Asn
 115 120 125
 Ala Ser Ser Gly Glu Thr Ser Arg Ala Glu Ser Ser Pro Asp Leu Gly
 130 135 140
 Asp Leu Asp Ser Leu Ser Gly Ser Glu Arg Ala Glu Gly Ala Glu Asp
 145 150 155 160
 Leu Lys Asp Leu Glu Ala Tyr Leu Lys Val Arg Phe His Ile Met Ile
 165 170 175
 Leu Pro Ile Lys Arg Leu Phe
 180

<210>613

<211>550

<212>PRT

<213>Chlamydia pneumoniae

<400>613

Met Lys Pro Arg Ser Ser Phe Ile Phe Val Arg Asn Gly Asp Trp Ser

1				5					10					15			
Thr	Ala	Glu	Ser	Ile	Lys	Val	Ser	Asn	Ala	Lys	Thr	Lys	Glu	Asn	Ile		
			20					25					30				
Thr	Lys	Pro	Ala	Asp	Leu	Glu	Met	Cys	Ile	Ala	Lys	Phe	Cys	Val	Gly		
		35					40					45					
Tyr	Glu	Thr	Ile	His	Ser	Asp	Trp	Thr	Gly	Arg	Val	Lys	Pro	Thr	Met		
	50					55					60						
Glu	Glu	Arg	Ser	Gly	Ala	Thr	Gly	Asn	Tyr	Asn	His	Leu	Met	Leu	Ser		
	65				70					75					80		
Met	Lys	Phe	Lys	Thr	Ala	Val	Val	Tyr	Gly	Pro	Trp	Asn	Ala	Lys	Glu		
				85					90					95			
Ser	Ser	Ser	Gly	Tyr	Thr	Pro	Ser	Ala	Trp	Arg	Arg	Gly	Ala	Lys	Val		
			100					105					110				
Glu	Thr	Gly	Pro	Ile	Trp	Asp	Asp	Val	Gly	Gly	Leu	Lys	Gly	Ile	Asn		
		115					120					125					
Trp	Lys	Thr	Thr	Pro	Ala	Pro	Asp	Phe	Ser	Phe	Ile	Asn	Glu	Thr	Pro		
	130					135					140						
Gly	Gly	Gly	Ala	His	Ser	Thr	Ser	His	Thr	Gly	Pro	Gly	Thr	Pro	Val		
	145				150					155					160		
Gly	Ala	Thr	Val	Val	Pro	Asn	Val	Asn	Val	Asn	Leu	Gly	Gly	Ile	Lys		
			165					170						175			
Val	Asp	Leu	Gly	Gly	Ile	Asn	Leu	Gly	Gly	Ile	Thr	Thr	Asn	Val	Thr		
		180						185					190				
Thr	Glu	Glu	Gly	Gly	Gly	Thr	Asn	Ile	Thr	Ser	Thr	Lys	Ser	Thr	Ser		
	195						200					205					
Thr	Asp	Asp	Lys	Val	Ser	Ile	Thr	Ser	Thr	Gly	Ser	Gln	Ser	Thr	Ile		
	210					215					220						
Glu	Glu	Asp	Thr	Ile	Gln	Phe	Asp	Asp	Pro	Gly	Gln	Gly	Glu	Asp	Asp		
	225				230					235				240			
Asn	Ala	Ile	Pro	Gly	Thr	Asn	Thr	Pro	Pro	Pro	Pro	Gly	Pro	Pro	Pro		
			245						250					255			
Asn	Leu	Ser	Ser	Ser	Arg	Leu	Leu	Thr	Ile	Ser	Asn	Ala	Ser	Leu	Asn		
		260						265					270				
Gln	Val	Leu	Gln	Asn	Val	Arg	Gln	His	Leu	Asn	Thr	Ala	Tyr	Asp	Ser		
		275					280					285					
Asn	Gly	Asn	Ser	Val	Ser	Asp	Leu	Asn	Gln	Asp	Leu	Gly	Gln	Val	Val		
	290					295				300							
Lys	Asn	Ser	Glu	Asn	Gly	Val	Asn	Phe	Pro	Thr	Val	Ile	Leu	Pro	Lys		
	305				310					315				320			
Thr	Thr	Gly	Asp	Thr	Asp	Pro	Ser	Gly	Gln	Ala	Thr	Gly	Gly	Val	Thr		
			325					330					335				
Glu	Gly	Gly	Gly	His	Ile	Arg	Asn	Ile	Ile	Gln	Arg	Asn	Thr	Gln	Ser		
		340					345					350					
Thr	Gly	Gln	Ser	Glu	Gly	Ala	Thr	Pro	Thr	Pro	Gln	Pro	Thr	Ile	Ala		
	355						360				365						
Lys	Ile	Val	Thr	Ser	Leu	Arg	Lys	Ala	Asn	Val	Ser	Ser	Ser	Ser	Val		
	370					375				380							
Leu	Pro	Gln	Pro	Gln	Val	Ala	Thr	Thr	Ile	Thr	Pro	Gln	Ala	Arg	Thr		
	385				390					395				400			
Ala	Ser	Thr	Ser	Thr	Thr	Ser	Ile	Gly	Thr	Gly	Thr	Glu	Ser	Thr	Ser		
			405					410					415				
Thr	Thr	Ser	Thr	Gly	Thr	Gly	Thr	Gly	Ser	Val	Ser	Thr	Gln	Ser	Thr		
			420					425					430				
Gly	Val	Gly	Thr	Pro	Thr	Thr	Thr	Thr	Arg	Ser	Thr	Gly	Thr	Ser	Ala		
	435						440				445						
Thr	Thr	Thr	Thr	Ser	Ser	Ala	Ser	Thr	Gln	Thr	Pro	Gln	Ala	Pro	Leu		
	450					455					460						
Pro	Ser	Gly	Thr	Arg	His	Val	Ala	Thr	Ile	Ser	Leu	Val	Arg	Asn	Ala		
	465				470					475				480			
Ala	Gly	Arg	Ser	Ile	Val	Leu	Gln	Gln	Gly	Gly	Arg	Ser	Gln	Ser	Phe		
			485					490					495				
Pro	Ile	Pro	Pro	Ser	Gly	Thr	Gly	Thr	Gln	Asn	Met	Gly	Ala	Gln	Leu		
		500					505					510					
Trp	Ala	Ala	Ala	Ser	Gln	Val	Ala	Ser	Thr	Leu	Gly	Gln	Val	Val	Asn		

515 520 525
 Gln Ala Ala Thr Ala Gly Ser Gln Pro Ser Ser Arg Arg Ser Ser Pro
 530 535 540
 Thr Ser Pro Arg Arg Lys
 545 550
 <210>614
 <211>96
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>614
 Asp Arg Pro Pro Cys Cys Asn Thr Ile Asp Leu Pro Ala Ala Leu Arg
 1 5 10 15
 Thr Lys Glu Ile Val Ala Thr Cys Leu Val Pro Glu Gly Arg Gly Ala
 20 25 30
 Trp Gly Val Cys Val Glu Ala Asp Asp Val Val Val Val Ala Glu Val
 35 40 45
 Pro Val Asp Arg Val Val Val Val Gly Val Pro Thr Pro Val Leu Cys
 50 55 60
 Val Glu Thr Leu Pro Val Pro Val Pro Val Leu Val Val Asp Val Leu
 65 70 75 80
 Ser Val Pro Val Pro Met Leu Val Val Asp Val Leu Ala Val Leu Ala
 85 90 95
 <210>615
 <211>241
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>615
 Val Glu Asp Met Ala Gly His Ser Lys Trp Ala Asn Thr Lys His Arg
 1 5 10 15
 Lys Glu Arg Ala Asp His Lys Lys Gly Lys Ile Phe Ser Arg Ile Ile
 20 25 30
 Lys Glu Leu Ile Ser Ala Val Lys Leu Gly Gly Ala Asp Pro Lys Ser
 35 40 45
 Asn Ala Arg Leu Arg Met Val Ile Gln Lys Ala Lys Glu Asn Asn Ile
 50 55 60
 Pro Asn Glu Asn Ile Glu Arg Asn Leu Lys Lys Ala Thr Ser Ala Glu
 65 70 75 80
 Gln Lys Asn Phe Glu Glu Val Thr Tyr Glu Leu Tyr Gly His Gly Gly
 85 90 95
 Val Gly Ile Ile Val Glu Ala Met Thr Asp Asn Lys Asn Arg Thr Ala
 100 105 110
 Ser Asp Met Arg Ile Ala Ile Asn Lys Arg Gly Gly Ser Leu Val Glu
 115 120 125
 Pro Gly Ser Val Leu Tyr Asn Phe Ala Arg Lys Gly Ala Cys Thr Val
 130 135 140
 Ala Lys Ser Ser Ile Asp Glu Glu Val Ile Phe Ser Tyr Ala Ile Glu
 145 150 155 160
 Ala Gly Ala Glu Asp Leu Asp Thr Glu Asp Glu Glu Asn Phe Leu Val
 165 170 175
 Ile Cys Ala Pro Ser Glu Leu Ala Ser Val Lys Glu Lys Leu Ile Ser
 180 185 190
 Gln Gly Ala Thr Cys Ser Glu Asp Arg Leu Ile Tyr Leu Pro Leu Arg
 195 200 205
 Leu Val Asp Cys Asp Glu Lys Asp Gly Glu Ala Asn Leu Ala Leu Ile
 210 215 220
 Asp Trp Leu Glu Gln Ile Glu Asp Val Asp Asp Val Tyr His Asn Met
 225 230 235 240
 Ser

<210>616
 <211>195
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>616

Ser Ala Glu Arg Gly Phe Arg His Pro Ile Val Met Val Glu Thr Val
 1 5 10 15
 Leu His Asn Phe Gln Arg Tyr Leu Ser Lys Tyr Leu Tyr Arg Val Phe
 20 25 30
 Arg Phe Pro Cys Arg Gln Lys Thr Phe Leu Ser Ser His Arg Val Leu
 35 40 45
 Ala Arg Pro Ser Phe Pro Val Asp Tyr Cys Pro Gly Lys Ile Tyr Asp
 50 55 60
 Leu Gln Glu Ile Tyr Glu Glu Leu Asn Ala Gln Leu Phe Gln Gly Ala
 65 70 75 80
 Leu Arg Leu Gln Ile Gly Trp Phe Gly Arg Lys Ala Thr Arg Lys Gly
 85 90 95
 Lys Ser Val Val Leu Gly Leu Phe His Glu Asn Glu Gln Leu Ile Arg
 100 105 110
 Ile His Arg Ser Leu Asp Arg Gln Glu Ile Pro Arg Phe Met Glu
 115 120 125
 Tyr Leu Val Tyr His Glu Met Val His Ser Val Val Pro Arg Glu Tyr
 130 135 140
 Ser Leu Ser Gly Arg Ser Ile Phe His Gly Lys Lys Phe Lys Glu Tyr
 145 150 155 160
 Glu Gln Arg Phe Pro Leu Tyr Asp Arg Ala Val Ala Trp Glu Lys Ala
 165 170 175
 Asn Ala Tyr Leu Leu Arg Gly Tyr Lys Lys Arg Val Gly Gly Gly Tyr
 180 185 190
 Gly Arg Ala
 195

<210>617

<211>188

<212>PRT

<213>Chlamydia pneumoniae

<400>617

Ser Ile Phe Gly Arg Val Trp Xaa Xaa Phe Met Thr Ala Glu Lys Gln
 1 5 10 15
 Asn Thr Gly Ile Leu Gly Leu Glu Ile Arg Tyr Thr Leu Pro Ser Asp
 20 25 30
 Ala Thr Tyr Met Leu Lys Trp Leu Asn Asp Pro Lys Ile Leu Arg Gly
 35 40 45
 Phe Pro Ile Gln Thr Glu Ala Glu Ile Arg Glu Thr Val Asn Phe Trp
 50 55 60
 Val Gly Phe Tyr Arg Tyr His Ser Ser Leu Thr Ala Val Tyr Asn Gly
 65 70 75 80
 Asn Val Ala Gly Val Ala Thr Leu Val Leu Asn Pro Tyr Val Lys Val
 85 90 95
 Ser His His Ala Leu Ile Ser Ile Ile Val Gly Glu Glu Phe Arg Asn
 100 105 110
 Lys Gly Ile Gly Thr Ala Leu Leu Asn Asn Leu Ile His Leu Ala Lys
 115 120 125
 Thr Arg Phe Lys Leu Glu Val Leu Tyr Leu Glu Val Tyr Glu Gly Asn
 130 135 140
 Pro Ala Leu His Leu Tyr Gln Arg Phe Gly Phe Val Glu Val Gly Arg
 145 150 155 160
 Gln Asn Arg Phe Tyr Lys Asp Glu Ile Gly Tyr Leu Ala Lys Thr Thr
 165 170 175
 Met Glu Lys Gly Ser Ile Glu Arg Arg Lys Arg Phe
 180 185

<210>618

<211>139

<212>PRT

<213>Chlamydia pneumoniae

<400>618

Asp Glu Ile Arg Pro Asn Asp Leu Arg Ile Asp Thr Phe Arg Ser Ser
 1 5 10 15
 Gly Ala Gly Gly Gln His Val Asn Val Thr Glu Ser Ala Val Arg Ile
 20 25 30

Thr His Leu Pro Ser Gly Val Val Val Ser Cys Gln Asn Glu Arg Ser
 35 40 45
 Gln Ile Gln Asn Arg Glu Ser Cys Met Lys Met Leu Gln Ala Lys Leu
 50 55 60
 Tyr Gln Gln Val Leu Gln Glu Arg Leu Glu Lys Gln Ser Leu Asp Arg
 65 70 75 80
 Lys Asp Lys Lys Glu Ile Ala Trp Gly Ser Gln Ile Arg Asn Tyr Val
 85 90 95
 Phe Gln Pro Tyr Thr Leu Val Lys Asp Val Arg Thr Gly His Glu Thr
 100 105 110
 Gly Asn Val Gln Ala Met Leu Asp Gly Glu Leu Leu Asp Glu Phe Ile
 115 120 125
 Lys Ala Tyr Leu Ala Glu Phe Gly Xaa Val Ser
 130 135

<210>619

<211>211

<212>PRT

<213>Chlamydia pneumoniae

<400>619

Leu Arg Gly Leu Phe Asp Leu Asp Lys Lys Gln Lys Glu Leu Gln Val
 1 5 10 15
 Leu Glu Glu Glu Ser Ser Glu Glu Asn Phe Trp Gln Asp Ser Val His
 20 25 30
 Ala Gly Lys Ile Ser Glu Gln Ile Val Ser Leu Arg Arg Gln Ile Gln
 35 40 45
 Glu Tyr Gln Glu Leu Lys Ser Lys Ile Asp Ala Ile Glu Phe Phe Leu
 50 55 60
 Glu Asp Ala Asp Ala Leu Glu Asp Pro Ala Ile Cys Glu Asp Leu Glu
 65 70 75 80
 Lys Glu Phe Leu Phe Cys Glu Lys Lys Leu Ala Val Trp Glu Thr Gln
 85 90 95
 Arg Leu Leu Ser Gly Glu Ala Asp Lys Asn Ser Cys Phe Leu Thr Ile
 100 105 110
 Asn Ala Gly Ala Gly Gly Thr Glu Ser Cys Asp Trp Val Glu Met Leu
 115 120 125
 Phe Arg Met Tyr Ser Arg Trp Ala Thr Lys His Gln Trp Ala Leu Glu
 130 135 140
 Val Val Asp Arg Leu Asp Gly Glu Val Val Gly Ile Lys His Val Thr
 145 150 155 160
 Val Lys Phe Ser Gly Met Tyr Ala Tyr Gly Tyr Ala Lys Ala Glu Arg
 165 170 175
 Gly Val His Arg Leu Val Arg Ile Ser Pro Phe Asp Ser Asn Gly Lys
 180 185 190
 Arg His Thr Ser Phe Ala Ser Val Asp Val Phe Pro Glu Ile Asp Xaa
 195 200 205
 Arg Leu Arg
 210

<210>620

<211>90

<212>PRT

<213>Chlamydia pneumoniae

<400>620

Glu Ser Pro Met Ser Gln Lys Asn Lys Asn Ser Ala Phe Met His Pro
 1 5 10 15
 Val Asn Ile Ser Thr Asp Leu Ala Val Ile Val Gly Lys Gly Pro Met
 20 25 30
 Pro Arg Thr Glu Ile Val Lys Lys Val Trp Glu Tyr Ile Lys Lys His
 35 40 45
 Asn Cys Gln Asp Gln Lys Asn Lys Arg Asn Ile Leu Pro Asp Ala Asn
 50 55 60
 Leu Ala Lys Val Phe Gly Ser Ser Asp Pro Ile Asp Met Phe Gln Met
 65 70 75 80
 Thr Lys Ala Leu Ser Lys His Ile Val Lys
 85 90

<210>621

<211>218

<212>PRT

<213>Chlamydia pneumoniae

<400>621

Ser Ala Thr Ser His Val Pro Met Ile Lys Ser Ser Leu Ile Leu Leu
1 5 10 15
Ser Gly Gly Gln Gly Thr Arg Phe Gly Ser Lys Ile Pro Lys Gln Tyr
20 25 30
Leu Pro Leu Asn Gly Thr Pro Leu Val Leu His Ser Leu Lys Ile Leu
35 40 45
Ser Ser Leu Pro Gln Ile Ala Glu Val Ile Val Val Cys Asp Pro Ser
50 55 60
Tyr Gln Glu Thr Phe Gln Glu Tyr Pro Val Ser Phe Ala Ile Pro Gly
65 70 75 80
Glu Arg Arg Gln Asp Ser Val Phe Ser Gly Leu Gln Gln Val Ser Tyr
85 90 95
Pro Trp Val Ile Ile His Asp Gly Ala Arg Pro Phe Ile Tyr Pro Asp
100 105 110
Glu Ile His Asp Leu Leu Glu Thr Ala Glu Lys Ile Gly Ala Thr Ala
115 120 125
Leu Ala Ser Pro Ile Pro Tyr Thr Ile Lys Gln Arg Asn Pro Val Arg
130 135 140
Thr Leu Asp Arg Asp Asn Leu Ala Ile Ile His Thr Pro Gln Cys Ile
145 150 155 160
Lys Thr Glu Ile Leu Arg Glu Gly Leu Ala Leu Ala Lys Glu Lys Gln
165 170 175
Leu Thr Leu Val Asp Asp Ile Glu Ala Ala Glu Ile Ile Gly Lys Pro
180 185 190
Ser Gln Leu Val Phe Asn Lys His Pro Gln Ile Lys Ile Ser Tyr Pro
195 200 205
Glu Asp Leu Thr Ile Ala Gln Ala Leu Leu
210 215

<210>622

<211>267

<212>PRT

<213>Chlamydia pneumoniae

<400>622

Met Thr Lys Val Ala Leu Leu Ile Ala Tyr Gln Gly Thr Ala Tyr Ser
1 5 10 15
Gly Trp Gln Gln Gln Pro Asn Asp Leu Ser Ile Gln Glu Val Ile Glu
20 25 30
Ser Ser Leu Lys Lys Ile Thr Lys Thr Arg Thr Pro Leu Ile Ala Ser
35 40 45
Gly Arg Thr Asp Ala Gly Val His Ala Tyr Gly Gln Val Ala His Phe
50 55 60
Arg Ala Pro Asp His Pro Leu Phe Ala Asn Ala Asn Leu Thr Lys Lys
65 70 75 80
Ala Leu Asn Ala Ile Leu Pro Lys Asp Ile Val Ile Arg Asp Val Ala
85 90 95
Leu Phe Asp Asp Asn Phe His Ala Arg Tyr Leu Thr Ile Ala Lys Glu
100 105 110
Tyr Arg Tyr Ser Leu Ser Arg Leu Ala Lys Pro Leu Pro Trp Gln Arg
115 120 125
His Phe Cys Tyr Thr Pro Arg His Pro Phe Ser Thr Glu Leu Met Gln
130 135 140
Glu Gly Ala Asn Leu Leu Ile Gly Thr His Asp Phe Ala Ser Phe Ala
145 150 155 160
Asn His Gly Arg Asp Tyr Asn Ser Thr Val Arg Thr Ile Tyr Thr Leu
165 170 175
Asp Ile Val Asp Lys Gly Asp Ser Leu Ser Ile Ile Cys Arg Gly Asn
180 185 190
Gly Phe Leu Tyr Lys Met Val Arg Asn Leu Val Gly Ala Leu Leu Asp
195 200 205

Val Gly Lys Gly Ala Tyr Pro Pro Glu His Leu Leu Asp Ile Leu Glu
 210 215 220
 Gln Lys Asn Arg Arg Glu Gly Pro Ser Ala Ala Pro Ala Tyr Gly Leu
 225 230 235 240
 Ser Leu His His Val Cys Tyr Ser Ser Pro Tyr Asn Asn Phe Cys Cys
 245 250 255
 Glu Gln Cys Ser Val Ser Thr Ser Asn Glu Gly
 260 265

<210>623

<211>263

<212>PRT

<213>Chlamydia pneumoniae

<400>623

Glu Gly Leu Arg Trp Arg Ser Val Lys Ser Phe Leu Arg Gln Cys Trp
 1 5 10 15
 Ile Tyr Ser Met Leu Val Ser Asp Glu Phe Gln Leu Cys Leu Arg Ser
 20 25 30
 Gly Met Tyr Leu Glu Asp Tyr Asp Val Phe Phe Phe Asp Leu Asp Gly
 35 40 45
 Leu Leu Val Asp Thr Glu Pro Cys Phe Tyr Arg Ala Phe Leu Gln Ala
 50 55 60
 Cys Ala Glu Phe Ser Leu Glu Val His Trp Asp Phe Ser Thr Tyr Tyr
 65 70 75 80
 Ser His Thr Thr Leu Gly Thr Glu Ile Phe Ser Lys Lys Phe Ile Glu
 85 90 95
 Gln Tyr Pro Gln Ala Gln Glu Tyr Met Ala Glu Ile Phe Ala Lys Arg
 100 105 110
 Leu Gln Ile Tyr Tyr Lys Ser Leu Glu His Ala Gly Pro Ala Leu Met
 115 120 125
 Pro Gly Val Glu Ala Phe Ile Glu Leu Val Leu Ser Leu Asn Lys Thr
 130 135 140
 Phe Gly Val Val Thr Asn Ser Pro Arg Asp Ala Thr His Thr Leu Arg
 145 150 155 160
 Thr Met Tyr Pro Ile Leu Asn Lys Phe Leu Phe Trp Val Thr Arg Glu
 165 170 175
 Asn Tyr Ala Arg Pro Lys Pro Tyr Gly Asp Ser Tyr Asp Tyr Ala Tyr
 180 185 190
 Arg Thr Phe Ala Arg Glu Gly Met Lys Val Ile Gly Phe Glu Asp Ser
 195 200 205
 Val Lys Gly Leu Arg Ala Leu Ser Lys Ile Pro Ala Thr Leu Val Cys
 210 215 220
 Ile Asn Ser Met Ala Glu Ile Thr Pro Glu Asp Tyr Pro Glu Leu Lys
 225 230 235 240
 Gly Lys Glu Phe Phe Ser Tyr Pro Ser Phe Asp Val Leu Thr Glu His
 245 250 255
 Cys Ser Gln Gln Lys Leu Leu
 260

<210>624

<211>291

<212>PRT

<213>Chlamydia pneumoniae

<400>624

Lys Asn Pro Asn Ala Leu Leu Lys Lys Ile Gln His Arg Leu Val Lys
 1 5 10 15
 Met His Asp Lys Asn Lys Val Leu Tyr Leu Gln Ala Asn His Leu Asn
 20 25 30
 Gln Lys Arg Lys Arg His Asn Pro Leu Asn Thr Tyr His Ser Ser Asn
 35 40 45
 Thr Thr Glu Thr Arg Arg Leu Pro Thr Tyr Tyr Lys Ser Asn Ile Val
 50 55 60
 Leu Lys Met Ile Leu Arg Ile Ser Thr Val Ser Leu Leu Thr Ser Cys
 65 70 75 80
 Ser Phe Ser Lys Asn Ser Arg Thr Cys Phe Val Thr Pro Glu Arg Ile
 85 90 95

Thr Ser Gln Lys Asp Cys Pro Val Leu Leu His Pro Lys Ser Thr Thr
 100 105 110
 Ile Ser Pro Pro Leu Tyr Asp Trp Ile Ser Pro Asn Arg Glu Val Ile
 115 120 125
 Thr Ala Tyr Ser Phe Tyr Cys Arg Gly Gln Gly Asn Ser Ile Ile Thr
 130 135 140
 Pro Glu Gly Val Leu Tyr Asp Cys Asp Gly Leu His His Ser Ile Thr
 145 150 155 160
 Lys Glu Glu Phe Arg Tyr Ile His Pro Arg Leu Ile Glu Val Val Arg
 165 170 175
 Leu Leu Gln Gln Asp His Pro Lys Val Ser Ile Ile Glu Ala Phe Cys
 180 185 190
 Cys Pro Lys His Phe His Phe Leu Glu Ala Ser Gly Ile Ser Leu Ser
 195 200 205
 Gln Leu His Leu Gln Gly Thr Ala Ala Thr Phe Ala Leu Asp Pro Pro
 210 215 220
 Leu Pro Met Glu Lys Leu Ala Thr Ile Lys Lys Leu Tyr Lys Lys
 225 230 235 240
 Asn Ser Asp Pro Ser Leu Ser Asn Phe Ile Val Thr Glu Ala Thr Leu
 245 250 255
 Thr Asn Pro Glu Leu Arg Leu Thr Gln Gln Asp Leu Gly Ser His Thr
 260 265 270
 Glu Ile Thr Val Glu Ile Leu Asp Asn Leu Gln Asn Lys Glu Ala Leu
 275 280 285
 Ser Ser Ala
 290

<210>625

<211>123

<212>PRT

<213>Chlamydia pneumoniae

<400>625

Ile Val Leu Ser Phe Phe Leu Gly Lys Thr Lys Val Thr Pro Arg Phe
 1 5 10 15
 Leu Met Asn Glu Arg Thr Leu Leu Leu Leu Lys Lys Lys Lys Gly
 20 25 30
 Leu Phe Leu Ala Ile Leu Asp Leu Thr Gln Thr Glu Ser Ser Leu Thr
 35 40 45
 Thr Pro Glu Leu Glu Lys Val Leu Lys Gln Lys Lys Ile Phe Leu Ser
 50 55 60
 Cys Ile Asp Arg Val Asp Leu Gln Ile Lys Glu Phe Arg His Ala Phe
 65 70 75 80
 Ser Ser Glu Leu Pro Gln Asp Ile Gln Glu Glu Leu Glu Glu Ile Arg
 85 90 95
 Asp Val Ile Ile Arg Ile Leu Asp Thr Asp Lys Arg Asn Tyr Ala Gln
 100 105 110
 Lys Lys Lys Glu Phe Gly Ile Tyr Glu Arg Pro
 115 120

<210>626

<211>380

<212>PRT

<213>Chlamydia pneumoniae

<400>626

Ile Arg Ile Asn Ala Thr Met His Arg Lys Lys Arg Asn Leu Val Phe
 1 5 10 15
 Met Asn Val Pro Asp Ser Lys Asn Leu His Pro Pro Ala Tyr Glu Leu
 20 25 30
 Leu Glu Ile Lys Ala Arg Ile Thr Gln Ser Tyr Lys Glu Ala Ser Ala
 35 40 45
 Ile Leu Thr Ala Ile Pro Asp Gly Ile Leu Leu Leu Ser Glu Thr Gly
 50 55 60
 His Phe Leu Ile Cys Asn Ser Gln Ala Arg Glu Ile Leu Gly Ile Asp
 65 70 75 80
 Glu Asn Leu Glu Ile Leu Asn Arg Ser Phe Thr Asp Val Leu Pro Asp
 85 90 95

Thr Cys Leu Gly Phe Ser Ile Gln Glu Ala Leu Glu Ser Leu Lys Val
 100 105 110
 Pro Lys Thr Leu Arg Leu Ser Leu Cys Lys Glu Ser Lys Glu Lys Glu
 115 120 125
 Val Glu Leu Phe Ile Arg Lys Asn Glu Ile Ser Gly Tyr Leu Phe Ile
 130 135 140
 Gln Ile Arg Asp Arg Ser Asp Tyr Lys Gln Leu Glu Asn Ala Ile Glu
 145 150 155 160
 Arg Tyr Lys Asn Ile Ala Glu Leu Gly Lys Met Thr Ala Thr Leu Ala
 165 170 175
 His Glu Ile Arg Asn Pro Leu Ser Gly Ile Val Gly Phe Ala Ser Ile
 180 185 190
 Leu Lys Lys Glu Ile Ser Ser Pro Arg His Gln Arg Met Leu Ser Ser
 195 200 205
 Ile Ile Ser Gly Thr Arg Ser Leu Asn Asn Leu Val Ser Ser Met Leu
 210 215 220
 Glu Tyr Thr Lys Ser Gln Pro Leu Asn Leu Lys Ile Ile Asn Leu Gln
 225 230 235 240
 Asp Phe Phe Ser Ser Leu Ile Pro Leu Leu Ser Val Ser Phe Pro Asn
 245 250 255
 Cys Lys Phe Val Arg Glu Gly Ala Gln Pro Leu Phe Arg Ser Ile Asp
 260 265 270
 Pro Asp Arg Met Asn Ser Val Val Trp Asn Leu Val Lys Asn Ala Val
 275 280 285
 Glu Thr Gly Asn Ser Pro Ile Thr Leu Thr Leu His Thr Ser Gly Asp
 290 295 300
 Ile Ser Val Thr Asn Pro Gly Thr Ile Pro Ser Glu Ile Met Asp Lys
 305 310 315 320
 Leu Phe Thr Pro Phe Phe Thr Thr Lys Arg Glu Gly Asn Gly Leu Gly
 325 330 335
 Leu Ala Glu Ala Gln Lys Ile Ile Arg Leu His Gly Gly Asp Ile Gln
 340 345 350
 Leu Lys Thr Ser Asp Ser Ala Val Ser Phe Phe Ile Ile Ile Pro Glu
 355 360 365
 Leu Leu Ala Ala Leu Pro Lys Glu Arg Ala Ala Ser
 370 375 380

<210>627

<211>216

<212>PRT

<213>Chlamydia pneumoniae

<400>627

Ile His Ser Phe Leu Ser Thr Arg Thr Val Cys Val Arg Gln Lys Lys
 1 5 10 15
 Leu Arg Lys Ile Ser Lys Glu Leu Gln Gln Arg Tyr Ser Arg Leu Gln
 20 25 30
 Glu Glu Lys Gln Val Lys Glu Lys Ile Leu Glu Glu Ser Met Asn His
 35 40 45
 Phe Ala Asp Leu Phe Glu Lys Ala Gln Lys Glu Asn Met Ala Tyr Lys
 50 55 60
 Lys Lys Leu Ala Asp Leu Glu Gly Ala Ala Ala Pro Thr Glu Ile Gly
 65 70 75 80
 Glu Asp Asp Asp Trp Val Leu Thr Asp Ser Ala Ser Leu Ser Gln Lys
 85 90 95
 Lys Ile Arg Glu Leu Val Glu Glu Asn Gln Glu Leu Leu Lys Ala Leu
 100 105 110
 Ala Phe Lys Ser Asn Glu Leu Thr Gln Leu Val Ala Asp Ala Val Glu
 115 120 125
 Ala Glu Lys Glu Ile Ser Lys Leu Arg Glu His Ile Glu Glu Gln Lys
 130 135 140
 Glu Gly Leu Arg Ala Leu Asp Lys Met His Ala Gln Ala Ile Lys Asp
 145 150 155 160
 Cys Glu Val Ala Gln Arg Lys Cys Cys Asp Leu Glu Ser Leu Leu Ser
 165 170 175
 Pro Val Arg Glu Asp Ala Gly Met Arg Phe Glu Leu Glu Val Glu Leu

180 185 190
 Gln Arg Leu Gln Glu Glu Asn Ala Gln Leu Arg Ala Glu Val Glu Arg
 195 200 205
 Leu Glu Gln Glu Gln Phe Gln Gly
 210 215
 <210>628
 <211>212
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>628
 Gly Val Gly Ser Met Thr Ser Arg Arg Asp Ala Gly Arg Leu Tyr Asn
 1 5 10 15
 Val Phe Asn Gln Ser Gln Lys Asp Ile Gln Arg Ala His Asp Arg Glu
 20 25 30
 Ala Ser Gln Arg Ala Cys Glu Gly Thr Glu Met Asp Cys Ala Glu Arg
 35 40 45
 Gln Gln Leu Glu Lys Asp Leu Arg Arg Gln Leu Lys Ser Met Gln Glu
 50 55 60
 Trp Ile Glu Met Arg Gly Thr Ile His Gln Gln Glu Lys Ala Trp Arg
 65 70 75 80
 Lys Gln Asn Ala Lys Leu Glu Arg Leu Gln Glu Asp Leu Arg Leu Thr
 85 90 95
 Gly Ile Ala Phe Asp Glu Gln Ser Leu Phe Tyr Arg Glu Tyr Lys Glu
 100 105 110
 Lys Tyr Leu Ser Gln Lys Leu Asp Met Gln Lys Ile Leu Gln Glu Val
 115 120 125
 Asn Ala Glu Lys Ser Glu Lys Ala Cys Leu Glu Ser Leu Val His Asp
 130 135 140
 Tyr Glu Lys Gln Leu Glu Gln Lys Asp Ala Asn Leu Lys Lys Ala Ala
 145 150 155 160
 Ala Val Trp Glu Glu Leu Gly Lys Gln Gln Gln Glu Asp Tyr Glu
 165 170 175
 Gln Thr Gln Glu Ile Arg Arg Leu Asn Thr Phe Ile Leu Glu Tyr Gln
 180 185 190
 Asp Ser Leu Arg Glu Ala Glu Lys Val Glu Lys Asp Phe Gln Arg Ala
 195 200 205
 Thr Thr Lys Val
 210
 <210>629
 <211>290
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>629
 Ile Ser Leu Arg Arg Lys Ile Leu Arg Pro Asn Asn Phe Ser Ile Gly
 1 5 10 15
 Asp Cys Ser Ser Asn Met Ala Thr Pro Ala Gln Lys Ser Pro Thr Phe
 20 25 30
 Gln Asp Pro Ser Phe Val Arg Glu Leu Gly Ser Asn His Pro Val Phe
 35 40 45
 Ser Pro Leu Thr Leu Glu Glu Arg Gly Glu Met Ala Ile Ala Arg Val
 50 55 60
 Gln Gln Cys Gly Trp Asn His Thr Ile Val Lys Val Ser Leu Ile Ile
 65 70 75 80
 Leu Ala Leu Leu Thr Ile Leu Gly Gly Gly Leu Leu Val Gly Leu Leu
 85 90 95
 Pro Ala Val Pro Met Phe Ile Gly Thr Gly Leu Ile Ala Leu Gly Ala
 100 105 110
 Val Ile Phe Ala Leu Ala Leu Ile Leu Cys Leu Tyr Asp Ser Gln Gly
 115 120 125
 Leu Pro Glu Glu Leu Pro Pro Val Pro Glu Pro Gln Gln Ile Gln Ile
 130 135 140
 Glu Asp Leu Arg Asn Glu Thr Arg Glu Val Leu Glu Gly Thr Leu Leu
 145 150 155 160
 Glu Val Leu Leu Lys Asp Arg Asp Ala Lys Asp Pro Ala Val Pro Gln

165 170 175
 Val Val Val Asp Cys Glu Lys Arg Leu Gly Met Leu Asp Arg Lys Leu
 180 185 190
 Arg Arg Glu Glu Glu Ile Leu Tyr Arg Ser Thr Ala His Leu Lys Asp
 195 200 205
 Glu Glu Arg Tyr Glu Phe Leu Leu Glu Leu Leu Glu Met Arg Ser Leu
 210 215 220
 Val Ala Asp Arg Leu Glu Phe Asn Arg Arg Ser Tyr Glu Arg Phe Val
 225 230 235 240
 Gln Gly Ile Met Thr Val Arg Ser Glu Glu Gly Glu Lys Glu Ile Ser
 245 250 255
 Arg Leu Gln Asp Leu Ile Ser Leu Gln Gln Gln Thr Val Gln Asp Leu
 260 265 270
 Arg Ser Arg Ile Asp Asp Glu Gln Lys Arg Cys Trp Thr Ala Leu Gln
 275 280 285
 Arg Ile
 290
 <210>630
 <211>337
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>630
 Pro Cys His Leu Arg His Glu Tyr Pro Asp Gly Ser Gly Leu Asp Leu
 1 5 10 15
 Ile Lys Ile Ile Lys Gln Ser Ser Pro His Thr Pro Val Leu Val Val
 20 25 30
 Thr Ala Tyr Gly Ser Ile Glu Asn Ala Val Glu Ala Met His Gln Gly
 35 40 45
 Ala Phe Asn Tyr Leu Thr Lys Pro Phe Ser Ser Glu Ala Leu Phe Ala
 50 55 60
 Phe Ile Ser Lys Ala Glu Glu Leu Lys Asn Leu Val His Glu Asn Leu
 65 70 75 80
 Phe Leu His Ser Gln Thr Thr Pro Asp Ser His Pro Leu Ile Ala Glu
 85 90 95
 Ser Lys Ala Met Lys Asp Leu Leu Ala Ile Ala Lys Lys Ala Ala Ser
 100 105 110
 Ser Ser Ala Asn Ile Phe Ile His Gly Glu Ser Gly Cys Gly Lys Glu
 115 120 125
 Val Leu Ser Phe Phe Ile His His Asn Ser Pro Arg Ala Asn His Pro
 130 135 140
 Tyr Ile Lys Val Asn Cys Ala Ala Ile Pro Glu Thr Leu Leu Glu Ser
 145 150 155 160
 Glu Leu Phe Gly His Glu Lys Gly Ala Phe Thr Gly Ala Thr Thr Lys
 165 170 175
 Lys Ala Gly Arg Phe Glu Leu Ala His Lys Gly Thr Leu Leu Asp
 180 185 190
 Glu Ile Thr Glu Val Pro Val Asn Leu Gln Ala Lys Leu Leu Arg Ala
 195 200 205
 Ile Gln Glu Lys Glu Ile Glu His Leu Gly Gly Thr Lys Thr Leu Ser
 210 215 220
 Val Asp Val Arg Ile Leu Ala Thr Ser Asn Arg Lys Leu Lys Glu Ala
 225 230 235 240
 Ile Asp Asp Lys Ser Phe Arg Gln Asp Leu Tyr Tyr Arg Leu Asn Val
 245 250 255
 Ile Pro Leu His Leu Pro Pro Leu Arg Asp Arg Gln Asp Asp Ile Leu
 260 265 270
 Pro Leu Ala Asn Tyr Phe Leu Asn Lys Phe Cys Arg Met Asn Asn Thr
 275 280 285
 Pro Leu Lys Thr Leu Ser Pro Lys Ala Gln Glu Leu Leu Asn Tyr
 290 295 300
 Pro Trp Pro Gly Asn Ile Arg Glu Leu Ser Asn Val Leu Glu Arg Val
 305 310 315 320
 Val Ile Leu Glu Asn Thr Ser Leu Leu Thr Glu Asp Met Leu Ala Leu
 325 330 335

Ala

<210>631

<211>223

<212>PRT

<213>Chlamydia pneumoniae

<400>631

```
Ser Tyr Gly Glu Leu Phe Ile Leu Ser Thr Leu Leu Lys His His Val
 1          5          10          15
Thr Leu Gly Asp Lys Met Arg Pro His Arg Lys His Val Ser Ser Lys
          20          25          30
Ser Leu Ala Leu Lys Gln Ser Ala Ser Thr His Val Glu Ile Thr Thr
          35          40          45
Lys Ala Phe Arg Leu Ser Met Pro Leu Lys Gln Leu Ile Leu Glu Lys
          50          55          60
Ser Asp His Leu Pro Pro Met Glu Thr Ile Arg Val Val Leu Thr Ser
          65          70          75          80
His Lys Asp Lys Leu Gly Thr Glu Val His Val Val Ala Ser His Gly
          85          90          95
Lys Glu Ile Leu Gln Thr Lys Val His Asn Ala Asn Pro Tyr Thr Ala
          100          105          110
Val Ile Asn Ala Phe Lys Lys Ile Arg Thr Met Ala Asn Lys His Ser
          115          120          125
Asn Lys Arg Lys Asp Arg Thr Lys His Asp Leu Gly Leu Ala Ala Lys
          130          135          140
Glu Glu Arg Ile Ala Ile Gln Glu Glu Gln Glu Asp Arg Leu Ser Asn
          145          150          155          160
Arg Val Ala Ser Cys Arg Arg Pro Arg Cys Leu Gly Phe Ser Lys Asn
          165          170          175
Ser Trp Val Cys Ser Arg Ile Ser Glu Lys Glu Asp Leu Gln Glu Lys
          180          185          190
Asp Glu His Ser Tyr Ala Ile Ser Arg Arg Gly Tyr Pro Pro Ala Arg
          195          200          205
Val Cys Arg Arg Lys Leu Pro Asp Leu Leu Glu Arg Ala Arg Ala
          210          215          220
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<210>632

<211>254

<212>PRT

<213>Chlamydia pneumoniae

<400>632

```
Ser Ser Met Gln Ile Cys Val Thr Gly Val Val Leu Arg Ser Arg Pro
 1          5          10          15
Leu Gly Lys Asn His Thr Leu Thr Thr Leu Phe Thr Pro Glu Gly Leu
          20          25          30
Phe Thr Phe Phe Ala Lys Gln Gly Gln Thr Leu Gln Cys Asp Tyr Arg
          35          40          45
Glu Thr Leu Val Pro Ile Ser Leu Gly Lys Tyr Thr Leu His Arg Asn
          50          55          60
Gly Ser Arg Leu Pro Lys Leu Thr His Gly Asp Ile Leu Asn Ala Phe
          65          70          75          80
Glu Ala Ile Lys Gln Thr Tyr Ala Leu Leu Glu Ala Ser Gly Lys Met
          85          90          95
Ile Gln Ala Leu Leu Ala Ser Gln Trp Lys Glu Lys Pro Ser His Lys
          100          105          110
Leu Phe Ser Leu Phe Leu Asn Phe Leu His Arg Ile Pro Glu Ser Ser
          115          120          125
Asn Pro Glu Phe Phe Ala Ala Ile Phe Val Leu Lys Leu Leu Gln Tyr
          130          135          140
Glu Gly Ile Leu Asp Leu Thr Pro Ala Cys Ser Leu Cys Lys Ala Ser
          145          150          155          160
Leu Pro Tyr Ala Cys Tyr Arg Tyr Gln Gly His Lys Leu Cys Lys Lys
          165          170          175
His Gln His Lys Gln Ala Ile Ser Ile Glu Lys Glu Glu Glu Gln Ile
          180          185          190
```

Leu Gln Ala Ile Ile His Ala Lys Lys Phe Ser Glu Leu Leu Ala Ile
 195 200 205
 Ala Glu Phe Pro Ile Ala Ile Ala Glu Lys Ile Phe Tyr Leu Phe Asp
 210 215 220
 Ser Leu Gln Glu Glu Lys Lys Ser Glu Arg Asn Ser Ser Glu Asp Pro
 225 230 235 240
 Tyr His Glu Ile Leu Arg Leu Ser Lys Val Val His Pro Tyr
 245 250

<210>633

<211>207

<212>PRT

<213>Chlamydia pneumoniae

<400>633

Leu Phe Leu Tyr Gly Asp His Asn Leu Gly Phe Ala Cys Arg Tyr Leu
 1 5 10 15
 Phe Phe Phe Ile Val Leu Phe Ala Ser Gly Ser Phe Gly Asn Gln Leu
 20 25 30
 Leu Ser Val Pro Cys Trp Leu Ser Glu Glu Glu Ser Phe Tyr Thr His
 35 40 45
 Arg Phe Asp Phe Ser Lys Ser Tyr Pro Asp Met Glu Asn Met Glu Ile
 50 55 60
 Gln Ala Gln Arg Lys Lys Arg Val Glu Phe Asn Leu Thr Gly Glu Phe
 65 70 75 80
 Pro Lys Leu Glu Thr Leu Asn Tyr Gln Gly Ser Phe Gly His Leu Arg
 85 90 95
 Ala Lys Cys Arg Gly Val Tyr Pro Val Leu Tyr Ala Leu Asn Phe Ser
 100 105 110
 Cys Ser Ser Cys Lys Met Asp Met Asp Phe Arg Gly Lys Trp Asn Arg
 115 120 125
 Ser Ser Thr Ile Thr Ile Ser Asn Gln Lys Glu Ser Ile Asn Leu Lys
 130 135 140
 Leu Pro Lys Asp Val Gly Val Ile Val Asn Thr Lys Thr Ser Leu Lys
 145 150 155 160
 Gly Asn Val Cys Pro Gly Ser Thr Phe Ile Lys Gln Gly Trp Gly Val
 165 170 175
 Trp Asn Lys Ile Tyr His Asn Asp Leu Val Gly Phe Ser Glu Val Thr
 180 185 190
 Leu Ile Phe Asn Val Ser Ser Glu Gly Gly Thr Ile Thr Phe Ser
 195 200 205

<210>634

<211>219

<212>PRT

<213>Chlamydia pneumoniae

<400>634

Ser Leu Ile Met Arg Cys Thr Ala Tyr Cys Thr Ala Ser Ala Tyr Asn
 1 5 10 15
 Leu His Val Leu Phe His Leu Leu Lys Pro Arg Tyr Pro Thr Ile Leu
 20 25 30
 Ser Arg Glu Tyr Val Leu Ala Asn Leu Asp Ser Thr Gln Ala Ser Asn
 35 40 45
 Gln Leu Ala Ile Phe Phe Pro Phe Gly Val Ala Val Phe Trp Gly Trp
 50 55 60
 Glu Glu Ser Glu Glu Ile Lys Leu Leu Gln Thr Ile Val Thr Ala Ser
 65 70 75 80
 Pro Glu Ile Leu Pro Gln Pro Glu Ile Asp Cys Tyr Asn Phe His Tyr
 85 90 95
 Gly Asp Lys Leu Gln Ile Arg Arg Asp Arg Leu Thr Leu Ala Asp Thr
 100 105 110
 Thr Leu Asn Thr Lys Leu Ala Ile Ala Phe Gly Leu Ala Gln Ser Val
 115 120 125
 Lys Leu Thr Thr Phe Glu Thr Thr Ile Tyr Lys Thr Ile Glu Asp Ser
 130 135 140
 Lys Arg Leu Pro Gln Asp Leu Ala Thr Lys Gly Lys Ile Ser Met Ser
 145 150 155 160

Arg Lys Ala Ile Ala Lys Lys Ile Gly Lys Leu Phe Leu Asp Lys Ala
 165 170 175
 Ser Val Asn Leu His Ser Asp Ile Leu Asp Glu Pro Asp Phe Trp
 180 185 190
 Asp His Pro Glu Thr Gln Ala Ile Tyr Arg Asp Val Leu Ser Cys Leu
 195 200 205
 Asp Ile Glu Ala Arg Ile Asn Val Leu Ile Val
 210 215
 <210>635
 <211>368
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>635
 Val Leu Gly Ala Lys Cys Met Ala Phe Lys Arg Lys Thr Arg Trp Leu
 1 5 10 15
 Trp Gln Val Leu Ile Leu Ser Val Gly Leu Asn Met Leu Phe Leu Leu
 20 25 30
 Leu Phe Tyr Ser Ala Ile Phe Arg Lys Asp Ile Tyr Lys Leu His Leu
 35 40 45
 Phe Ser Gly Pro Leu Ile Ala Lys Ser Ser Arg Lys Val Tyr Leu Ser
 50 55 60
 Glu Asp Phe Leu Asn Glu Ile Ser Gln Ala Ser Leu Asp Asp Leu Ile
 65 70 75 80
 Ser Leu Phe Lys Asp Glu Arg Tyr Met Tyr Gly Arg Pro Ile Lys Leu
 85 90 95
 Trp Ala Leu Ser Val Ala Ile Ala Ser His His Ile Asp Ile Thr Pro
 100 105 110
 Val Leu Ser Lys Pro Leu Thr Tyr Thr Glu Leu Lys Gly Ser Ser Val
 115 120 125
 Arg Trp Leu Leu Pro Asn Ile Asp Leu Lys Asp Phe Pro Val Ile Leu
 130 135 140
 Asp Tyr Leu Arg Cys His Lys Tyr Pro Tyr Thr Ser Lys Gly Leu Phe
 145 150 155 160
 Leu Leu Ile Glu Lys Met Val Gln Glu Gly Trp Val Asp Glu Asp Cys
 165 170 175
 Leu Tyr His Phe Cys Ser Thr Pro Glu Phe Leu Tyr Leu Arg Thr Leu
 180 185 190
 Leu Val Gly Ala Asp Val Gln Ala Ser Ser Val Ala Ser Leu Ala Arg
 195 200 205
 Met Val Ile Arg Cys Gly Ser Glu Arg Phe Phe His Phe Cys Asn Glu
 210 215 220
 Glu Ser Arg Thr Ser Met Ile Ser Ala Thr Gln Arg Gln Lys Val Leu
 225 230 235 240
 Lys Ser Tyr Leu Asp Cys Glu Glu Ser Leu Ala Ala Leu Leu Leu Leu
 245 250 255
 Val His Asp Ser Asp Val Val Leu His Glu Phe Cys Asp Glu Asp Leu
 260 265 270
 Glu Lys Val Ile Arg Leu Met Pro Gln Glu Ser Pro Tyr Ser Gln Asn
 275 280 285
 Phe Phe Ser Arg Leu Gln His Ser Pro Arg Arg Glu Leu Ala Cys Met
 290 295 300
 Ser Thr Arg Arg Val Glu Ala Pro Arg Val Gln Glu Asp Gln Asp Glu
 305 310 315 320
 Glu Tyr Val Val Gln Asp Gly Asp Ser Leu Trp Leu Ile Ala Lys Arg
 325 330 335
 Phe Gly Ile Pro Met Asp Lys Ile Ile Gln Lys Asn Gly Leu Asn His
 340 345 350
 His Arg Leu Phe Pro Gly Lys Val Leu Lys Leu Pro Ala Lys Gln Ser
 355 360 365
 <210>636
 <211>797
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>636

Leu Arg Leu Ser Ser Met Arg Ile Pro Ile Thr Leu Leu Gln Xaa Tyr
 1 5 10 15
 Phe Ser Glu Pro Leu Ser Thr Lys Glu Ile Leu Glu Ala Cys Asp His
 20 25 30
 Ile Gly Ile Glu Xaa Glu Ile Glu Asn Thr Thr Leu Tyr Ser Phe Ala
 35 40 45
 Ser Val Ile Thr Ala Lys Ile Leu His Thr Ile Pro His Pro Asn Ala
 50 55 60
 Asp Lys Leu Arg Val Ala Thr Leu Thr Asp Gly Glu Lys Glu His Gln
 65 70 75 80
 Val Val Cys Gly Ala Pro Asn Cys Glu Ala Gly Leu Ile Val Ala Leu
 85 90 95
 Ala Leu Pro Gly Ala Lys Leu Phe Asp Ser Glu Gly Gln Ala Tyr Thr
 100 105 110
 Ile Lys Lys Ser Lys Leu Arg Gly Val Glu Ser Gln Gly Met Cys Cys
 115 120 125
 Gly Ala Asp Glu Leu Gly Leu Asp Glu Leu Gln Ile Gln Glu Arg Ala
 130 135 140
 Leu Leu Glu Leu Pro Glu Ala Thr Pro Leu Gly Glu Asp Leu Ala Thr
 145 150 155 160
 Val Leu Gly Asn Thr Ser Leu Glu Ile Ser Leu Thr Pro Asn Leu Gly
 165 170 175
 His Cys Ala Ser Phe Leu Gly Leu Ala Arg Glu Ile Cys His Val Thr
 180 185 190
 Gln Ala Asn Leu Val Ile Pro Lys Glu Phe Ser Phe Glu Asn Leu Pro
 195 200 205
 Thr Thr Ala Leu Asp Met Gly Asn Asp Pro Asp Ile Cys Pro Phe Phe
 210 215 220
 Ser Tyr Val Val Ile Thr Gly Ile Ser Ala Gln Pro Ser Pro Ile Lys
 225 230 235 240
 Leu Gln Glu Ser Leu Gln Ala Leu Lys Gln Lys Pro Ile Asn Ala Ile
 245 250 255
 Val Asp Ile Thr Asn Tyr Ile Met Leu Ser Leu Gly Gln Pro Leu His
 260 265 270
 Ala Tyr Asp Ala Ser His Val Ala Leu Asp Ser Leu Arg Val Glu Lys
 275 280 285
 Leu Ser Thr Pro Glu Ser Leu Thr Leu Leu Asn Gly Glu Thr Val Leu
 290 295 300
 Leu Pro Ser Gly Val Pro Val Val Arg Asp Asp His Ser Leu Leu Gly
 305 310 315 320
 Leu Gly Gly Val Met Gly Ala Lys Ala Pro Ser Phe Gln Glu Thr Thr
 325 330 335
 Thr Thr Thr Val Ile Lys Ala Ala Tyr Phe Leu Pro Glu Ala Leu Arg
 340 345 350
 Ala Ser Gln Lys Leu Leu Pro Ile Pro Ser Glu Ser Ala Tyr Arg Phe
 355 360 365
 Thr Arg Gly Ile Asp Pro Gln Asn Val Val Pro Ala Leu Gln Ala Ala
 370 375 380
 Ile His Tyr Ile Leu Glu Ile Phe Pro Glu Ala Thr Ile Ser Pro Ile
 385 390 395 400
 Tyr Ser Ser Gly Glu Ile Cys Arg Glu Leu Lys Glu Val Ala Leu Arg
 405 410 415
 Pro Lys Thr Leu Gln Arg Ile Leu Gly Lys Ser Phe Ser Ile Glu Ile
 420 425 430
 Leu Ser Gln Lys Leu Gln Ser Leu Gly Phe Ser Thr Thr Pro Gln Glu
 435 440 445
 Thr Ser Leu Leu Val Lys Val Pro Ser Tyr Arg His Asp Ile Asn Glu
 450 455 460
 Glu Ile Asp Leu Val Glu Glu Ile Cys Arg Thr Glu Ser Trp Asn Ile
 465 470 475 480
 Glu Thr Gln Asn Pro Val Ser Cys Tyr Thr Pro Ile Tyr Lys Leu Lys
 485 490 495
 Arg Glu Thr Ala Gly Phe Leu Ala Asn Ala Gly Leu Gln Glu Phe Phe
 500 505 510

Thr Pro Asp Leu Leu Asp Pro Glu Thr Val Ala Leu Thr Arg Lys Glu
 515 520 525
 Lys Glu Glu Ile Ser Leu Gln Gly Ser Lys His Thr Thr Val Leu Arg
 530 535 540
 Ser Ser Leu Leu Pro Gly Leu Leu Lys Ser Ala Ala Thr Asn Leu Asn
 545 550 555 560
 Arg Gln Ala Pro Ser Val Gln Ala Phe Glu Ile Gly Thr Val Tyr Ala
 565 570 575
 Lys His Gly Glu Gln Cys Gln Glu Thr Gln Thr Leu Ala Ile Leu Leu
 580 585 590
 Thr Glu Asp Gly Glu Ser Arg Ser Trp Leu Pro Lys Pro Ser Leu Ser
 595 600 605
 Phe Tyr Ser Leu Lys Gly Trp Val Glu Arg Leu Leu Tyr His His His
 610 615 620
 Leu Ser Ile Asp Ala Leu Thr Leu Glu Ser Ser Ala Leu Cys Glu Phe
 625 630 635 640
 His Pro Tyr Gln Gln Gly Val Leu Arg Ile His Lys Gln Ser Phe Ala
 645 650 655
 Thr Leu Gly Gln Val His Pro Glu Leu Ala Lys Lys Ala Gln Ile Lys
 660 665 670
 His Pro Val Phe Phe Ala Glu Leu Asn Leu Asp Leu Leu Cys Lys Met
 675 680 685
 Leu Lys Lys Thr Thr Lys Leu Tyr Lys Pro Tyr Ala Ile Tyr Pro Ser
 690 695 700
 Ser Phe Arg Asp Leu Thr Leu Thr Val Pro Glu Asp Ile Pro Ala Asn
 705 710 715 720
 Leu Leu Arg Gln Lys Leu Leu His Glu Gly Ser Lys Trp Leu Glu Ser
 725 730 735
 Val Thr Ile Ile Ser Ile Tyr Gln Asp Lys Ser Leu Glu Thr Arg Asn
 740 745 750
 Lys Asn Val Ser Leu Arg Leu Val Phe Gln Asp Tyr Glu Arg Thr Leu
 755 760 765
 Ser Asn Gln Asp Ile Glu Glu Glu Tyr Cys Arg Leu Val Ala Leu Leu
 770 775 780
 Asn Glu Leu Leu Thr Asp Thr Lys Gly Thr Ile Asn Ser
 785 790 795
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 <211>328
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>637
 Arg Asp Tyr Gln Phe Met Lys Gln Leu Leu Phe Cys Val Cys Val Phe
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 Ala Met Ser Cys Ser Ala Tyr Ala Ser Pro Arg Arg Gln Asp Pro Ser
 20 25 30
 Val Met Lys Glu Thr Phe Arg Asn Asn Tyr Gly Ile Ile Val Ser Gly
 35 40 45
 Gln Glu Trp Val Lys Arg Gly Ser Asp Gly Thr Ile Thr Lys Val Leu
 50 55 60
 Lys Asn Gly Ala Thr Leu His Glu Val Tyr Ser Gly Gly Leu Leu His
 65 70 75 80
 Gly Glu Ile Thr Leu Thr Phe Pro His Thr Thr Ala Leu Asp Val Val
 85 90 95
 Gln Ile Tyr Asp Gln Gly Arg Leu Val Ser Arg Lys Thr Phe Phe Val
 100 105 110
 Asn Gly Leu Pro Ser Gln Glu Glu Leu Phe Asn Glu Asp Gly Thr Phe
 115 120 125
 Val Leu Thr Arg Trp Pro Asp Asn Asn Asp Ser Asp Thr Ile Thr Lys
 130 135 140
 Pro Tyr Phe Ile Glu Thr Tyr Gln Gly His Val Ile Glu Gly Ser
 145 150 155 160
 Tyr Thr Ser Phe Asn Gly Lys Tyr Ser Ser Ser Ile His Asn Gly Glu
 165 170 175
 Gly Val Arg Ser Val Phe Ser Ser Asn Asn Ile Leu Leu Ser Glu Glu

180 185 190
 Thr Phe Asn Glu Gly Val Met Val Lys Tyr Thr Thr Phe Tyr Pro Asn
 195 200 205
 Arg Asp Pro Glu Ser Ile Thr His Tyr Gln Asn Gly Gln Pro His Gly
 210 215 220
 Leu Arg Leu Thr Tyr Leu Gln Gly Gly Ile Pro Asn Thr Ile Glu Glu
 225 230 235 240
 Trp Arg Tyr Gly Phe Gln Asp Gly Thr Thr Ile Val Phe Lys Asn Gly
 245 250 255
 Cys Lys Thr Ser Glu Ile Ala Tyr Val Lys Gly Val Lys Glu Gly Leu
 260 265 270
 Glu Leu Arg Tyr Asn Glu Gln Glu Ile Val Ala Glu Glu Val Ser Trp
 275 280 285
 Arg Asn Asp Phe Leu His Gly Glu Arg Lys Ile Tyr Ala Gly Gly Ile
 290 295 300
 Gln Lys His Glu Trp Tyr Tyr Arg Gly Arg Ser Val Ser Lys Ala Lys
 305 310 315 320
 Phe Glu Arg Leu Asn Ala Ala Gly
 325

<210>638

<211>460

<212>PRT

<213>Chlamydia pneumoniae

<400>638

Trp Glu Ser Ser Arg Ser Arg Val Thr Glu Asn Leu Lys Lys Met Arg
 1 5 10 15
 Ala Glu Lys Val Arg Glu Asn Ile Ser Lys Val Asn Ser Glu Met Val
 20 25 30
 Met Leu Leu Pro Lys Asp Thr Arg Thr Trp Glu Met Glu Arg Arg Tyr
 35 40 45
 Met Ser Thr Tyr Glu Gln Leu Gly Ile Leu Ile Lys Ala Lys Tyr Arg
 50 55 60
 Lys Lys Gln Glu Ala Ser Val Lys Lys Tyr Gln Val Ala Phe Glu Glu
 65 70 75 80
 Lys Arg Gln Ser Pro Met Pro Thr Leu Arg His Leu Glu Met Lys Asn
 85 90 95
 Glu Gly Ile Cys Leu Lys Arg Leu Gln Arg Val Asp Lys Met Gln
 100 105 110
 Arg Pro Tyr Glu Met Ala Gln Gln Ala Trp Asn Arg Ala Thr Asp Asn
 115 120 125
 Tyr Arg Pro Phe Leu Met Ala Leu Thr Arg Ile Glu His Glu Leu Arg
 130 135 140
 Leu Ala Asp Tyr Asn Asn Trp Gly Gln Pro Glu Asp Leu Cys Ile Ala
 145 150 155 160
 Tyr Ala Asn Val Glu Lys Arg Ala Glu Pro Tyr Lys Lys Ser Leu Leu
 165 170 175
 Glu Ile Arg Gln Val Leu Glu Asp Tyr Ala Lys Leu Arg Ser Ala Ile
 180 185 190
 Ser Phe Ile Gln Asp Lys Arg Leu Trp Ile Glu Lys Glu Ser Glu Asp
 195 200 205
 Leu Arg Ile Leu Ile Asn Pro Phe Phe Ser Ser Phe His Trp Glu Asp
 210 215 220
 Asp Ala Gly Gly Ser Arg Glu Met Asn Lys Tyr Val Pro Trp Trp Gln
 225 230 235 240
 Leu Ser Arg Val Thr Arg Lys Asp Leu Leu Ala Ala Leu Val Phe Gly
 245 250 255
 Ile Arg Ile Ala Leu Val Val Ala Gly Ile Gly Ile Thr Ile Ala Leu
 260 265 270
 Ala Ile Gly Ile Met Ile Gly Leu Val Ser Gly Tyr Phe Gly Gly Thr
 275 280 285
 Val Asp Met Ile Leu Ser Arg Phe Thr Glu Ile Trp Glu Thr Met Pro
 290 295 300
 Val Leu Phe Ile Leu Met Leu Val Ile Ser Ile Thr Gln Gln Lys Ser
 305 310 315 320

Leu	Leu	Leu	Asn	Thr	Val	Leu	Leu	Gly	Cys	Phe	Ser	Trp	Thr	Gly	Phe
				325					330					335	
Ser	Arg	Tyr	Val	Arg	Ile	Glu	Val	Leu	Lys	Gln	Arg	Asp	Arg	Gly	Tyr
			340					345					350		
Val	Leu	Ala	Ala	Thr	Asn	Leu	Gly	Tyr	Ser	His	Tyr	Tyr	Ile	Met	Val
		355					360					365			
His	Gln	Ile	Leu	Pro	Asn	Ala	Ile	Val	Pro	Val	Ile	Ser	Leu	Val	Pro
	370					375					380				
Phe	Ala	Met	Met	Ala	Met	Ile	Ser	Cys	Glu	Ala	Gly	Leu	Thr	Phe	Leu
385					390					395					400
Gly	Leu	Gly	Glu	Glu	Ser	Ser	Ala	Ser	Trp	Gly	Asn	Leu	Met	Arg	Glu
			405					410						415	
Gly	Val	Thr	Gly	Phe	Pro	Ala	Glu	Ser	Ala	Val	Leu	Trp	Pro	Pro	Ala
			420				425					430			
Ile	Ile	Leu	Thr	Met	Leu	Leu	Ile	Ala	Ile	Ala	Leu	Ile	Gly	Asp	Gly
	435					440						445			
Val	Arg	Asp	Ala	Leu	Asp	Pro	Arg	Leu	Gln	Asp	Ser				
	450					455					460				

<210>639

<211>510

<212>PRT

<213>Chlamydia pneumoniae

<400>639

Val	Leu	Lys	Tyr	Ile	Leu	Lys	Arg	Leu	Val	Leu	Ile	Pro	Leu	Thr	Leu
1				5					10				15		
Phe	Ala	Ile	Val	Ser	Ile	Asn	Phe	Val	Ile	Leu	Asn	Ala	Ala	Pro	Gly
			20					25				30			
Asp	Val	Leu	Glu	Glu	Lys	Ser	Arg	Asp	Ala	Leu	Gly	Glu	Ala	Gly	Lys
		35					40					45			
Ser	Asp	Lys	Met	Arg	Ser	Tyr	Lys	Gly	Pro	Asp	Arg	Tyr	Leu	Gln	Phe
	50					55					60				
Arg	Glu	His	Tyr	Gly	Leu	Thr	Leu	Pro	Ile	Phe	Phe	Asn	Thr	Arg	Pro
	65				70					75				80	
Lys	Ile	Thr	His	Lys	Lys	Ile	Gln	Thr	Ala	Leu	Gln	Glu	Leu	Ala	Asn
				85					90					95	
Ala	Asn	Asn	Thr	Thr	Pro	Ser	Ala	Lys	Asn	Ala	Ala	Lys	Ser	Leu	Val
			100					105					110		
Tyr	Trp	Gly	Asp	Cys	Ala	Lys	Phe	Val	Met	Pro	Ala	Leu	Leu	Phe	Glu
		115					120					125			
Ala	Asp	Asp	Ala	Ser	Arg	Asp	Asp	Lys	Tyr	Arg	His	Ile	Ala	Ala	Asp
	130					135					140				
Leu	Phe	Ile	Arg	Gly	Gly	Val	Leu	Gln	Gly	Phe	Val	Gly	Pro	Asn	Leu
145					150					155				160	
Ser	Pro	Glu	Gln	Arg	Ala	Gln	Asn	Lys	Glu	Ile	Ala	Glu	Ser	Asn	Ala
				165					170					175	
Phe	Leu	Val	Arg	Gln	Leu	Asn	Glu	Glu	Asp	Leu	Asp	Thr	Lys	Val	Glu
		180					185						190		
Ala	Leu	Lys	Gly	Trp	Phe	Gln	Asp	His	Gly	Gly	Thr	Glu	Val	Phe	Cys
	195						200					205			
Tyr	Ser	Ser	Lys	Gln	Phe	Trp	Lys	Thr	Phe	Phe	Leu	Glu	Thr	Arg	Phe
	210					215					220				
Ala	Arg	Tyr	Met	Ser	Arg	Val	Leu	Arg	Leu	Asp	Phe	Gly	Thr	Leu	Arg
225					230					235				240	
Asn	Asp	Ala	His	Lys	Thr	Val	Ile	Ser	Glu	Val	Ile	Lys	Arg	Leu	Arg
				245					250					255	
Cys	Ser	Leu	Val	Leu	Ser	Ile	Leu	Pro	Met	Ile	Val	Gly	Phe	Val	Leu
		260						265					270		
Cys	Gln	Ile	Phe	Gly	Met	Ile	Met	Ala	Leu	Lys	Arg	Asn	Arg	Trp	Ile
	275						280					285			
Asp	His	Ser	Leu	Asn	Phe	Ile	Phe	Leu	Ile	Leu	Phe	Ser	Ile	Pro	Val
	290					295					300				
Phe	Val	Ala	Val	Pro	Trp	Ile	Leu	Asp	Asn	Phe	Val	Ile	Asn	Lys	Thr
305					310					315				320	
Ile	Pro	Phe	Thr	Thr	Ile	Pro	Met	Pro	Tyr	Ser	Gly	Leu	Arg	Ser	Pro

325 330 335
 Pro Glu Val Phe Asn Glu Leu Ser Thr Leu Gly Arg Ile Phe Asp Leu
 340 345 350
 Val Ser His Gly Phe Leu Pro Phe Cys Ala Val Ser Tyr Gly Ala Leu
 355 360 365
 Ala Ala Gln Ser Arg Leu Ser Arg Ser Ile Phe Leu Glu Val Leu Ser
 370 375 380
 Gln Asp Phe Ile Cys Ala Ala Lys Ala Arg Gly Leu Arg Trp Phe Asp
 385 390 395 400
 Ile Leu Tyr Lys His Val Gly Lys Asn Ala Ala Val Ser Ile Val Thr
 405 410 415
 Ser Leu Ala Ser Ser Phe Arg Asn Val Thr Trp Arg Gly Val Gly Cys
 420 425 430
 Arg Asn Pro Ile Gln Tyr Arg Trp Leu Trp Glu Leu Leu Leu Ser Gly
 435 440 445
 Asn Phe Lys Ser Arg Ser Gln Cys Ser Ser Ile Phe Cys Ala Cys Arg
 450 455 460
 Ile Gly Ser Ile Phe Ser Gly Ile Phe Ala Arg Arg Tyr Leu Leu Arg
 465 470 475 480
 Thr Leu Arg Ser Ser Ser Ser Ala Arg Gly Lys Glu Asp Ile Asn Ala
 485 490 495
 Glu Ala Ser Phe Leu Leu Ser Thr Phe Ser Ile Cys Leu Leu
 500 505 510

<210>640

<211>713

<212>PRT

<213>Chlamydia pneumoniae

<400>640

Lys Arg Arg Glu Ser Gly His Met Tyr Lys Arg Cys Val Leu Asp Lys
 1 5 10 15
 Ile Leu Lys Gly Ile Val Ala Gly Ser Leu Ile Leu Leu Tyr Trp Ser
 20 25 30
 Ser Asp Leu Leu Glu Arg Asp Ile Lys Ser Ile Lys Gly Asn Val Arg
 35 40 45
 Asp Ile Gln Glu Asp Ile Arg Glu Ile Ser Arg Val Val Lys Gln Gln
 50 55 60
 Gln Thr Ser Gln Ala Ile Pro Ala Ala Pro Gly Val Met Leu Ala Pro
 65 70 75 80
 Lys Leu Val Arg Asp Glu Ala Phe Ala Leu Leu Phe Gly Asp Pro Ser
 85 90 95
 Tyr Pro Asn Leu Leu Ser Leu Asp Pro Tyr Lys Gln Gln Thr Leu Pro
 100 105 110
 Glu Leu Leu Gly Thr Asn Phe His Pro His Gly Ile Leu Arg Thr Ala
 115 120 125
 His Val Gly Lys Pro Glu Xaa Leu Ser Leu Leu Met Ala Leu Ile Cys
 130 135 140
 Arg Gly Leu Leu Arg Ser Leu Tyr Ser Ser Leu Ala Ser Pro His Val
 145 150 155 160
 Gly Lys Tyr Glu Glu Phe Ser Pro Asp Leu Ala Val Lys Ile Glu Glu
 165 170 175
 His Leu Val Glu Asp Gly Ser Gly Asp Lys Glu Phe His Ile Tyr Leu
 180 185 190
 Arg Pro Asn Val Phe Trp Arg Pro Ile Asp Pro Lys Ala Leu Pro Lys
 195 200 205
 His Val Gln Leu Asp Glu Val Phe Gln Arg Pro His Pro Val Thr Ala
 210 215 220
 His Asp Ile Lys Phe Phe Tyr Asp Ala Val Met Asn Pro Tyr Val Ala
 225 230 235 240
 Thr Met Arg Ala Val Ala Leu Arg Ser Cys Tyr Glu Asp Val Val Ser
 245 250 255
 Val Ser Val Glu Asn Asp Leu Lys Leu Val Val Arg Trp Lys Ala His
 260 265 270
 Thr Val Ile Asn Glu Glu Gly Lys Glu Glu Arg Lys Val Leu Tyr Ser
 275 280 285

Ala Phe Ser Asn Thr Leu Ser Leu Gln Pro Leu Pro Arg Phe Val Tyr
 290 295 300
 Gln Tyr Phe Ala Asn Gly Glu Lys Ile Ile Glu Asp Glu Asn Ile Asp
 305 310 315 320
 Thr Tyr Arg Thr Asn Ser Ile Trp Ala Gln Asn Phe Thr Met His Trp
 325 330 335
 Ala Asn Asn Tyr Ile Val Ser Cys Gly Ala Tyr Tyr Phe Ala Gly Met
 340 345 350
 Asp Asp Glu Lys Ile Val Phe Ser Arg Asn Pro Asp Phe Tyr Asp Pro
 355 360 365
 Leu Ala Ala Leu Ile Asp Lys Arg Phe Val Tyr Phe Lys Glu Ser Thr
 370 375 380
 Asp Ser Leu Phe Gln Asp Phe Lys Thr Gly Lys Ile Asp Ile Ser Tyr
 385 390 395 400
 Leu Pro Pro Asn Gln Arg Asp Asn Phe Tyr Ser Phe Met Lys Ser Ser
 405 410 415
 Ala Tyr Asn Lys Gln Val Ala Lys Gly Gly Ala Val Arg Glu Thr Val
 420 425 430
 Ser Ala Asp Arg Ala Tyr Thr Tyr Ile Gly Trp Asn Cys Phe Ser Leu
 435 440 445
 Phe Phe Gln Ser Arg Gln Val Arg Cys Ala Met Asn Met Ala Ile Asp
 450 455 460
 Arg Glu Arg Ile Ile Glu Gln Cys Leu Asp Gly Gln Gly Tyr Thr Ile
 465 470 475 480
 Ser Gly Pro Phe Ala Ser Ser Ser Pro Ser Tyr Asn Lys Gln Ile Glu
 485 490 495
 Gly Trp His Tyr Ser Pro Glu Glu Ala Ala Arg Leu Leu Glu Glu Glu
 500 505 510
 Gly Trp Ile Asp Thr Asp Gly Asp Gly Ile Arg Glu Lys Val Ile Asp
 515 520 525
 Gly Val Ile Val Pro Phe Arg Phe Arg Leu Cys Tyr Tyr Val Lys Ser
 530 535 540
 Val Thr Ala His Thr Ile Ala Asp Tyr Val Ala Thr Ala Cys Lys Glu
 545 550 555 560
 Ile Gly Ile Glu Cys Ser Leu Leu Gly Leu Asp Met Ala Asp Leu Ser
 565 570 575
 Gln Ala Phe Asp Glu Lys Asn Phe Asp Ala Leu Leu Met Gly Trp Cys
 580 585 590
 Leu Gly Ile Pro Pro Glu Asp Pro Arg Ala Leu Trp His Ser Glu Gly
 595 600 605
 Ala Met Glu Lys Gly Ser Ala Asn Val Val Gly Phe His Asn Glu Glu
 610 615 620
 Ala Asp Lys Ile Ile Asp Arg Leu Ser Tyr Glu Tyr Asp Leu Lys Glu
 625 630 635 640
 Arg Asn Arg Leu Tyr His Arg Phe His Glu Ile Ile His Glu Glu Ala
 645 650 655
 Pro Tyr Ala Phe Leu Phe Ser Arg His Cys Ser Leu Leu Tyr Lys Asp
 660 665 670
 Tyr Val Lys Asn Ile Phe Val Pro Thr His Arg Thr Asp Leu Ile Pro
 675 680 685
 Glu Ala Gln Asp Glu Thr Val Asn Val Thr Met Val Trp Leu Glu Lys
 690 695 700
 Lys Glu Asp Pro Cys Leu Ser Thr Ser
 705 710

<210>641

<211>210

<212>PRT

<213>Chlamydia pneumoniae

<400>641

Gln Phe Pro Arg Ile His Ala Asp Asp Ile Ile Asn Ser Met Asp Glu
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 Ile Thr Pro Asn Tyr Pro Leu Leu Arg Gln Asp Ser Leu Trp Asn Arg
 20 25 30
 Val Arg Val Ser Trp Arg Ala Asp Leu Ser Val Ser Ser Arg Tyr Glu

35 40 45
 Ile Ala Ser Ala Ile Ala Ile Leu Gly Leu Leu Val Ala Phe Cys Ala
 50 55 60
 Ser Ala Ala Val Ser Ile Ile Phe Thr Ala Asn Pro Ser Cys Ser Gly
 65 70 75 80
 Ile Tyr Arg Trp Leu Phe Gly Phe Arg Ala Phe Thr Tyr Pro Ile Gly
 85 90 95
 Tyr Arg Ser Thr Asn His Arg Asn Tyr Ser Phe Thr Leu Trp Tyr Leu
 100 105 110
 Leu Val Ser Ser Thr Thr Arg Val Ile Thr Leu Ser Ile Cys Phe Tyr
 115 120 125
 Thr Phe Tyr Leu Gln Ile Ile Phe Leu Phe Leu Tyr Ser Ala Trp Lys
 130 135 140
 Pro Leu Arg Gln Pro Leu Phe Cys His Arg Leu Leu Ile Ile Trp Pro
 145 150 155 160
 Ile Ser Gly Leu Ser Cys Arg Ile Leu Asn Lys Glu Asn Lys Asn Glu
 165 170 175
 Lys Ile Asn Val Ser Pro Ser Phe Ser Ser Cys Ala Ser Cys Cys Arg
 180 185 190
 Phe Cys Phe Trp Ile Arg Ile Leu Phe Ser Thr Thr Arg Arg Ser Ser
 195 200 205
 Arg Phe
 210
 <210>642
 <211>338
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>642
 Asp Ser Gly Phe Met Lys Pro Leu Gly Phe Gln Glu Asn Leu Glu Ala
 1 5 10 15
 Leu Cys Asn Lys Thr Ser Arg Gln Leu Leu Lys Tyr Leu Ile Lys Gln
 20 25 30
 Ile Leu Phe Val Cys Gly Ala Ser Leu Leu Ile Ala Leu Glu Phe Ser
 35 40 45
 Phe Phe Leu Tyr Phe Phe Leu Phe Ser Gly Lys Thr Val Ile Pro Ala
 50 55 60
 Phe Cys Leu Ala Cys Phe Phe Leu Thr Leu Phe Val Cys Leu Val Thr
 65 70 75 80
 Arg Leu Tyr Leu Leu Ser Gly Lys Gly Asp Phe Phe Glu Asp Leu Ala
 85 90 95
 Ser Glu Tyr Leu Gln Gly Ala Val Pro Pro Asn Lys Arg Ser Gln Asn
 100 105 110
 Ile Val Glu Glu Gln Ser His Leu Ala Ala Ala Ala Thr Lys Leu Ser
 115 120 125
 Ile Asn Leu Gln Asn Gln Glu Tyr Ser Leu Leu Ser Glu Ile Phe Lys
 130 135 140
 Phe Leu Pro Lys His Asp Leu Ile Arg Lys Phe Ser Cys Phe Cys Phe
 145 150 155 160
 Trp Lys Asp Tyr Phe Leu Phe Arg Glu Cys Leu Leu Gln Lys Ala Ile
 165 170 175
 Glu Ala Tyr Ile Lys Val Val Gln Ala Ile Pro Val Asp Leu Ser Ala
 180 185 190
 His Val Ser Leu Ala Asp Ala Tyr Val Ala Leu Ser Gly Leu Tyr Ala
 195 200 205
 Asp Pro Arg Lys Tyr Pro Glu Phe Asp Ala Asn Tyr Trp Ile Pro Ser
 210 215 220
 Gly Arg Tyr Ser Ala Glu Ile Gln Glu Lys Phe Phe Ala Thr Ala Arg
 225 230 235 240
 Arg Ala Ile Glu Glu Phe Gln Ile Leu Asn Glu Tyr Ala Pro Gly Asn
 245 250 255
 Ala Trp Val His Ala Gln Leu Ala Tyr Ser Tyr His Asp Leu Gln Met
 260 265 270
 Pro Met Glu Glu Ile Gln Glu Tyr Glu Ile Val Leu Lys Leu Lys Pro
 275 280 285

Asn Asp Val Glu Thr Met Ser Lys Leu Gly Ile Leu Tyr Phe Gln Gln
 290 295 300
 Gly Met Asn Ala Lys Gly Leu Arg Ile Tyr Glu Glu Ile Lys Lys Arg
 305 310 315 320
 Asp Tyr Lys Lys Ser Gln Lys Leu Ile Lys Phe Tyr Gly Val Glu Tyr
 325 330 335
 Lys Tyr
 <210>643
 <211>350
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>643
 Trp Lys Ile Met Arg Leu Ile Val Leu Met Gln Cys Leu Val Ser Leu
 1 5 10 15
 Phe Leu Ala Lys Lys Val Thr Val Thr Pro Ala Tyr Leu Leu Ala
 20 25 30
 Asn Phe Gly Gly Pro Arg His Ala Lys Asp Leu Gln Glu Phe Leu Ile
 35 40 45
 Ser Leu Leu Thr Asp Arg Asp Val Thr Gly Thr Phe Leu Pro Arg Val
 50 55 60
 Leu His Arg His Leu Phe Thr Phe Ile Ala Lys Lys Arg Val Pro Lys
 65 70 75 80
 Val Leu Pro Gln Tyr Gln Ser Leu Gln Asn Trp Ser Pro Ile Tyr Phe
 85 90 95
 Asp Thr Glu Thr Leu Ala Lys Thr Leu Ser Glu Ile Leu Arg Ala Pro
 100 105 110
 Val Ile Pro Phe His Arg Tyr Leu Pro Ser Thr His Glu Lys Thr Leu
 115 120 125
 Leu Ala Leu Arg Thr Leu His Thr Arg His Val Ile Gly Ile Pro Leu
 130 135 140
 Phe Pro His Phe Thr Tyr Ser Val Thr Gly Ser Ile Val Arg Phe Phe
 145 150 155 160
 Met Lys His Val Pro Glu Ile Pro Ile Ser Trp Ile Pro Gln Phe Gly
 165 170 175
 Ser Asp Ser Lys Phe Val Ser Leu Ile Thr Cys His Ile Arg Asp Phe
 180 185 190
 Leu Gln Lys Leu Gly Ile Leu Glu Lys Glu Cys Cys Phe Leu Phe Ser
 195 200 205
 Val His Gly Leu Pro Val Arg Tyr Ile Ser Gln Gly Asp Pro Tyr Ser
 210 215 220
 Lys Gln Cys Tyr Glu Ser Phe Ser Ala Ile Thr Thr Asn Phe Lys Gln
 225 230 235 240
 Ser Glu Asn Phe Leu Cys Phe Gln Ser Lys Phe Gly Pro Gly Lys Trp
 245 250 255
 Leu Ser Pro Ser Thr Ala Gln Leu Cys Gln Asn Ile Asp Thr Asp Lys
 260 265 270
 Pro Asn Val Ile Val Val Pro Phe Gly Phe Ile Ser Asp His Leu Glu
 275 280 285
 Thr Leu Tyr Glu Ile Glu Arg Asp Tyr Leu Pro Leu Leu Arg Ser Arg
 290 295 300
 Gly Tyr Arg Ala Leu Arg Ile Pro Ala Ile Tyr Ser Ser Pro Leu Trp
 305 310 315 320
 Val Ser Thr Leu Val Asp Ile Val Lys Glu Asn Ser Thr Val Val Ala
 325 330 335
 Glu Glu Leu Ile Lys Ser Gly Lys Lys His Thr Gly Ile Arg
 340 345 350
 <210>644
 <211>257
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>644
 Asn Ser Glu Ala Gln Leu Asn Val Lys Ile Lys Phe Ser Trp Lys Val
 1 5 10 15

Asn Phe Leu Ile Cys Leu Leu Ala Val Gly Leu Ile Phe Phe Gly Cys
 20 25 30
 Ser Arg Val Lys Arg Glu Val Leu Val Gly Arg Asp Ala Thr Trp Phe
 35 40 45
 Pro Lys Gln Phe Gly Ile Tyr Thr Ser Asp Thr Asn Ala Phe Leu Asn
 50 55 60
 Asp Leu Val Ser Glu Ile Asn Tyr Lys Glu Asn Leu Asn Ile Asn Ile
 65 70 75 80
 Val Asn Gln Asp Trp Val His Leu Phe Glu Asn Leu Asp Asp Lys Lys
 85 90 95
 Thr Gln Gly Ala Phe Thr Ser Val Leu Pro Thr Leu Glu Met Leu Glu
 100 105 110
 His Tyr Gln Phe Ser Asp Pro Ile Leu Leu Thr Gly Pro Val Leu Val
 115 120 125
 Val Ala Gln Asp Ser Pro Tyr Gln Ser Ile Glu Asp Leu Lys Gly Arg
 130 135 140
 Leu Ile Gly Val Tyr Lys Phe Asp Ser Ser Val Leu Val Ala Gln Asn
 145 150 155 160
 Ile Pro Asp Ala Val Ile Ser Leu Tyr Gln His Val Pro Ile Ala Leu
 165 170 175
 Glu Ala Leu Thr Ser Asn Cys Tyr Asp Ala Leu Leu Ala Pro Val Ile
 180 185 190
 Glu Val Thr Ala Leu Ile Glu Thr Ala Tyr Lys Gly Arg Leu Lys Ile
 195 200 205
 Ile Ser Lys Pro Leu Asn Ala Asp Gly Leu Arg Leu Ala Ile Leu Lys
 210 215 220
 Gly Thr Asn Gly Asp Leu Leu Glu Gly Phe Asn Ala Gly Leu Val Lys
 225 230 235 240
 Thr Arg Arg Ser Gly Lys Tyr Asp Ala Ile Lys Gln Arg Tyr Arg Leu
 245 250 255
 Pro

<210>645

<211>196

<212>PRT

<213>Chlamydia pneumoniae

<400>645

Leu Arg Lys Leu Cys Ser Ser Arg Gly Asp Val Arg Ile Leu Ala Gly
 1 5 10 15
 Lys Tyr Lys Gly Lys Ser Leu Lys Thr Phe Ser Asn Pro His Ile Arg
 20 25 30
 Pro Thr Ser Gly Leu Val Lys Glu Ala Phe Phe Ser Ile Cys Arg Glu
 35 40 45
 Asp Ile Glu Gly Ala Ala Phe Leu Asp Leu Phe Ala Gly Met Gly Ala
 50 55 60
 Ile Gly Phe Glu Ala Leu Ser Arg Gly Ala Ala Ser Val Val Phe Val
 65 70 75 80
 Asp Ile Ser Ile Lys Ala Ile Gln Leu Ile His Thr Asn Ser Ala Leu
 85 90 95
 Leu Gly Glu Gln Leu Pro Val Val Ile Phe Arg Gln Asp Ala Gln Ser
 100 105 110
 Ala Ile Gln Arg Leu Ile Lys Gln Lys Arg Ser Phe Asp Leu Ile Tyr
 115 120 125
 Ile Asp Pro Pro Tyr Glu Leu Cys Asn Cys Tyr Val Glu Thr Leu Leu
 130 135 140
 Gln Lys Ile Val Ser Gly Asn Ile Leu Asn Pro Glu Gly Thr Leu Phe
 145 150 155 160
 Leu Glu Asn Ala Ser Asp Glu Glu Ile Ala Cys Glu Gly Leu Thr Leu
 165 170 175
 Arg Arg Arg Arg Lys Leu Gly Lys Thr Tyr Leu Ala Glu Tyr Ile Val
 180 185 190
 Glu Lys Asp Pro
 195
 <210>646

<211>262

<212>PRT

<213>Chlamydia pneumoniae

<400>646

Ser Ser Tyr Ser Arg Arg Gln Leu Arg Phe Tyr Thr Gly Ser Leu Gln
1 5 10 15
Met His Ile Tyr Gly Leu Ala Asp Leu His Leu Ala Leu Gly Val Pro
20 25 30
Glu Lys Thr Met Glu Val Phe Gly Asp Pro Trp Ile Gly Tyr His Gln
35 40 45
Lys Ile Cys Ser Glu Trp Gln Ala Val Val His Pro Glu Asp Ile Val
50 55 60
Leu Leu Pro Gly Asp Ile Ser Trp Ala Met Asn Leu Ser Glu Ala His
65 70 75 80
Lys Asp Phe Ala Phe Ile Gly Asp Leu Pro Gly Thr Lys Tyr Met Ile
85 90 95
Arg Gly Asn His Asp Tyr Trp Ser Ser Ala Ser Thr Ser Lys Ile Leu
100 105 110
Gln Ala Leu Pro Pro Ser Leu Tyr Tyr Leu Asn Gln Gly Phe Ala Leu
115 120 125
Leu Thr Pro His Leu Ala Val Val Gly Val Arg Leu Trp Asp Ser Pro
130 135 140
Thr Ile Cys Val Lys Lys Glu Asn Phe Leu Thr Pro Ser Thr Gln Glu
145 150 155 160
Gln Ser Tyr Thr Glu Gln Asp Glu Lys Ile Phe Leu Arg Glu Leu Gly
165 170 175
Arg Leu Lys Arg Ala Phe Ala Ala Leu Pro Lys Glu Val Thr Glu Val
180 185 190
Ile Val Met Thr His Tyr Pro Pro Ile Ser Ser Asp Gly Thr Pro Gly
195 200 205
Pro Ile Ser Glu Phe Leu Glu Ala Asp Gly Arg Val Ser Leu Cys Leu
210 215 220
Phe Gly His Ile His Lys Val Gln Arg Pro Ile Asp Gly Phe Gly Asn
225 230 235 240
Ile Arg Gly Ile His Tyr Ile Leu Val Ala Ala Asp Tyr Val Asn Phe
245 250 255
Val Pro Gln Glu Val Met
260

<210>647

<211>330

<212>PRT

<213>Chlamydia pneumoniae

<400>647

Pro Asn Leu Val Ser Gly Tyr Ala Asp Ala Ile Arg Lys Asn Leu Leu
1 5 10 15
Tyr Phe Glu Asp Thr Glu Ile Glu Tyr Phe Leu Ile Leu Ser Gly Asp
20 25 30
Gln Leu Tyr Asn Met Asp Phe Arg Ser Ile Val Asp Thr Ala Ile Arg
35 40 45
Thr His Val Asp Met Val Leu Val Ala Gln Pro Ile Pro Glu Lys Asp
50 55 60
Ala Tyr Arg Met Gly Val Leu Asp Ile Asp Ser Glu Gly Lys Leu Ile
65 70 75 80
Asp Phe Tyr Glu Lys Pro Gln Glu Lys Glu Val Leu Lys Arg Phe Gln
85 90 95
Leu Ser Ser Glu Asp Arg Arg Ile His Lys Leu Thr Glu Asp Ser Gly
100 105 110
Asp Phe Leu Gly Ser Met Gly Ile Tyr Leu Phe Arg Arg Asp Ser Leu
115 120 125
Phe Ser Leu Leu Arg Glu Glu Glu Gly Asn Asp Phe Gly Lys His Leu
130 135 140
Ile Gln Ala Gln Met Lys Arg Gly Gln Val Gln Thr Leu Leu Tyr Asn
145 150 155 160
Gly Tyr Trp Ala Asp Ile Gly Thr Ile Glu Ser Tyr Tyr Glu Ala Asn

165 170 175
 Ile Ala Leu Thr Gln Lys Pro His Ala Glu Lys Arg Gly Leu Asn Cys
 180 185 190
 Tyr Asp Asp Asn Gly Met Ile Tyr Ser Lys Asn His His Leu Pro Gly
 195 200 205
 Ala Ile Ile Thr Asp Ser Met Ile Ser Ser Ser Leu Leu Cys Glu Gly
 210 215 220
 Cys Val Ile Asn Thr Ser His Val Ser Arg Ser Val Leu Gly Ile Arg
 225 230 235 240
 Ser Lys Ile Gly Glu Asn Ser Val Val Asp Gln Ser Ile Ile Met Gly
 245 250 255
 Asn Ala Arg Tyr Gly Ser Pro Ser Met Pro Ser Leu Gly Ile Gly Lys
 260 265 270
 Asp Cys Glu Ile Arg Lys Ala Ile Ile Asp Glu Asn Cys Cys Ile Gly
 275 280 285
 Asn Gly Val Lys Leu Gln Asn Leu Lys Gly Tyr Ile Lys Tyr Asp Ser
 290 295 300
 Pro Asp Lys Lys Leu Phe Val Arg Asp Asn Ile Ile Ile Val Pro Gln
 305 310 315 320
 Gly Thr His Ile Pro Asp Asn Tyr Ile Phe
 325 330

<210>648

<211>225

<212>PRT

<213>Chlamydia pneumoniae

<400>648

Val Ser Phe Leu Tyr Phe Val Lys Asn Gly Arg Arg Leu Trp Arg Met
 1 5 10 15
 Met Asn Tyr Glu Asp Ala Lys Leu Arg Gly Gln Ala Val Ala Ile Leu
 20 25 30
 Tyr Gln Ile Gly Ala Ile Lys Phe Gly Lys His Ile Leu Ala Ser Gly
 35 40 45
 Glu Glu Thr Pro Leu Tyr Val Asp Met Arg Leu Val Ile Ser Ser Pro
 50 55 60
 Glu Val Leu Gln Thr Val Ala Thr Leu Ile Trp Arg Leu Arg Pro Ser
 65 70 75 80
 Phe Asn Ser Ser Leu Leu Cys Gly Val Pro Tyr Thr Ala Leu Thr Leu
 85 90 95
 Ala Thr Ser Ile Ser Leu Lys Tyr Asn Ile Pro Met Val Leu Arg Arg
 100 105 110
 Lys Glu Leu Gln Asn Val Asp Pro Ser Asp Ala Ile Lys Val Glu Gly
 115 120 125
 Leu Phe Thr Pro Gly Gln Thr Cys Leu Val Ile Asn Asp Met Val Ser
 130 135 140
 Ser Gly Lys Ser Ile Ile Glu Thr Ala Val Ala Leu Glu Glu Asn Gly
 145 150 155 160
 Leu Val Val Arg Glu Ala Leu Val Phe Leu Asp Arg Arg Lys Glu Ala
 165 170 175
 Cys Gln Pro Leu Gly Pro Gln Gly Ile Lys Val Ser Ser Val Phe Thr
 180 185 190
 Val Pro Thr Leu Ile Lys Ala Leu Ile Ala Tyr Gly Lys Leu Ser Ser
 195 200 205
 Gly Asp Leu Thr Leu Ala Asn Lys Ile Ser Glu Ile Leu Glu Ile Glu
 210 215 220

Ser

225

<210>649

<211>464

<212>PRT

<213>Chlamydia pneumoniae

<400>649

Met Lys Glu Glu Arg Ser Ser Glu Ile Leu Pro Arg Val Lys Glu Thr
 1 5 10 15
 Lys Lys His Ala Tyr Val Ser Met Gln Glu Lys Ser Cys Val Gly Glu

Lys Leu Gly Arg Met Leu Lys Leu Leu Lys Val Ser Ile Thr Gly Asp
 35 40 45
 Leu Ser Ser Gly Lys Thr Glu Ala Cys Gln Val Phe Gln Glu Leu Gly
 50 55 60
 Ala Tyr Val Val Ser Ala Asp Glu Ile Ser His Ser Phe Leu Ile Pro
 65 70 75 80
 His Thr Arg Ile Gly Arg Arg Val Ile Asp Leu Leu Gly Ser Asp Val
 85 90 95
 Val Val Asp Gly Ala Phe Asp Ala Gln Ala Ile Ala Ala Lys Val Phe
 100 105 110
 Tyr Asn Ser Val Leu Leu Gln Gly Leu Glu Ala Ile Leu His Pro Glu
 115 120 125
 Val Cys Arg Ile Ile Glu Glu Gln Tyr His Gln Ser Ile Gln Asp Gly
 130 135 140
 Asn Tyr Pro Phe Phe Val Ala Glu Val Pro Leu Leu Tyr Glu Ile His
 145 150 155 160
 Tyr Ala Lys Trp Phe Asp Ser Val Ile Leu Val Met Ala Asn Glu Asp
 165 170 175
 Ile Arg Arg Glu Arg Phe Met Lys Lys Thr Gly Arg Ser Ser Glu Asp
 180 185 190
 Phe Asp Gln Arg Cys Ser Arg Phe Leu Asn Val Glu Glu Lys Leu Ala
 195 200 205
 Gln Ala Asp Val Val Val Glu Asn Asn Gly Thr Lys Lys Glu Leu His
 210 215 220
 Gln Lys Ile Glu Glu Tyr Phe Tyr Ala Leu Lys Gly Ala Leu
 225 230 235

<210>651

<211>870

<212>PRT

<213>Chlamydia pneumoniae

<400>651

Met Lys Lys Leu Phe Val Leu Asp Ala Ser Gly Phe Ile Phe Arg Ala
 1 5 10 15
 Tyr Phe Ala Leu Pro Glu Met Lys Asn His Gln Gly Gln Ala Thr Gln
 20 25 30
 Ala Val Phe Gly Phe Ile Arg Ser Leu Asn Lys Leu Ile Lys Glu Phe
 35 40 45
 Ser Pro Glu Tyr Met Ile Ser Val Phe Asp Gly Pro Asn Asn Lys Gln
 50 55 60
 Ser Arg Gln Ala Ile Tyr Ala Asp Tyr Lys Ser Asn Arg Gln Lys Lys
 65 70 75 80
 Phe Glu Asp Ile Pro Pro Gln Ile Ala Leu Val Lys Glu Tyr Cys Ser
 85 90 95
 Leu Ile Gly Leu Ala Tyr Leu Glu Lys Glu Ser Val Glu Ala Asp Asp
 100 105 110
 Val Ile Ala Ser Ile Ala Lys Lys Ala Arg Glu Glu Asn Tyr Lys Val
 115 120 125
 Tyr Val Cys Thr Ala Asp Lys Asp Leu Leu Gln Leu Val Asn Asp His
 130 135 140
 Val Val Ala Trp Asn Pro Trp Ala Asp Gln Gly Val Val Gly Ile Ser
 145 150 155 160
 Glu Val Ile Glu Arg Tyr Gly Ile Pro Pro Gly Asn Ile Pro Asp Tyr
 165 170 175
 Leu Ala Leu Val Gly Asp Ser Ser Asp Asn Ile Pro Gly Leu Pro Gly
 180 185 190
 Cys Gly Pro Lys Lys Ala Ala Ala Leu Leu Lys Gln Phe Gly Ser Val
 195 200 205
 Glu Gly Leu Leu Glu Asn Leu Asp Ala Val Lys Gly Leu Ser Gln Thr
 210 215 220
 Met Leu Ser Glu Arg Gln Glu Thr Leu Lys Leu Ser Lys Arg Leu Ala
 225 230 235 240
 Leu Leu Asp Ser Asn Ile Pro Ile Pro Val Pro Ile Glu Ser Leu Thr
 245 250 255
 Phe Pro Gln His Pro Val Asp Glu Glu Lys Leu Ile His Phe Tyr Ile

788

770 775 780
 Phe Ala Val Asn Thr Arg Ile Gln Gly Ser Ala Ala Glu Leu Ile Lys
 785 790 795 800
 Leu Ala Met Leu Asp Ile Ser Gln Ala Ile Lys Gln Gln Gln Met Lys
 805 810 815
 Ser Arg Met Leu Leu Gln Ile His Asp Glu Leu Leu Phe Glu Val Pro
 820 825 830
 Glu Glu Glu Ile Glu Glu Met Gln Arg Leu Val Arg Glu Lys Met Glu
 835 840 845
 Ser Ala Met Thr Leu Ser Val Pro Ile Val Val Asn Ile Leu Ile Gly
 850 855 860
 Lys Asn Trp Ala Glu Cys
 865 870
 <210>652
 <211>333
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>652
 Met Lys Thr Leu Trp His Phe Val Ser Lys Ala Phe Leu Ser Ile Val
 1 5 10 15
 Gly Leu Cys Cys Gly Val Val Leu Ala Phe Val Val Ile Phe Ala Leu
 20 25 30
 Ile Ala Ser Ser Leu Gly Asn Gly Asp Ala Thr Phe Val Ser Leu Pro
 35 40 45
 Asp Ala Gln Gly Glu Val Lys Asp Leu Gly Lys Thr Ala Pro Ile Ile
 50 55 60
 Ala Val Ile Glu Met Lys Asp Val Ile Ala Ser Ser Lys Asn Thr Ala
 65 70 75 80
 Lys Thr Ile Gln Asn Ile Leu Glu Gly Phe Glu Lys Ala Pro Leu Lys
 85 90 95
 Asp Arg Val Lys Gly Ile Val Ile Asp Met Asp Cys Pro Gly Gly Glu
 100 105 110
 Val Phe Glu Ile Asp Arg Ile Tyr Ser Met Leu Arg Phe Trp Lys Glu
 115 120 125
 Arg Lys Gly Phe Pro Ile Tyr Ile Tyr Val Asn Gly Leu Cys Ala Ser
 130 135 140
 Gly Gly Tyr Tyr Val Ser Cys Ala Ala Thr Lys Ile Tyr Ala Thr Ser
 145 150 155 160
 Ser Ser Leu Ile Gly Ser Ile Gly Val Arg Ser Gly Pro Phe Phe Asn
 165 170 175
 Val Lys Glu Gly Leu Asn Arg Tyr Gly Val Glu Ser Asp Leu Leu Thr
 180 185 190
 Ala Gly Lys Asp Lys Ala Pro Met Asn Pro Tyr Thr Pro Trp Thr Ser
 195 200 205
 His Asp Arg Glu Glu Arg Gln Ala Thr Leu Asp Phe Leu Tyr Gly Gln
 210 215 220
 Phe Val Asp Ile Val Thr Gln Asn Arg Pro Leu Leu Thr Lys Glu Lys
 225 230 235 240
 Leu Val His Thr Leu Gly Ala Arg Ile Phe Ser Pro Glu Lys Ala Lys
 245 250 255
 Gln Glu Gly Tyr Ile Asp Val Val Gly Ala Thr Lys Glu Gln Val Leu
 260 265 270
 Gln Asp Ile Val Ala Val Cys Lys Ile Glu Asp Asn Tyr Arg Val Ile
 275 280 285
 Gly Ser Gly Gly Asp Gly Trp Trp Lys Arg Val Ala Ser Ala Ala Ala
 290 295 300
 Ser Ser Pro Leu Val Thr Gly Met Ile Lys His Asp Ile Leu Pro Leu
 305 310 315 320
 Ser His Asp Ala Ala Tyr Ile Pro Pro Tyr Leu Ala Leu
 325 330

<210>653

<211>551

<212>PRT

<213>Chlamydia pneumoniae

<400>653

Val	Phe	Ile	Arg	His	Lys	Val	Gly	Lys	Glu	Phe	Met	Gln	Ser	Ser	Glu
1				5					10					15	
Val	Lys	Pro	Phe	Ser	Arg	Leu	Arg	Ala	Tyr	Leu	Cys	Pro	Ile	Tyr	Lys
			20					25					30		
Ser	Glu	Phe	Ser	Lys	Phe	Val	Pro	Leu	Phe	Leu	Leu	Ala	Phe	Phe	Val
		35					40					45			
Gly	Phe	Asn	Tyr	Cys	Leu	Leu	Lys	Asn	Met	Lys	Asp	Thr	Leu	Val	Ile
	50				55						60				
Val	Gly	Ser	Asp	Ala	Gly	Ala	Glu	Val	Ile	Pro	Phe	Leu	Lys	Val	Trp
65					70				75						80
Gly	Ile	Val	Pro	Gly	Ala	Val	Ile	Val	Thr	Met	Val	Tyr	Gly	Trp	Leu
				85					90					95	
Gly	Ser	Arg	Tyr	Pro	Arg	Asp	Thr	Val	Phe	Tyr	Cys	Phe	Met	Ala	Ala
			100					105					110		
Phe	Leu	Gly	Phe	Phe	Phe	Leu	Phe	Ala	Val	Ile	Ile	Tyr	Pro	Val	Gly
		115					120					125			
Asp	Ser	Leu	His	Leu	Asn	Ser	Leu	Ala	Asp	Lys	Leu	Gln	Glu	Leu	Leu
	130					135					140				
Pro	Gln	Gly	Leu	Arg	Gly	Phe	Ile	Val	Met	Val	Arg	Tyr	Trp	Ser	Tyr
145					150					155					160
Ser	Ile	Tyr	Tyr	Val	Met	Ser	Glu	Leu	Trp	Ser	Ser	Val	Val	Leu	Ser
				165					170					175	
Met	Leu	Phe	Trp	Gly	Leu	Ala	Asn	Gln	Ile	Thr	Thr	Ile	Thr	Glu	Ala
			180					185					190		
Gly	Arg	Phe	Tyr	Ala	Leu	Ile	Asn	Thr	Gly	Leu	Asn	Leu	Ser	Ser	Ile
	195						200					205			
Cys	Ala	Gly	Glu	Ile	Ser	Tyr	Trp	Met	Gly	Lys	Gln	Thr	Phe	Val	Ala
	210					215					220				
Tyr	Ser	Phe	Ala	Cys	Asp	Ser	Trp	His	Ser	Val	Met	Leu	Asn	Leu	Thr
225					230					235					240
Met	Leu	Ile	Thr	Cys	Ser	Gly	Leu	Ile	Met	Ile	Trp	Leu	Tyr	Arg	Arg
				245					250					255	
Ile	His	His	Leu	Thr	Ile	Asp	Thr	Ser	Ile	Pro	Pro	Ser	Arg	Arg	Val
			260					265					270		
Leu	Ala	Glu	Glu	Gly	Ala	Ala	Thr	Ala	Asn	Leu	Lys	Glu	Lys	Lys	Lys
		275						280				285			
Pro	Lys	Ala	Lys	Ala	Arg	Asn	Leu	Phe	Leu	His	Leu	Ile	Gln	Ser	Arg
	290					295					300				
Tyr	Leu	Leu	Gly	Leu	Ala	Ile	Ile	Val	Leu	Ser	Tyr	Asn	Leu	Val	Ile
305					310					315					320
His	Leu	Phe	Glu	Val	Val	Trp	Lys	Asp	Gln	Val	Ser	Gln	Ile	Tyr	Ser
			325						330					335	
Ser	His	Val	Glu	Phe	Asn	Gly	Tyr	Met	Ser	Arg	Ile	Thr	Thr	Leu	Ile
			340					345					350		
Gly	Val	Val	Ser	Val	Leu	Ala	Ala	Val	Leu	Leu	Thr	Gly	Gln	Cys	Ile
		355					360					365			
Arg	Lys	Trp	Gly	Trp	Thr	Val	Gly	Ala	Leu	Val	Thr	Pro	Leu	Val	Met
	370					375					380				
Leu	Val	Ser	Gly	Leu	Leu	Phe	Phe	Gly	Thr	Ile	Phe	Ala	Ala	Lys	Arg
385					390				395						400
Asp	Ile	Ser	Ile	Phe	Gly	Gly	Val	Leu	Gly	Met	Thr	Pro	Leu	Ala	Leu
				405					410					415	
Ala	Ala	Trp	Thr	Gly	Gly	Met	Gln	Asn	Val	Leu	Ser	Arg	Gly	Thr	Lys
			420					425					430		
Phe	Thr	Phe	Asp	Gln	Thr	Lys	Glu	Met	Ala	Phe	Ile	Pro	Leu	Ser	
		435					440					445			
Pro	Glu	Asp	Lys	Asn	His	Gly	Lys	Ala	Ala	Ile	Asp	Gly	Val	Val	Ser
	450					455					460				
Arg	Ile	Gly	Lys	Ser	Gly	Gly	Ser	Leu	Ile	Tyr	Gln	Gly	Leu	Leu	Val
465					470					475					480
Ile	Phe	Ser	Ser	Val	Ala	Ala	Ser	Leu	Asn	Val	Ile	Ala	Leu	Val	Leu
				485					490					495	
Leu	Ile	Ile	Met	Val	Val	Trp	Ile	Ala	Val	Val	Ala	Tyr	Ile	Gly	Lys

500 505 510
 Glu Tyr Tyr Ser Arg Ala Ala Asp Ala Val Ala Thr Leu Lys Gln Pro
 515 520 525
 Lys Glu Pro Ser Ser Ser Ile Val Arg Glu Ala Gln Glu Ser Val Glu
 530 535 540
 Gln Glu Glu Met Ala Val Leu
 545 550
 <210>654
 <211>377
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>654
 Ile Thr Leu Ala Glu Phe Ala Gly Thr Xaa Ala Tyr Leu Glu Glu Tyr
 1 5 10 15
 Val Asp Ile Ile Arg Ser Lys Ser Ile Leu Arg Lys Met Ile Ser Thr
 20 25 30
 Ala Lys Glu Ile Glu Lys Arg Ala Leu Glu Gln Pro Lys Asn Val Ala
 35 40 45
 Glu Ala Leu Asp Glu Ala Gln Asn Ser Phe Phe Lys Ile Ser Gln Ser
 50 55 60
 Thr Ser Val Ser Gln Tyr Thr Leu Val Ala Asp Lys Leu Arg Gly Leu
 65 70 75 80
 Thr Thr Thr Thr Asp Lys Pro Tyr Leu Val Gln Leu Gln Glu Arg Gln
 85 90 95
 Glu Leu Phe Leu Gln Asn Ala Gln Gly Asp Asn Lys Ser Phe Phe Thr
 100 105 110
 Gly Ile Pro Thr His Phe Ile Asp Leu Asp Gln Leu Ile His Gly Phe
 115 120 125
 Ser Pro Ser Asn Leu Met Ile Leu Ala Ala Arg Pro Ala Met Gly Lys
 130 135 140
 Thr Ala Leu Ala Leu Asn Ile Ala Glu Asn Leu Cys Phe Gln Asn Arg
 145 150 155 160
 Leu Pro Ile Gly Ile Phe Ser Leu Glu Met Thr Val Asp Gln Leu Ile
 165 170 175
 His Arg Met Ile Cys Ser Arg Ser Glu Val Asp Ser Lys Lys Ile Ser
 180 185 190
 Ile Gly Asp Leu Ser Gly His Asp Phe Gln Arg Ile Val Ser Val Ile
 195 200 205
 Asn Glu Met Gln Glu His Thr Leu Leu Ile Asp Asp Gln Pro Gly Leu
 210 215 220
 Lys Val Ser Asp Leu Arg Ala Arg Ala Arg Arg Met Lys Glu Ser Tyr
 225 230 235 240
 Asp Ile Gln Phe Leu Ile Ile Asp Tyr Leu Gln Leu Leu Ser Gly Ser
 245 250 255
 Gly Thr Leu Arg Ala Thr Glu Ser Arg Gln Thr Glu Ile Ser Glu Ile
 260 265 270
 Ser Arg Met Leu Lys Thr Leu Ala Arg Glu Leu Asn Ile Pro Ile Leu
 275 280 285
 Cys Leu Ser Gln Leu Ser Arg Lys Val Glu Asp Arg Ala Asn His Arg
 290 295 300
 Pro Met Met Ser Asp Leu Arg Glu Ser Gly Ser Ile Glu Gln Asp Ser
 305 310 315 320
 Asp Leu Val Met Phe Leu Leu Arg Arg Glu Tyr Tyr Asp Pro Asn Asp
 325 330 335
 Lys Pro Gly Thr Ala Glu Leu Ile Ile Ala Lys Asn Arg His Gly Ser
 340 345 350
 Ile Gly Ser Val Pro Leu Val Phe Glu Lys Glu Leu Ala Arg Phe Arg
 355 360 365
 Asn Tyr Ser Ala Phe Glu Cys Ile Ser
 370 375
 <210>655
 <211>611
 <212>PRT
 <213>Chlamydia pneumoniae

<400>655

Met Trp Thr His Pro Ile Ala Tyr Asp Val Ile Val Val Gly Ala Gly
1 5 10 15
His Ala Gly Cys Glu Ala Ala Tyr Cys Ser Ala Lys Met Gly Val Ser
20 25 30
Val Leu Met Leu Thr Ser Asn Leu Asp Thr Ile Ala Lys Leu Ser Cys
35 40 45
Asn Pro Ala Val Gly Gly Ile Gly Lys Gly His Ile Val Arg Glu Ile
50 55 60
Asp Ala Leu Gly Gly Ile Met Ala Glu Val Thr Asp Gln Ser Gly Ile
65 70 75 80
Gln Phe Arg Ile Leu Asn Gln Thr Lys Gly Pro Ala Val Arg Ala Pro
85 90 95
Arg Ala Gln Val Asp Lys Gln Leu Tyr His Ile His Met Lys Arg Leu
100 105 110
Leu Glu Asn Thr Pro Gly Leu His Ile Met Gln Ala Thr Val Glu Ser
115 120 125
Leu Leu Asp Lys Glu Gly Val Ile Ser Gly Val Thr Thr Lys Glu Gly
130 135 140
Trp Met Phe Ser Gly Lys Thr Val Val Leu Ser Ser Gly Thr Phe Met
145 150 155 160
Arg Gly Leu Ile His Ile Gly Asp Arg Asn Phe Ser Gly Gly Arg Leu
165 170 175
Gly Asp Pro Ser Ser Gln Gly Leu Ser Glu Asp Leu Lys Lys Arg Gly
180 185 190
Phe Pro Ile Ser Arg Leu Lys Thr Gly Thr Pro Pro Arg Leu Leu Ala
195 200 205
Ser Ser Ile Asn Phe Ser Cys Met Glu Glu Gln Pro Gly Asp Leu Gly
210 215 220
Val Gly Phe Val His Arg Thr Glu Pro Phe Gln Pro Pro Leu Pro Gln
225 230 235 240
Leu Ser Cys Phe Ile Thr His Thr Met Glu Lys Thr Lys Ala Ile Ile
245 250 255
Ser Ala Asn Leu His Arg Ser Ala Leu Tyr Gly Gly Cys Ile Glu Gly
260 265 270
Val Gly Pro Arg Tyr Cys Pro Ser Ile Glu Asp Lys Ile Val Lys Phe
275 280 285
Ser Asp Lys Glu Arg His His Val Phe Leu Glu Pro Glu Gly Leu His
290 295 300
Thr Gln Glu Ile Tyr Ala Asn Gly Leu Ser Thr Ser Met Pro Phe Asp
305 310 315 320
Val Gln Tyr Asp Met Ile Arg Ser Val Leu Gly Leu Glu Asn Ala Ile
325 330 335
Ile Thr Arg Pro Ala Tyr Ala Ile Glu Tyr Asp Tyr Ile His Gly Asn
340 345 350
Val Ile His Pro Thr Leu Glu Ser Lys Leu Ile Glu Gly Leu Phe Leu
355 360 365
Cys Gly Gln Ile Asn Gly Thr Thr Gly Tyr Glu Glu Ala Ala Gln
370 375 380
Gly Leu Ile Ala Gly Ile Asn Ala Val Asn Lys Val Phe Asn Arg Pro
385 390 395 400
Pro Phe Ile Pro Ser Arg Gln Glu Ser Tyr Ile Gly Val Met Leu Asp
405 410 415
Asp Leu Thr Thr Gln Ile Leu Asp Glu Pro Tyr Arg Met Phe Thr Gly
420 425 430
Arg Ala Glu His Arg Leu Leu Leu Arg Gln Asp Asn Ala Cys Ala Arg
435 440 445
Leu Ser His Tyr Gly Tyr Glu Leu Gly Leu Leu Ser Glu Glu Arg Tyr
450 455 460
Glu Leu Val Lys Lys Gln Asn Gln Leu Leu Glu Glu Lys Val Arg
465 470 475 480
Leu Gln Lys Thr Phe Arg Gln Tyr Gly Gln Ser Val Val Ser Leu Ala
485 490 495
Lys Ala Leu Ser Arg Pro Glu Val Ser Tyr Asp Met Leu Arg Glu Ala

500 505 510
 Phe Pro Asn Asp Ile Arg Asp Leu Gly Ala Val Leu Asn Ala Ser Leu
 515 520 525
 Glu Met Glu Ile Lys Tyr Ser Gly Tyr Ile Asp Arg Gln Lys Ile Leu
 530 535 540
 Ile Gln Ser Leu Glu Lys Ala Glu Ser Leu Leu Ile Pro Glu Asp Leu
 545 550 555 560
 Asp Tyr Lys Gln Ile Thr Ala Leu Ser Leu Glu Ala Gln Glu Lys Leu
 565 570 575
 Ala Lys Phe Thr Pro Arg Thr Leu Gly Ser Ala Ser Arg Ile Ser Gly
 580 585 590
 Ile Ala Ser Ala Asp Ile Gln Val Leu Met Ile Ala Leu Lys Lys His
 595 600 605
 Ala His His
 610

<210>656

<211>217

<212>PRT

<213>Chlamydia pneumoniae

<400>656

Lys Asn Met Pro Thr Thr Asn Cys Ile Phe Leu Asp Leu Arg Gly His
 1 5 10 15
 Ser Ile Leu His Gln Leu Gln Ile Glu Ala Leu Leu Arg Val Ala
 20 25 30
 Asn Gln Asn Phe Cys Ile Ile Asn Ser Gly Ala Lys Asp Ser Ile Val
 35 40 45
 Leu Gly Ile Ser Arg Asn Leu Asn Gln Asp Val His Ile Ser Arg Ala
 50 55 60
 Gln Ala Asp His Ile Pro Ile Ile Arg Arg Tyr Ser Gly Gly Gly Thr
 65 70 75 80
 Val Phe Ile Asp Ser Asn Thr Leu Met Val Ser Trp Ile Met Asn Ser
 85 90 95
 Ser Glu Ala Ser Ala Gln Pro Gln Glu Leu Leu Ala Trp Thr Tyr Gly
 100 105 110
 Ile Tyr Ser Pro Leu Leu Pro Asn Thr Phe Ser Ile Arg Glu Asn Asp
 115 120 125
 Tyr Val Leu Gly His Lys Lys Ile Gly Gly Asn Ala Gln Tyr Ile Gln
 130 135 140
 Arg His Arg Trp Val His His Thr Thr Phe Leu Trp Asp Ile Asp Leu
 145 150 155 160
 Asp Lys Leu Ser Tyr Tyr Leu Pro Ile Pro Gln Gln Gln Pro Thr Tyr
 165 170 175
 Arg Asn Gln Arg Ser His Glu Glu Phe Leu Thr Thr Leu Arg Pro Trp
 180 185 190
 Phe Pro Ser Arg Asp Asp Phe Leu Glu Arg Ile Lys Ala Ser Gly Ser
 195 200 205
 Leu Leu Phe Tyr Leu Gly Arg Ile Ser
 210 215

<210>657

<211>144

<212>PRT

<213>Chlamydia pneumoniae

<400>657

Met Glu Gln Thr Leu Ser Ile Ile Lys Pro Asp Ser Val Ser Lys Ala
 1 5 10 15
 His Ile Gly Glu Ile Leu Ser Ile Phe Glu Gln Ser Gly Leu Arg Ile
 20 25 30
 Ala Ala Met Lys Met Met His Leu Ser Gln Thr Glu Ala Glu Gly Phe
 35 40 45
 Tyr Phe Val His Arg Glu Arg Pro Phe Phe Gln Glu Leu Val Asp Phe
 50 55 60
 Met Val Ser Gly Pro Val Val Val Leu Val Leu Glu Gly Ala Asn Ala
 65 70 75 80
 Val Ser Arg Asn Arg Glu Leu Met Gly Ala Thr Asn Pro Ala Glu Ala

85 90 95
 Ala Ser Gly Thr Ile Arg Ala Lys Phe Gly Glu Ser Ile Gly Val Asn
 100 105 110
 Ala Val His Gly Ser Asp Thr Leu Glu Asn Ala Ala Val Glu Ile Ala
 115 120 125
 Tyr Phe Phe Ser Lys Ile Glu Val Val Asn Ala Ser Lys Pro Leu Val
 130 135 140
 <210>658
 <211>207
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>658
 Met Tyr Asp Tyr Ile Arg Gly Thr Leu Thr Tyr Val His Thr Gly Ala
 1 5 10 15
 Ile Val Ile Glu Cys Gln Gly Ile Gly Tyr His Ile Ala Ile Thr Glu
 20 25 30
 Arg Trp Ala Ile Glu Cys Ile Arg Ala Leu His Gln Asp Phe Leu Val
 35 40 45
 Phe Thr His Val Ile Phe Arg Glu Thr Glu His Leu Leu Tyr Gly Phe
 50 55 60
 His Ser Arg Glu Glu Arg Glu Cys Phe Arg Ile Leu Ile Ser Phe Ser
 65 70 75 80
 Gly Ile Gly Pro Lys Leu Ala Leu Ala Ile Leu Asn Ala Leu Pro Leu
 85 90 95
 Lys Val Leu Cys Ser Val Val Arg Ser Glu Asp Ile Arg Ala Leu Ala
 100 105 110
 Ser Val Ser Gly Ile Gly Lys Lys Thr Ala Glu Lys Leu Met Val Glu
 115 120 125
 Leu Lys Gln Lys Leu Pro Asp Leu Leu Pro Leu Asp Ser Arg Val Glu
 130 135 140
 Thr Ser Gln Thr His Thr Thr Ser Ser Cys Leu Glu Glu Gly Ile Gln
 145 150 155 160
 Ala Leu Ala Ala Leu Gly Tyr Ser Lys Ile Ala Ala Glu Arg Met Ile
 165 170 175
 Ala Glu Ala Ile Lys Asp Leu Pro Glu Gly Ser Ser Leu Thr Asp Ile
 180 185 190
 Leu Pro Ile Ala Leu Lys Lys Asn Phe Ser Gly Val Asn Lys Asp
 195 200 205
 <210>659
 <211>168
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>659
 Val Ser Glu Leu Ile Ile Gly Val Asp Pro Gly Thr Ile Val Ala Gly
 1 5 10 15
 Tyr Ala Ile Ile Ala Val Glu Gln Arg Tyr Gln Leu Arg Pro Tyr Ser
 20 25 30
 Tyr Gly Ala Ile Arg Leu Ser Ser Asp Met Pro Leu Pro Met Arg Tyr
 35 40 45
 Lys Thr Leu Phe Glu Gln Leu Ser Gly Val Leu Asp Asp Thr Gln Pro
 50 55 60
 Asn Ala Met Val Leu Glu Thr Gln Phe Val Asn Lys Asn Pro Gln Ser
 65 70 75 80
 Thr Met Lys Leu Ala Met Ala Arg Gly Ile Val Leu Leu Ala Ala Ala
 85 90 95
 Gln Arg Asp Ile Leu Ile Phe Glu Tyr Ala Pro Asn Val Ala Lys Lys
 100 105 110
 Ala Val Val Gly Lys Gly His Ala Ser Lys Arg Gln Val Gln Val Met
 115 120 125
 Val Ser Lys Ile Leu Asn Val Pro Glu Val Leu His Pro Ser Asn Glu
 130 135 140
 Asp Ile Ala Asp Ala Phe Ala Leu Ala Ile Cys His Thr His Val Ala
 145 150 155 160
 Arg Ser Pro Leu Cys Gly Val Arg

165

<210>660

<211>323

<212>PRT

<213>Chlamydia pneumoniae

<400>660

Arg Tyr Ser Val Arg Leu Leu Ser Ile Leu Lys Leu His Leu Phe Ser
 1 5 10 15
 Leu Arg Ser Ser Ser Leu Ser Pro His Tyr Tyr His Ser Cys Ser
 20 25 30
 Arg Ser Met Leu His Leu Leu Cys Arg Trp Lys Asp Ala Asp Ile Met
 35 40 45
 Glu Trp Gln Gln Ile Cys Asn Ile Leu Ser Gly Val Cys Ser Arg Met
 50 55 60
 Ser Gly Lys Leu Val Ser Leu Gln Lys Glu Thr Gln Asp Ser Cys His
 65 70 75 80
 Gln Glu His Glu Arg Ile His Leu Gln Tyr Arg Glu Gln Leu Ser Ala
 85 90 95
 Leu Glu Glu Glu Tyr Arg Arg Arg Glu Ala Lys Asn Gln Asp Leu
 100 105 110
 Glu Lys Leu Gln Gln Glu Asn Thr Trp Leu Gln Asn Arg Leu Ala Glu
 115 120 125
 Lys Leu Gln Gln Ile Arg His Gln Ser Asp Ile Ile Asp Glu Ile Lys
 130 135 140
 Lys Glu Leu Leu Gln Ser Val Gln Arg Thr Glu Ile Ser Glu Gly Arg
 145 150 155 160
 Arg Leu Cys Tyr Glu His Lys Ile Lys Gln Leu Glu Glu Gln Leu Gln
 165 170 175
 Arg Tyr Val Ser Gln His Gly Ala Pro Ser Ile Glu Ile Glu Glu Asp
 180 185 190
 Lys Ser Ser Ala Ala Tyr Ala Glu Ile Asn Arg Leu Lys Lys Ser Leu
 195 200 205
 Ile Asp Leu Gln Gln Glu Lys Asp Ile Tyr Ile Lys Thr Tyr His Ser
 210 215 220
 Glu Ile Ala Lys Leu Arg Glu Lys Leu Gln Arg Gln Glu Gly Ala Gln
 225 230 235 240
 Thr Ser Ser Glu Val Cys Ser Ile Glu Lys Leu Thr Glu Val Gln Thr
 245 250 255
 Asp Leu Ala Glu Lys Lys Lys Ala Ile Ala Leu Leu Gln Asp Ile Val
 260 265 270
 Glu Asp Gln Tyr Cys Gln Leu Arg Asp Leu His Lys Glu Lys Gly Met
 275 280 285
 Ala Met Pro Ser Asn Thr Lys Leu Asp His Leu Lys Gly Leu Leu Gly
 290 295 300
 Lys Glu Pro Glu Ser Glu Val Asp Val Val Phe Ser Glu Ser Lys Ser
 305 310 315 320
 Leu Gly Ser

<210>661

<211>282

<212>PRT

<213>Chlamydia pneumoniae

<400>661

Lys Gly Tyr Asn Tyr Val Tyr Phe Thr Arg Asp Pro Val Ile Glu Thr
 1 5 10 15
 Val Ile Thr Ser Arg Glu Gly Tyr Lys Leu Ser Val Arg Asn Thr Lys
 20 25 30
 His Phe Ser Gln Asp Pro Phe Met Val Glu Ala Ile Glu Val Ile Ser
 35 40 45
 Leu Gly Asn Ile Cys Phe Phe Arg Asn Cys Asp His Ser Lys Pro Phe
 50 55 60
 Leu Val Pro Ala Gly Asp Tyr Glu Val Met Glu Val Arg Asp Thr Lys
 65 70 75 80
 Ile Asn Leu Lys Ala Val Gly Leu Asp Arg Gly Val Lys Ile Ala Gly

Ile Leu Asp Tyr Thr Asp Glu Gln Val Val Ser Ser Asp Phe Ile Gly
 275 280 285
 Ser Glu Tyr Ser Ser Ile Phe Asp Ala Leu Ala Gly Ile Ala Leu Asn
 290 295 300
 Asp Arg Phe Phe Lys Leu Val Ala Trp Tyr Asp Asn Glu Thr Gly Tyr
 305 310 315 320
 Ala Thr Arg Ile Val Asp Leu Leu Glu Tyr Val Glu Lys Asn Ser Lys
 325 330 335

<210>663

<211>129

<212>PRT

<213>Chlamydia pneumoniae

<400>663

Met Gln His Ala Arg Lys Lys Phe Arg Val Gly Arg Thr Ser Ser His
 1 5 10 15
 Asn Arg Cys Met Leu Ala Asn Met Leu Lys Ser Leu Ile His Tyr Glu
 20 25 30
 Arg Ile Glu Thr Thr Leu Pro Lys Ala Lys Glu Leu Arg Arg His Ala
 35 40 45
 Asp Lys Met Ile Thr Leu Ala Lys Lys Asn Ser Leu Ala Ala Arg Arg
 50 55 60
 Ile Ala Ile Gly Arg Leu Met Val Arg Tyr Asn Lys Leu Thr Ser Lys
 65 70 75 80
 Glu Ala Arg Gln Ala Lys Gly Gly Asp Thr Ser Val Tyr Asn Val Asp
 85 90 95
 Arg Leu Val Val Asn Lys Leu Phe Asp Glu Leu Gly Asn Arg Phe Val
 100 105 110
 Glu Arg Lys Gly Gly Tyr Thr Arg Ile Leu Lys Leu Gln Asn Arg Thr
 115 120 125
 Trp

<210>664

<211>337

<212>PRT

<213>Chlamydia pneumoniae

<400>664

Ala Ser Arg Lys Arg Asn Gly Pro His Phe Arg Lys Cys Ser Lys Thr
 1 5 10 15
 Cys Phe Ala Tyr Trp Phe Arg Ser Ser Arg Tyr Leu Ile Ser Phe Ala
 20 25 30
 Met Thr Gly Val Leu His Glu Tyr Met Ala Ile Glu Gly Val Ile Glu
 35 40 45
 Asp Val Thr Asn Ile Ile Leu Asn Leu Lys Gly Ala Leu Leu Lys Lys
 50 55 60
 Tyr Pro Met Gln Asp Ser Ser Leu Gly Arg Thr Thr Gln Val Leu Lys
 65 70 75 80
 Ala Ser Ile Ser Ile Asp Ala Ser Asp Leu Ala Ala Ala Asn Gly Gln
 85 90 95
 Lys Glu Val Thr Leu Gln Asp Leu Leu Gln Glu Gly Asp Phe Glu Ala
 100 105 110
 Val Asn Pro Asp Gln Val Ile Phe Thr Val Thr Gln Pro Ile Gln Leu
 115 120 125
 Glu Val Asp Leu Arg Ile Ala Phe Gly Arg Gly Tyr Thr Pro Ser Glu
 130 135 140
 Arg Ile Val Leu Glu Asp Lys Gly Val Tyr Glu Ile Val Leu Asp Ala
 145 150 155 160
 Ala Phe Ser Pro Val Thr Leu Val Asn Tyr Phe Val Glu Asp Thr Arg
 165 170 175
 Val Gly Gln Asp Thr Asp Phe Asp Arg Leu Val Leu Ile Val Glu Thr
 180 185 190
 Asp Gly Arg Val Thr Pro Lys Glu Ala Leu Ala Phe Ser Thr Gln Ile
 195 200 205
 Leu Thr Lys His Phe Ser Ile Phe Glu Asn Met Asp Glu Lys Lys Ile
 210 215 220

Val Phe Glu Glu Ala Ile Ser Ile Glu Lys Glu Asn Lys Asp Asp Ile
 225 230 235 240
 Leu His Lys Leu Ile Leu Gly Ile Asn Glu Ile Glu Leu Ser Val Arg
 245 250 255
 Ser Thr Asn Cys Leu Ser Asn Ala Asn Ile Glu Thr Ile Gly Glu Leu
 260 265 270
 Val Ile Met Pro Glu Pro Arg Leu Leu Gln Phe Arg Asn Phe Gly Lys
 275 280 285
 Lys Ser Leu Cys Glu Ile Lys Asn Lys Leu Lys Glu Met Lys Leu Glu
 290 295 300
 Leu Gly Met Asp Leu Thr Gln Phe Gly Val Gly Leu Asp Asn Val Lys
 305 310 315 320
 Glu Lys Met Lys Trp Tyr Ala Glu Lys Ile Arg Ala Lys Asn Ile Lys
 325 330 335
 Gly

<210>665

<211>82

<212>PRT

<213>Chlamydia pneumoniae

<400>665

Leu Pro Ala Lys Lys Lys Ala Gln Ser Val Val Leu Gly Lys Glu Lys
 1 5 10 15
 Gly Met Ser Asp Asn Ala His Asn Leu Leu Tyr Asp Lys Phe Glu Leu
 20 25 30
 Pro Glu Ala Val Lys Met Leu Pro Val Glu Gly Leu Pro Ile Asp Lys
 35 40 45
 His Ala Arg Phe Ile Ala Glu Pro Leu Glu Arg Gly Met Gly His Thr
 50 55 60
 Leu Gly Asn Ala Leu Arg Arg Ala Leu Leu Ile Gly Leu Glu Ala Pro
 65 70 75 80
 Gly Ile

<210>666

<211>133

<212>PRT

<213>Chlamydia pneumoniae

<400>666

Leu Val Lys Asn Gln Ala Gln Ala Lys Lys Ser Val Lys Arg Lys Gln
 1 5 10 15
 Leu Lys Asn Ile Pro Ser Gly Val Val His Val Lys Ala Thr Phe Asn
 20 25 30
 Asn Thr Ile Val Ser Ile Thr Asp Pro Ala Gly Asn Val Ile Ser Trp
 35 40 45
 Ala Ser Ala Gly Lys Val Gly Tyr Ser Gly Ser Xaa Lys Ser Ser Ala
 50 55 60
 Phe Ala Ala Thr Val Ala Ala Gln Asp Ala Ala Lys Thr Ala Met Asn
 65 70 75 80
 Ser Gly Leu Lys Glu Xaa Xaa Val Cys Leu Lys Gly Thr Gly Ala Gly
 85 90 95
 Arg Glu Ser Ala Val Arg Ala Leu Ile Ser Ala Gly Leu Val Val Ser
 100 105 110
 Val Ile Arg Asp Glu Thr Pro Val Pro His Asn Gly Cys Arg Pro Arg
 115 120 125
 Lys Arg Arg Arg Val
 130

<210>667

<211>122

<212>PRT

<213>Chlamydia pneumoniae

<400>667

Met Pro Arg Ile Ile Gly Ile Asp Ile Pro Ala Lys Lys Lys Leu Lys
 1 5 10 15
 Ile Ser Leu Thr Tyr Ile Tyr Gly Ile Gly Ser Ala Arg Ser Asp Glu

20 25 30
 Ile Ile Lys Lys Leu Lys Leu Asp Pro Glu Ala Arg Ala Ser Glu Leu
 35 40 45
 Thr Glu Glu Glu Val Gly Arg Leu Asn Ser Leu Leu Gln Ser Glu Tyr
 50 55 60
 Thr Val Glu Gly Asp Leu Arg Arg Arg Val Gln Ser Asp Ile Lys Arg
 65 70 75 80
 Leu Ile Ala Ile His Ser Tyr Arg Gly Gln Arg His Arg Leu Ser Leu
 85 90 95
 Pro Val Arg Gly Gln Arg Thr Lys Thr Asn Ser Arg Thr Arg Lys Gly
 100 105 110
 Lys Arg Lys Thr Val Ala Gly Lys Lys Lys
 115 120
 <210>668
 <211>462
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>668
 Leu Phe Arg Pro Tyr Met Thr Thr Leu Arg Gln Phe Phe Leu Ile Thr
 1 5 10 15
 Glu Leu Arg Gln Lys Leu Phe Tyr Thr Phe Ala Leu Leu Thr Ala Cys
 20 25 30
 Arg Val Gly Val Phe Ile Pro Val Pro Gly Ile Asn Gly Glu Leu Ala
 35 40 45
 Val Ala Tyr Phe Lys Gln Leu Leu Gly Ser Gly Gln Asn Leu Phe Gln
 50 55 60
 Leu Ala Asp Ile Phe Ser Gly Gly Ala Phe Ala Gln Met Thr Val Ile
 65 70 75 80
 Ala Leu Gly Val Val Pro Tyr Ile Ser Ala Ser Ile Ile Val Gln Leu
 85 90 95
 Phe Leu Val Phe Met Pro Ala Leu Gln Arg Glu Met Arg Glu Ser Ser
 100 105 110
 Asp Gln Gly Lys Arg Arg Ile Gly Arg Leu Thr Arg Leu Phe Thr Val
 115 120 125
 Ala Leu Ala Val Ile Gln Ser Leu Leu Phe Ala Lys Phe Ala Leu Arg
 130 135 140
 Met Asn Leu Thr Ile Pro Gly Ile Val Leu Pro Thr Leu Leu Ser Ser
 145 150 155 160
 Lys Leu Phe Gly Val Pro Trp Ile Phe Tyr Ile Thr Thr Val Val Val
 165 170 175
 Met Thr Thr Gly Thr Leu Leu Leu Met Trp Ile Gly Glu Gln Ile Ser
 180 185 190
 Asp Lys Gly Ile Gly Asn Gly Ile Ser Leu Ile Ile Ala Leu Gly Ile
 195 200 205
 Leu Ser Ser Phe Pro Ser Val Leu Gly Ser Ile Val Asn Lys Leu Asn
 210 215 220
 Leu Gly Ser Gln Asp Ser Ser Asp Leu Gly Leu Ile Ser Ile Leu Ile
 225 230 235 240
 Leu Ala Leu Val Phe Val Phe Val Leu Ile Thr Thr Ile Leu Ile Ile
 245 250 255
 Glu Gly Val Arg Lys Ile Pro Val Gln Tyr Ala Arg Arg Val Ile Gly
 260 265 270
 Arg Arg Glu Val Pro Gly Gly Gly Ser Tyr Leu Pro Leu Lys Val Asn
 275 280 285
 Tyr Ala Gly Val Ile Pro Val Ile Phe Ala Ser Ser Leu Leu Met Phe
 290 295 300
 Pro Ala Thr Ile Gly Gln Phe Ile Ala Ser Glu Ser Ser Trp Met Lys
 305 310 315 320
 Arg Ile Ala Ala Leu Leu Ala Pro Gly Ser Leu Val Tyr Ser Ile Cys
 325 330 335
 Tyr Val Leu Leu Ile Ile Phe Phe Thr Tyr Phe Trp Thr Ala Thr Gln
 340 345 350
 Phe His Pro Glu Gln Ile Ala Ser Glu Met Lys Lys Asn Asn Ala Phe
 355 360 365

Ile Pro Gly Ile Arg Gln Gly Lys Pro Thr Gln His Tyr Leu Glu Tyr
 370 375 380
 Thr Met Asn Arg Val Thr Leu Leu Gly Ala Leu Phe Leu Ala Ala Ile
 385 390 395 400
 Ala Ile Leu Pro Ser Leu Leu Gly Cys Leu Leu Arg Val Asp Ser Asn
 405 410 415
 Val Ser Tyr Phe Leu Gly Gly Thr Ala Met Leu Ile Val Val Gly Val
 420 425 430
 Val Leu Asp Thr Met Lys Gln Val Asp Ala Phe Leu Leu Met Arg Arg
 435 440 445
 Tyr Asp Ser Val Leu Lys Thr Asp Arg Thr Lys Gly Arg His
 450 455 460

<210>669

<211>144

<212>PRT

<213>Chlamydia pneumoniae

<400>669

Met Ile Lys Leu Glu Ser Leu Phe Asp Ile Ser Glu Arg Lys Arg Arg
 1 5 10 15
 Lys Lys Leu Leu Gly Arg Gly Pro Ser Ser Gly His Gly Lys Thr Ser
 20 25 30
 Gly Arg Gly His Lys Gly Asp Gly Ser Arg Ser Gly Tyr Lys Arg Arg
 35 40 45
 Phe Gly Tyr Glu Gly Gly Gly Val Pro Leu Tyr Arg Arg Val Pro Thr
 50 55 60
 Arg Gly Phe Ser His Lys Arg Phe Asp Lys Cys Val Glu Glu Ile Thr
 65 70 75 80
 Thr Gly Arg Leu Ala Glu Leu Phe Gln Glu Gly Glu Ala Ile Thr Leu
 85 90 95
 Asp Ala Leu Lys Ala Lys Lys Ala Ile Ala Arg Gln Ala Val Arg Val
 100 105 110
 Lys Val Ile Leu Lys Gly Asp Leu Glu Lys Thr Phe Val Trp Gln Asp
 115 120 125
 Thr Ala Val Val Leu Ser Gln Gly Val Gln Asn Leu Leu Gly Ile Thr
 130 135 140

<210>670

<211>165

<212>PRT

<213>Chlamydia pneumoniae

<400>670

Met Ser Leu Ser Lys Asn Ser His Lys Glu Asp Gln Leu Glu Glu Lys
 1 5 10 15
 Val Leu Val Val Asn Arg Cys Ser Lys Val Val Lys Gly Gly Arg Lys
 20 25 30
 Phe Ser Phe Ser Ala Leu Ile Leu Val Gly Asp Gly Lys Gly Arg Leu
 35 40 45
 Gly Tyr Gly Phe Ala Lys Ala Asn Glu Leu Thr Asp Ala Ile Arg Lys
 50 55 60
 Gly Gly Glu Ala Ala Lys Lys Asn Leu Met Lys Ile Glu Ala Leu Glu
 65 70 75 80
 Asp Gly Ser Ile Pro His Glu Val Leu Val His His Asp Gly Ala Gln
 85 90 95
 Leu Leu Leu Lys Pro Ala Lys Pro Gly Thr Gly Ile Val Ala Gly Ser
 100 105 110
 Arg Ile Arg Leu Ile Leu Glu Met Ala Gly Ile Lys Asp Ile Val Ala
 115 120 125
 Lys Ser Phe Gly Ser Asn Asn Pro Met Asn Gln Val Lys Ala Ala Phe
 130 135 140
 Lys Ala Leu Thr Gly Leu Ser Pro Arg Lys Asp Leu Leu Arg Arg Gly
 145 150 155 160
 Ala Ala Ile Asn Asp
 165

<210>671

<211>93

<212>PRT

<213>Chlamydia pneumoniae

<400>671

Leu Glu Trp Val Ser Glu Pro Leu Phe Lys Val His Phe Trp Ile Ser
 1 5 10 15
 Pro Leu Gly Phe Leu Thr Leu Gln Lys Phe Pro Ile Pro Ser Thr Leu
 20 25 30
 Gln Val Ser Val Glu Lys Asn Thr Leu Ile Ser Val Lys Gly Leu Asp
 35 40 45
 Lys Gln Leu Val Gly Glu Phe Ala Ala Ser Ile Arg Ala Lys Arg Pro
 50 55 60
 Pro Glu Pro Tyr Lys Gly Lys Gly Ile Arg Tyr Glu Asn Glu Tyr Val
 65 70 75 80
 Arg Arg Lys Ala Gly Lys Ala Ala Lys Thr Gly Lys Lys
 85 90

<210>672

<211>126

<212>PRT

<213>Chlamydia pneumoniae

<400>672

Met Ser Arg Lys Ala Arg Glu Pro Ile Leu Leu Pro Gln Gly Val Glu
 1 5 10 15
 Val Ser Ile Gln Asp Asp Lys Ile Ile Val Lys Gly Pro Lys Gly Ser
 20 25 30
 Leu Thr Gln Lys Ser Val Lys Glu Val Glu Ile Thr Leu Lys Asp Asn
 35 40 45
 Ser Ile Phe Val His Ala Ala Pro His Val Val Asp Arg Pro Ser Cys
 50 55 60
 Met Gln Gly Leu Tyr Trp Ala Leu Ile Ser Asn Met Val Gln Gly Val
 65 70 75 80
 His Leu Gly Phe Glu Lys Arg Leu Glu Met Ile Gly Val Gly Phe Arg
 85 90 95
 Ala Ser Val Gln Gly Ala Phe Leu Asp Leu Ser Ile Gly Val Ser His
 100 105 110
 Pro Thr Lys Ile Ser Tyr Pro Ile Tyr Ser Ser Gly Ile Ser
 115 120 125

<210>673

<211>133

<212>PRT

<213>Chlamydia pneumoniae

<400>673

Met Gly Met Thr Ser Asp Ser Ile Ala Asp Leu Leu Thr Arg Ile Arg
 1 5 10 15
 Asn Ala Leu Met Ala Glu His Leu Tyr Val Asp Val Glu His Ser Lys
 20 25 30
 Met Arg Glu Ala Ile Val Lys Ile Leu Lys His Lys Gly Phe Val Ala
 35 40 45
 His Tyr Leu Val Xaa Glu Xaa Asn Xaa Lys Arg Ala Met Arg Val Phe
 50 55 60
 Leu Gln Tyr Ser Asp Asp Arg Lys Pro Val Ile His Gln Leu Lys Arg
 65 70 75 80
 Val Ser Lys Pro Ser Arg Arg Val Tyr Val Ser Ala Ala Lys Ile Pro
 85 90 95
 Tyr Val Phe Gly Asn Met Gly Ile Ser Val Leu Ser Thr Ser Gln Gly
 100 105 110
 Val Met Glu Gly Ser Leu Ala Arg Ser Lys Asn Ile Gly Gly Glu Leu
 115 120 125
 Leu Cys Leu Val Trp
 130

<210>674

<211>180

<212>PRT

<213>Chlamydia pneumoniae

<400>674

Met Ser Arg Leu Lys Lys Phe Tyr Thr Glu Glu Ile Arg Lys Ser Leu
 1 5 10 15
 Phe Glu Lys Phe Gly Tyr Ala Asn Lys Met Gln Ile Pro Val Leu Lys
 20 25 30
 Lys Ile Val Leu Ser Met Gly Leu Ala Glu Ala Ala Lys Asp Lys Asn
 35 40 45
 Leu Phe Gln Ala His Leu Glu Glu Leu Thr Met Ile Ser Gly Gln Lys
 50 55 60
 Pro Leu Val Thr Lys Ala Arg Asn Ser Ile Ala Gly Phe Lys Leu Arg
 65 70 75 80
 Glu Gly Gln Gly Ile Gly Ala Lys Val Thr Leu Arg Gly Ile Arg Met
 85 90 95
 Tyr Asp Phe Met Asp Arg Phe Cys Asn Ile Val Ser Pro Arg Ile Arg
 100 105 110
 Asp Phe Arg Gly Phe Ser Asn Lys Gly Asp Gly Arg Gly Cys Tyr Ser
 115 120 125
 Val Gly Leu Asp Asp Gln Gln Ile Phe Pro Glu Ile Asn Leu Asp Arg
 130 135 140
 Val Lys Arg Thr Gln Gly Leu Asn Ile Thr Trp Val Thr Thr Ala Gln
 145 150 155 160
 Thr Asp Asp Glu Cys Thr Thr Leu Leu Glu Leu Met Gly Leu Arg Phe
 165 170 175
 Lys Lys Ala Gln
 180

<210>675

<211>111

<212>PRT

<213>Chlamydia pneumoniae

<400>675

Met Lys Lys Gln Asn Ile Arg Val Gly Asp Lys Val Phe Ile Leu Ala
 1 5 10 15
 Gly Asn Asp Lys Gly Lys Glu Gly Lys Val Leu Ser Leu Thr Glu Asp
 20 25 30
 Lys Val Val Val Glu Gly Val Asn Val Arg Ile Lys Asn Ile Lys Arg
 35 40 45
 Ser Gln Gln Asn Pro Lys Gly Lys Arg Ile Ser Ile Glu Ala Pro Ile
 50 55 60
 His Ile Ser Asn Val Arg Leu Thr Ile Ala Gly Glu Pro Ala Lys Leu
 65 70 75 80
 Ser Val Lys Val Thr Glu Gln Gly Arg Glu Leu Trp Gln Arg Arg Pro
 85 90 95
 Asp Gly Thr Ser Gln Leu Tyr Arg Leu Val Arg Gly Lys Lys Gly
 100 105 110

<210>676

<211>79

<212>PRT

<213>Chlamydia pneumoniae

<400>676

Met Ile Gln Gln Glu Ser Gln Leu Lys Val Ala Asp Asn Thr Gly Ala
 1 5 10 15
 Lys Lys Val Lys Cys Phe Lys Val Leu Gly Gly Ser Arg Arg Arg Tyr
 20 25 30
 Ala Thr Val Gly Asp Val Ile Val Cys Ser Val Arg Asp Val Glu Pro
 35 40 45
 Asn Ser Ser Ile Lys Lys Gly Arg Arg Tyr Gln Ser Cys Asp Arg Ala
 50 55 60
 His Thr Ser Ala Tyr Tyr Lys Lys Arg Trp Val Tyr Phe Lys Ile
 65 70 75

<210>677

<211>86

<212>PRT

<213>Chlamydia pneumoniae

<400>677

Met Ala Ser Glu Pro Arg Gly Ser Arg Lys Val Lys Ile Gly Val Val

1 5 10 15
 Val Ser Ala Lys Met Glu Lys Thr Val Val Val Arg Val Glu Arg Ile
 20 25 30
 Phe Ser His Pro Gln Tyr Leu Lys Val Val Arg Ser Ser Lys Lys Tyr
 35 40 45
 Tyr Ala His Thr Glu Leu Lys Val Ser Glu Gly Asp Lys Val Lys Ile
 50 55 60
 Gln Glu Thr Arg Pro Leu Ser Lys Leu Lys Arg Trp Arg Val Ile Glu
 65 70 75 80
 His Val Gly Val Val Ser
 85

<210>678

<211>138

<212>PRT

<213>Chlamydia pneumoniae

<400>678

Met Leu Met Pro Lys Arg Thr Lys Phe Arg Lys Gln Gln Xaa Gly Gln
 1 5 10 15
 Phe Ala Gly Leu Ser Lys Gly Ala Thr Phe Val Asp Phe Gly Glu Tyr
 20 25 30
 Ala Met Gln Thr Leu Glu Arg Gly Leu Val Thr Ser Arg Lys Ile Glu
 35 40 45
 Ala Cys Arg Val Ala Ile Asn Arg Tyr Leu Lys Arg Arg Gly Lys Val
 50 55 60
 Trp Ile Arg Ile Phe Pro Asp Lys Ser Val Thr Lys Lys Pro Ala Glu
 65 70 75 80
 Thr Arg Met Gly Lys Gly Lys Gly Ala Pro Asp His Trp Val Ala Val
 85 90 95
 Val Arg Pro Gly Arg Ile Leu Phe Glu Val Ala Asn Val Ser Lys Glu
 100 105 110
 Asp Ala Gln Asp Ala Leu Arg Arg Ala Ala Lys Leu Gly Ile Lys
 115 120 125
 Thr Arg Phe Val Lys Arg Val Glu Arg Val
 130 135

<210>679

<211>223

<212>PRT

<213>Chlamydia pneumoniae

<400>679

Met Gly Gln Lys Gly Cys Pro Ile Gly Phe Arg Thr Gly Val Thr Lys
 1 5 10 15
 Lys Trp Arg Ser Leu Trp Tyr Gly Asn Lys Gln Glu Phe Gly Lys Phe
 20 25 30
 Leu Ile Glu Asp Val Arg Ile Arg Gln Phe Leu Arg Lys Lys Pro Ser
 35 40 45
 Cys Gln Gly Ala Ala Gly Phe Val Val Arg Arg Met Ser Gly Lys Ile
 50 55 60
 Glu Val Thr Ile Gln Thr Ala Arg Pro Gly Leu Val Ile Gly Lys Lys
 65 70 75 80
 Gly Ala Glu Val Asp Leu Leu Lys Glu Glu Leu Arg Ala Leu Thr Gly
 85 90 95
 Lys Glu Val Trp Leu Glu Ile Ala Glu Ile Lys Arg Pro Glu Leu Asn
 100 105 110
 Ala Lys Leu Val Ala Asp Asn Ile Ala Arg Gln Ile Glu Arg Arg Val
 115 120 125
 Ser Phe Arg Arg Ala Met Lys Lys Ala Met Gln Ser Val Met Asp Ala
 130 135 140
 Gly Ala Val Gly Val Lys Ile Gln Val Ser Gly Arg Leu Ala Gly Ala
 145 150 155 160
 Glu Ile Ala Arg Ser Glu Trp Tyr Lys Asn Gly Arg Val Pro Leu His
 165 170 175
 Thr Leu Arg Ala Asp Ile Asp Tyr Ala Thr Ala Cys Ala Glu Thr Thr
 180 185 190
 Tyr Gly Ile Ile Gly Ile Lys Val Trp Ile Asn Leu Gly Glu Asn Ser

195 200 205
 Ser Ser Thr Thr Pro Asn Asn Pro Ala Ala Pro Ser Ala Ala Ala
 210 215 220
 <210>680
 <211>115
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>680
 Arg Arg His Ser Met Phe Lys Ala Thr Ala Arg Tyr Ile Arg Val Gln
 1 5 10 15
 Pro Arg Lys Ala Arg Leu Ala Ala Gly Leu Met Arg Asn Leu Ser Val
 20 25 30
 Gln Glu Ala Glu Glu Gln Leu Gly Phe Ser Gln Leu Lys Ala Gly Arg
 35 40 45
 Cys Leu Lys Lys Val Leu Asn Ser Ala Val Ala Asn Ala Glu Leu His
 50 55 60
 Glu Asn Ile Lys Arg Glu Asn Leu Ser Val Thr Glu Val Arg Val Asp
 65 70 75 80
 Ala Gly Pro Val Tyr Lys Arg Ser Lys Ser Lys Ser Arg Gly Gly Arg
 85 90 95
 Ser Pro Ile Leu Lys Arg Thr Ser His Leu Thr Val Ile Val Gly Glu
 100 105 110
 Lys Glu Arg
 115
 <210>681
 <211>284
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>681
 Met Phe Lys Lys Phe Lys Pro Val Thr Pro Gly Thr Arg Gln Leu Val
 1 5 10 15
 Leu Pro Ala Phe Asp Glu Leu Thr Thr Arg Gly Glu Leu Arg Gly Thr
 20 25 30
 Lys Ser Lys Arg Ser Leu Arg Pro Asn Lys Lys Leu Ser Phe Phe Lys
 35 40 45
 Lys Ser Ser Gly Gly Arg Asp Asn Leu Gly His Ile Ser Cys Arg His
 50 55 60
 Arg Gly Gly Gly Ala Lys Gln Leu Tyr Arg Val Val Asp Phe Lys Arg
 65 70 75 80
 Asn Lys Asp Gly Ile Thr Ala Lys Val Val Thr Val Glu Tyr Asp Pro
 85 90 95
 Asn Arg Ser Ala Tyr Ile Ala Leu Leu Ser Tyr Glu Asp Gly Glu Lys
 100 105 110
 Arg Tyr Ile Leu Ala Pro Lys Gly Ile Gln Arg Gly Asp Val Val Val
 115 120 125
 Ser Gly Glu Gly Ser Pro Phe Lys Pro Gly Cys Cys Met Thr Leu Lys
 130 135 140
 Ser Ile Pro Leu Gly Leu Ser Val His Asn Ile Glu Met Arg Pro Ser
 145 150 155 160
 Ser Gly Gly Lys Leu Val Arg Ser Ala Gly Leu Ala Ala Gln Val Ile
 165 170 175
 Ala Lys Ser Pro Gly Tyr Val Thr Leu Lys Met Pro Ser Gly Glu Phe
 180 185 190
 Arg Met Leu Asn Glu Gly Cys Arg Ala Thr Ile Gly Glu Val Ser Asn
 195 200 205
 Ala Asp His Asn Leu Arg Val Asp Gly Lys Ala Gly Arg Arg Arg Trp
 210 215 220
 Met Gly Val Arg Pro Thr Val Arg Gly Thr Ala Met Asn Pro Val Asp
 225 230 235 240
 His Pro His Gly Gly Gly Glu Gly Arg His Asn Gly Tyr Ile Pro Arg
 245 250 255
 Thr Pro Trp Gly Lys Val Thr Lys Gly Leu Lys Thr Arg Asp Lys Asn
 260 265 270
 Lys Ser Asn Lys Trp Ile Val Lys Asp Arg Arg Lys

275

280

<210>682

<211>112

<212>PRT

<213>Chlamydia pneumoniae

<400>682

Asp Met Lys Asp Pro Tyr Asp Val Ile Lys Arg His Tyr Val Thr Glu
 1 5 10 15
 Lys Ala Lys Met Leu Glu His Leu Ser Ala Gly Thr Gly Glu Gly Lys
 20 25 30
 Lys Lys Gly Ser Phe Cys Lys Asp Pro Lys Phe Val Phe Ile Val Ser
 35 40 45
 His Asp Ala Thr Lys Pro Leu Ile Ala Gln Ala Leu Glu Ala Ile Tyr
 50 55 60
 Val Asp Lys Asn Val Lys Val Lys Ser Val Asn Thr Ile Asn Val Lys
 65 70 75 80
 Pro Gln Pro Ala Arg Met Phe Arg Gly Arg Arg Lys Gly Lys Thr Ser
 85 90 95
 Gly Phe Lys Lys Ala Ile Val Thr Phe Tyr Gln Gly His Ser Val Gly
 100 105 110

<210>683

<211>224

<212>PRT

<213>Chlamydia pneumoniae

<400>683

Trp Phe Tyr Tyr Gln Asn Leu Asp Phe Ser Gly Asn Lys Ile Gly Glu
 1 5 10 15
 Val Glu Val Ala Asp Ser Leu Phe Ala Asp Glu Gly Asp Gly Leu Gln
 20 25 30
 Leu Ile Lys Asp Tyr Ile Val Ala Ile Arg Ala Asn Lys Arg Gln Trp
 35 40 45
 Ser Ala Cys Thr Arg Asn Arg Ser Glu Val Ser His Ser Thr Lys Lys
 50 55 60
 Pro Phe Lys Gln Lys Gly Thr Gly Asn Ser Arg Gln Gly Cys Leu Ala
 65 70 75 80
 Ser Pro Gln Phe Arg Gly Gly Gly Ile Val Phe Gly Pro Lys Pro Lys
 85 90 95
 Phe Asn Gln His Val Arg Ile Asn Arg Lys Glu Arg Lys Ala Ala Ile
 100 105 110
 Arg Leu Leu Leu Ala Gln Lys Ile Gln Thr Asn Lys Leu Thr Val Val
 115 120 125
 Asp Asp Thr Val Phe Val Asp Ala Leu Thr Ala Pro Lys Thr Gln Ser
 130 135 140
 Ala Leu Arg Phe Leu Lys Asp Cys Asn Val Glu Cys Arg Ser Ile Leu
 145 150 155 160
 Phe Ile Asp His Leu Asp His Val Glu Lys Asn Glu Asn Leu Arg Leu
 165 170 175
 Ser Leu Arg Asn Leu Thr Ala Val Lys Gly Phe Val Tyr Gly Ile Asn
 180 185 190
 Ile Asn Gly Tyr Asp Leu Ala Ser Ala His Asn Ile Val Ile Ser Lys
 195 200 205
 Lys Ala Leu Gln Glu Leu Val Glu Arg Leu Val Ser Glu Thr Lys Asp
 210 215 220

<210>684

<211>235

<212>PRT

<213>Chlamydia pneumoniae

<400>684

Leu Phe Leu Gln Glu Glu Ser Lys Ser Leu Leu Leu Met Asp Lys Phe
 1 5 10 15
 Met Arg Ser His Ile Ser Val Met Gly Lys Lys Glu Gly Met Ile His
 20 25 30
 Ile Phe Asp Lys Asp Gly Ser Leu Val Ala Cys Ser Val Ile Arg Val
 35 40 45

Glu Pro Asn Val Val Thr Gln Ile Lys Thr Lys Glu Ser Asp Gly Tyr
 50 55 60
 Phe Ser Leu Gln Ile Gly Ala Glu Glu Met Asn Ala Pro Ala His Thr
 65 70 75 80
 Ile Thr Lys Arg Val Ser Lys Pro Lys Leu Gly His Leu Arg Lys Ala
 85 90 95
 Gly Gly Arg Val Phe Arg Phe Leu Lys Glu Val Arg Gly Ser Glu Glu
 100 105 110
 Ala Leu Asn Gly Val Ser Leu Gly Asp Ala Phe Gly Leu Glu Val Phe
 115 120 125
 Glu Asp Val Ser Ser Val Asp Val Arg Gly Ile Ser Lys Gly Lys Gly
 130 135 140
 Phe Gln Gly Val Met Lys Lys Phe Gly Phe Arg Gly Gly Pro Gly Ser
 145 150 155 160
 His Gly Ser Gly Phe His Arg His Ala Gly Ser Ile Gly Met Arg Ser
 165 170 175
 Thr Pro Gly Arg Cys Phe Pro Gly Ser Lys Arg Pro Ser His Met Gly
 180 185 190
 Ala Glu Asn Val Thr Val Lys Asn Leu Glu Val Ile Lys Val Asp Leu
 195 200 205
 Glu Lys Lys Val Leu Leu Val Lys Gly Ala Ile Pro Gly Ala Arg Gly
 210 215 220
 Ser Ile Val Ile Val Lys His Ser Ser Arg Thr
 225 230 235

<210>685

<211>100

<212>PRT

<213>Chlamydia pneumoniae

<400>685

Lys Val Ala Ser Lys Lys Phe Phe Arg Ser Asp Phe Phe Lys Ile Lys
 1 5 10 15
 Ile Lys Leu Ala Tyr Leu Pro Asp Phe Val Phe Cys His Met Leu Tyr
 20 25 30
 Lys Pro Ile Pro Ala Asp Ala Ala Val Lys Ala Pro Glu Ile Ala Ala
 35 40 45
 Glu Gln Ala Thr Val Ile Gly Lys Gly Met Ser Leu Thr Pro Ser Thr
 50 55 60
 Thr Asn Ser Lys Ala Phe Ser Arg Arg Val Lys Thr Phe Leu Phe Arg
 65 70 75 80
 Val Ala Thr Cys Ser Leu Arg Asn Ala Leu Ser Ala Leu Arg Ile Thr
 85 90 95
 Ser Pro Leu Asn
 100

<210>686

<211>334

<212>PRT

<213>Chlamydia pneumoniae

<400>686

Lys Trp Arg Leu Thr Gln Leu Asp Arg Gln Glu Val Gln Gln Val Arg
 1 5 10 15
 Cys Cys Cys Gln Leu Pro Lys Asn Gln Arg Leu Ser Ala Pro Leu Leu
 20 25 30
 Arg Lys Gly Phe Ile Val Phe Asn Asn Phe Phe Thr Asn Pro Gly Asn
 35 40 45
 Lys Leu Ala Lys Phe Val Gly Ala Thr Lys Ser Leu Asp Lys Cys Phe
 50 55 60
 Lys Leu Ser Lys Ala Val Ser Asp Cys Val Val Gly Ser Leu Glu Glu
 65 70 75 80
 Ala Gly Cys Thr Gly Asp Ala Leu Thr Ser Ala Arg Asn Ala Gln Gly
 85 90 95
 Met Leu Lys Thr Thr Arg Glu Val Val Ala Leu Ala Asn Val Leu Asn
 100 105 110
 Gly Ala Val Pro Ser Ile Val Asn Ser Thr Gln Arg Cys Tyr Gln Tyr
 115 120 125

Thr Arg Gln Ala Phe Glu Leu Gly Ser Lys Thr Lys Glu Arg Lys Thr
 130 135 140
 Pro Gly Glu Tyr Ser Lys Met Leu Leu Thr Arg Gly Asp Tyr Leu Leu
 145 150 155 160
 Ala Ala Ser Arg Glu Ala Cys Thr Ala Val Gly Ala Thr Thr Tyr Ser
 165 170 175
 Ala Thr Phe Gly Val Leu Arg Pro Leu Met Leu Ile Asn Lys Leu Thr
 180 185 190
 Ala Lys Pro Phe Leu Asp Lys Ala Thr Val Gly Asn Phe Gly Thr Ala
 195 200 205
 Val Ala Gly Ile Met Thr Ile Asn His Met Ala Gly Val Ala Gly Ala
 210 215 220
 Val Gly Gly Ile Ala Leu Glu Gln Lys Leu Phe Lys Arg Ala Lys Glu
 225 230 235 240
 Ser Leu Tyr Asn Glu Arg Cys Ala Leu Glu Asn Gln Gln Ser Gln Leu
 245 250 255
 Ser Gly Asp Val Ile Leu Ser Ala Glu Arg Ala Leu Arg Lys Glu His
 260 265 270
 Val Ala Thr Leu Lys Arg Asn Val Leu Thr Leu Leu Glu Lys Ala Leu
 275 280 285
 Glu Leu Val Val Asp Gly Val Lys Leu Ile Pro Leu Pro Ile Thr Val
 290 295 300
 Ala Cys Ser Ala Ala Ile Ser Gly Ala Leu Thr Ala Ala Ser Ala Gly
 305 310 315 320
 Ile Gly Leu Tyr Ser Ile Trp Gln Lys Thr Lys Ser Gly Lys
 325 330

<210>687

<211>321

<212>PRT

<213>Chlamydia pneumoniae

<400>687

Leu Asn Leu Lys Val Val Tyr Phe Gly Thr Pro Thr Phe Ala Ala Thr
 1 5 10 15
 Val Leu Gln Asp Leu Leu His His Lys Ile Gln Ile Thr Ala Val Val
 20 25 30
 Thr Arg Val Asp Lys Pro Gln Lys Arg Ser Ala Gln Leu Ile Pro Ser
 35 40 45
 Pro Val Lys Thr Ile Ala Leu Thr His Gly Leu Pro Leu Leu Gln Pro
 50 55 60
 Ser Lys Ala Ser Asp Pro Gln Phe Ile Glu Glu Leu Arg Ala Phe Asn
 65 70 75 80
 Ala Asp Val Phe Ile Val Val Ala Tyr Gly Ala Ile Leu Arg Gln Ile
 85 90 95
 Val Leu Asp Ile Pro Arg Tyr Gly Cys Tyr Asn Leu His Ala Gly Leu
 100 105 110
 Leu Pro Ala Tyr Arg Gly Ala Ala Pro Ile Gln Arg Cys Ile Met Glu
 115 120 125
 Gly Ala Thr Glu Ser Gly Asn Thr Val Ile Arg Met Asp Ala Gly Met
 130 135 140
 Asp Thr Gly Asp Met Ala Asn Ile Thr Arg Val Pro Ile Gly Pro Asp
 145 150 155 160
 Met Thr Ser Gly Glu Leu Ala Asp Ala Leu Ala Ser Gln Gly Ala Glu
 165 170 175
 Val Leu Ile Lys Thr Leu Gln Gln Ile Glu Ser Gly Gln Leu Gln Leu
 180 185 190
 Val Ser Gln Asp Ala Ala Leu Ala Thr Ile Ala Pro Lys Leu Ser Lys
 195 200 205
 Glu Glu Gly Gln Val Pro Trp Asp Lys Pro Ala Lys Glu Ala Tyr Ala
 210 215 220
 His Ile Arg Gly Val Thr Pro Ala Pro Gly Ala Trp Thr Leu Phe Ser
 225 230 235 240
 Phe Ser Glu Lys Ala Pro Lys Arg Leu Met Ile Arg Lys Ala Ser Leu
 245 250 255
 Leu Ala Glu Ala Gly Arg Tyr Gly Ala Pro Gly Thr Val Val Thr

260	265	270
Asp Arg Gln Glu Leu Ala Ile	Ala Cys Ser Glu Gly Ala	Ile Cys Leu
275	280	285
His Glu Val Gln Val Glu Gly	Lys Gly Ser Thr Asn Ser	Lys Ser Phe
290	295	300
Leu Asn Gly Tyr Pro Ala Lys	Lys Leu Lys Ile Val Phe	Thr Leu Asn
305	310	315
Asn		320

<210>688

<211>279

<212>PRT

<213>Chlamydia pneumoniae

<400>688

Met Ala Ser Ile His Pro Thr Ala Ile Ile Glu Pro Gly Ala Lys Ile	
1 5 10 15	
Gly Lys Asp Val Val Ile Glu Pro Tyr Val Val Ile Lys Ala Thr Val	
20 25 30	
Thr Leu Cys Asp Asn Val Val Val Lys Ser Tyr Ala Tyr Ile Asp Gly	
35 40 45	
Asn Thr Thr Ile Gly Lys Gly Thr Thr Ile Trp Pro Ser Ala Met Ile	
50 55 60	
Gly Asn Lys Pro Gln Asp Leu Lys Tyr Gln Gly Glu Lys Thr Tyr Val	
65 70 75 80	
Thr Ile Gly Glu Asn Cys Glu Ile Arg Glu Phe Ala Ile Ile Thr Ser	
85 90 95	
Ser Thr Phe Glu Gly Thr Thr Val Ser Ile Gly Asn Asn Cys Leu Ile	
100 105 110	
Met Pro Trp Ala His Val Ala His Asn Cys Thr Ile Gly Asn Asn Val	
115 120 125	
Val Leu Ser Asn His Ala Gln Leu Ala Gly His Val Gln Val Gly Asp	
130 135 140	
Tyr Ala Ile Leu Gly Gly Met Val Gly Val His Gln Phe Val Arg Ile	
145 150 155 160	
Gly Ala His Ala Met Val Gly Ala Leu Ser Gly Ile Arg Arg Asp Val	
165 170 175	
Pro Pro Tyr Thr Ile Gly Ser Gly Asn Pro Tyr Gln Leu Ala Gly Ile	
180 185 190	
Asn Lys Val Gly Leu Gln Arg Arg Gln Val Pro Phe Ala Thr Arg Leu	
195 200 205	
Ala Leu Ile Lys Ala Phe Lys Lys Ile Tyr Arg Ala Asp Gly Cys Phe	
210 215 220	
Phe Glu Ser Leu Glu Glu Thr Leu Glu Glu Tyr Gly Asp Ile Pro Glu	
225 230 235 240	
Val Lys Asn Phe Ile Glu Phe Cys Gln Ser Pro Ser Lys Arg Gly Ile	
245 250 255	
Glu Arg Ser Ile Asp Lys Gln Ala Leu Glu Glu Glu Ser Ala Asp Lys	
260 265 270	
Glu Gly Val Leu Ile Glu Ser	
275	

<210>689

<211>153

<212>PRT

<213>Chlamydia pneumoniae

<400>689

Met Asn Gln Pro Ser Val Ile Lys Leu Arg Glu Leu Leu Asp Leu Leu	
1 5 10 15	
Pro His Arg Tyr Pro Phe Leu Leu Val Asp Lys Val Leu Ser Tyr Asp	
20 25 30	
Ile Glu Ala Arg Ser Ile Thr Ala Gln Lys Asn Val Thr Ile Asn Glu	
35 40 45	
Pro Phe Phe Met Gly His Phe Pro Asn Ala Pro Ile Met Pro Gly Val	
50 55 60	
Leu Ile Leu Glu Ala Leu Ala Gln Ala Ala Gly Val Leu Ile Gly Leu	

65 70 75 80
 Val Leu Glu Asn Asp Arg Asn Lys Arg Ile Ala Leu Phe Leu Gly Ile
 85 90 95
 Gln Lys Ala Lys Phe Arg Gln Ala Val Arg Pro Gly Asp Val Leu Thr
 100 105 110
 Leu Gln Ala Asp Phe Ser Leu Ile Ser Ser Lys Gly Gly Lys Ala Trp
 115 120 125
 Ala Gln Ala Arg Val Asp Ser Gln Leu Val Thr Glu Ala Glu Leu Ser
 130 135 140
 Phe Ala Leu Val Asp Lys Glu Ser Ile
 145 150

<210>690

<211>166

<212>PRT

<213>Chlamydia pneumoniae

<400>690

Ser Ile Lys Gln Val Phe Val Asn Lys Lys Ile Xaa Val Ser Ile Ala
 1 5 10 15
 Arg Leu Thr Arg Pro Val Tyr Tyr Gln His Gln Asp Ile Phe Leu Ala
 20 25 30
 Ala Phe Pro Ser Asp Glu Leu Lys Ile Ser Tyr Thr Leu His Tyr Pro
 35 40 45
 Gln Ser Ser Thr Ile Gly Thr Gln Tyr Lys Ser Leu Val Ile Asn Glu
 50 55 60
 Glu Ser Phe Arg Gln Glu Ile Ala Pro Cys Arg Thr Phe Ala Leu Tyr
 65 70 75 80
 Asn Glu Leu Cys Phe Leu Met Glu Lys Gly Leu Ile Gly Gly Gly Cys
 85 90 95
 Leu Asp Asn Ala Val Val Phe Lys Asp Asp Gly Ile Ile Ser Arg Gly
 100 105 110
 Gln Leu Arg Phe Ala Asp Glu Pro Val Arg His Lys Ile Leu Asp Leu
 115 120 125
 Ile Gly Asp Leu Ser Leu Val Gly Arg Pro Phe Val Ala His Val Leu
 130 135 140
 Ala Val Gly Ser Gly His Ser Ser Asn Ile Ala Phe Gly Lys Lys Ile
 145 150 155 160
 Leu Glu Ala Leu Glu Leu
 165

<210>691

<211>152

<212>PRT

<213>Chlamydia pneumoniae

<400>691

Met Leu Glu Arg Thr Gln Arg Thr Leu Lys Arg Glu Val Arg Tyr Ser
 1 5 10 15
 Gly Val Gly Ile His Leu Gly Lys Ser Ser Thr Leu His Leu Gln Pro
 20 25 30
 Ala Gln Thr Asn Thr Gly Ile Val Phe Gln Arg Gln Ser Ala Ser Gly
 35 40 45
 Asn Tyr Glu Asn Val Pro Ala Leu Leu Asp His Val Tyr Thr Thr Gly
 50 55 60
 Arg Ser Thr Thr Leu Ser Arg Gly Ser Ala Val Ile Ala Thr Val Glu
 65 70 75 80
 His Leu Met Ala Ala Leu Arg Ser Asn Asn Ile Asp Asn Leu Ile Ile
 85 90 95
 Gln Cys Ser Gly Glu Glu Ile Pro Ile Gly Asp Gly Ser Ser Asn Val
 100 105 110
 Phe Val Glu Leu Ile Asp Gln Ala Gly Ile Cys Glu Gln Glu Asp Xaa
 115 120 125
 Gly Phe His Cys Glu Thr Asn Thr Ser Cys Ile Leu Ser Thr Ser Gly
 130 135 140
 His Phe Phe Ser Ser Phe Ser Leu
 145 150

<210>692

<211>541

<212>PRT

<213>Chlamydia pneumoniae

<400>692

Val	Leu	Arg	Ile	Phe	Cys	Phe	Val	Ile	Ser	Trp	Cys	Leu	Ile	Ala	Phe
1				5					10					15	
Ala	Gln	Pro	Asp	Leu	Ser	Gly	Phe	Val	Ser	Ile	Leu	Gly	Ala	Ala	Cys
			20						25				30		
Gly	Tyr	Gly	Phe	Phe	Trp	Tyr	Ser	Leu	Glu	Pro	Leu	Lys	Lys	Pro	Ser
		35					40					45			
Leu	Pro	Leu	Arg	Thr	Leu	Phe	Val	Ser	Cys	Phe	Phe	Trp	Ile	Phe	Thr
	50					55					60				
Ile	Glu	Gly	Ile	His	Phe	Ser	Trp	Met	Leu	Ser	Asp	Gln	Tyr	Ile	Gly
65					70					75					80
Lys	Leu	Ile	Tyr	Leu	Val	Trp	Leu	Thr	Leu	Ile	Thr	Ile	Leu	Ser	Val
				85					90					95	
Leu	Phe	Ser	Gly	Phe	Ser	Cys	Leu	Leu	Val	Ala	Ile	Val	Arg	Gln	Lys
			100						105				110		
Arg	Thr	Ala	Phe	Leu	Trp	Ser	Leu	Pro	Gly	Val	Trp	Val	Ala	Ile	Glu
		115					120					125			
Met	Leu	Arg	Phe	Tyr	Gly	Ile	Phe	Ser	Gly	Met	Ser	Phe	Asp	Tyr	Leu
	130					135					140				
Gly	Trp	Pro	Met	Thr	Ala	Ser	Ala	Tyr	Gly	Arg	Gln	Phe	Gly	Gly	Phe
145					150					155					160
Leu	Gly	Trp	Ala	Gly	Gln	Ser	Phe	Ala	Val	Ile	Ala	Val	Asn	Met	Ser
			165						170					175	
Phe	Tyr	Cys	Leu	Leu	Lys	Lys	Pro	His	Ala	Lys	Met	Leu	Trp	Val	
			180				185					190			
Leu	Thr	Leu	Leu	Leu	Pro	Tyr	Thr	Phe	Gly	Ala	Ile	His	Tyr	Glu	Tyr
		195					200					205			
Leu	Lys	His	Ala	Phe	Gln	Gln	Asp	Lys	Arg	Ala	Leu	Arg	Val	Ala	Val
	210					215					220				
Val	Gln	Pro	Ala	His	Pro	Pro	Ile	Arg	Pro	Lys	Leu	Lys	Ser	Pro	Ile
225					230					235					240
Val	Val	Trp	Glu	Gln	Leu	Leu	Gln	Leu	Val	Ser	Pro	Ile	Gln	Gln	Pro
			245						250					255	
Ile	Asp	Leu	Leu	Ile	Phe	Pro	Glu	Val	Val	Val	Pro	Phe	Gly	Lys	His
		260					265						270		
Arg	Gln	Val	Tyr	Pro	Tyr	Glu	Ser	Cys	Ala	His	Leu	Leu	Ser	Ser	Phe
	275						280					285			
Ala	Pro	Leu	Pro	Glu	Gly	Lys	Ala	Phe	Leu	Ser	Asn	Ser	Asp	Cys	Ala
	290					295					300				
Thr	Ala	Leu	Ser	Gln	His	Phe	Gln	Cys	Pro	Val	Ile	Ile	Gly	Leu	Glu
305					310					315					320
Arg	Trp	Val	Lys	Lys	Glu	Asn	Val	Leu	Tyr	Trp	Tyr	Asn	Ser	Ala	Glu
			325						330					335	
Val	Ile	Ser	His	Lys	Gly	Ile	Ser	Val	Gly	Tyr	Asp	Lys	Arg	Ile	Leu
			340					345					350		
Val	Pro	Gly	Gly	Glu	Tyr	Ile	Pro	Gly	Gly	Lys	Phe	Gly	Ser	Leu	Ile
	355						360					365			
Cys	Arg	Gln	Leu	Phe	Pro	Lys	Tyr	Ala	Leu	Gly	Cys	Lys	Arg	Leu	Pro
	370					375					380				
Gly	Arg	Arg	Ser	Gly	Val	Gln	Val	Arg	Gly	Leu	Pro	Arg	Ile	Gly	
385					390				395					400	
Ile	Thr	Ile	Cys	Tyr	Glu	Glu	Thr	Phe	Gly	Tyr	Arg	Leu	Gln	Ser	Tyr
			405						410					415	
Lys	Arg	Gln	Gly	Ala	Glu	Leu	Leu	Val	Asn	Leu	Thr	Asn	Asp	Gly	Trp
		420						425					430		
Tyr	Pro	Glu	Ser	Arg	Leu	Pro	Lys	Val	His	Phe	Leu	His	Gly	Met	Leu
	435						440					445			
Arg	Asn	Gln	Glu	Phe	Gly	Met	Pro	Cys	Val	Arg	Ala	Cys	Gln	Thr	Gly
	450					455					460				
Val	Thr	Ala	Thr	Val	Asp	Ser	Leu	Gly	Arg	Ile	Leu	Lys	Ile	Leu	Pro
465					470				475						480

<210>693

<211>155

<212>PRT

<213>Chlamydia pneumoniae

<400>693

<210>694

<211>252

<212>PRT

<213>Chlamydia pneumoniae

<400>694

1	Lys	Glu	Ile	Met	Ser	Leu	Leu	Lys	Asp	Thr	Val	Phe	Thr	Cys	Leu	Asp
5											10				15	
10	Cys	Glu	Met	Thr	Gly	Leu	Asp	Val	Lys	Lys	Asp	Arg	Ile	Ile	Glu	Ile
20									25						30	
30	Ala	Ala	Val	Arg	Phe	Thr	Phe	Asp	Ser	Val	Ile	Ser	Ser	Ile	Glu	Phe
35								40						45		
40	Leu	Ile	Asn	Pro	Glu	Arg	Val	Val	Ser	Ala	Glu	Ser	Gln	Arg	Val	His
50							55					60				
55	His	Ile	Ser	Asn	Ala	Met	Leu	Arg	Asp	Gln	Pro	Lys	Ile	Ala	Glu	Val
65						70				75						80
70	Phe	Pro	Gln	Ile	Lys	Ala	Phe	Phe	Lys	Glu	Gly	Asp	Tyr	Ile	Val	Gly
85									90						95	
90	His	Ser	Val	Gly	Phe	Asp	Leu	Gln	Val	Leu	Ala	Gln	Glu	Met	Glu	Arg
100								105						110		
105	Ile	Gly	Glu	Thr	Phe	Leu	Ser	Lys	Tyr	Thr	Ile	Ile	Asp	Thr	Leu	Arg
115								120						125		
120	Leu	Ala	Lys	Glu	Tyr	Gly	Asp	Ser	Pro	Asn	Asn	Ser	Leu	Glu	Ser	Leu
130							135						140			
135	Ala	Val	His	Phe	Asn	Val	Pro	Tyr	Asp	Gly	Asn	His	Arg	Ala	Met	Lys
145						150					155					160
150	Asp	Val	Glu	Ile	Asn	Ile	Asn	Ile	Phe	Lys	His	Leu	Cys	Lys	Arg	Phe
165									170						175	
170	Arg	Thr	Leu	Glu	Gln	Leu	Lys	Gln	Val	Leu	Ala	Lys	Pro	Ile	Lys	Met
180								185						190		
185	Lys	Tyr	Met	Pro	Leu	Gly	Lys	His	Lys	Gly	Arg	Cys	Phe	Ser	Glu	Ile
195								200						205		

Pro Leu Ala Tyr Leu Gln Trp Ala Ser Lys Met Asp Phe Asp Ser Asp
 210 215 220
 Leu Leu Phe Ser Ile Arg His Glu Ile Lys His Arg Gln Lys Gly Thr
 225 230 235 240
 Gly Phe Ser Gln Val Asn Asn Pro Phe Met Glu Leu
 245 250

<210>695

<211>142

<212>PRT

<213>Chlamydia pneumoniae

<400>695

Pro Met Gly Arg Tyr Arg Arg Val Ser His Ser Ser Gln Glu Thr Leu
 1 5 10 15
 Leu Leu Gly Thr Glu Leu Gly Gln Val Leu Val Pro Gly Ala Val Leu
 20 25 30
 Leu Leu Phe Gly Asp Tyr Gly Ala Gly Lys Thr Glu Phe Val Arg Gly
 35 40 45
 Ile Val Ser Gly Tyr Leu Gly Asp Thr Ile Ala Glu Glu Val Ala Ser
 50 55 60
 Pro Ser Phe Ser Ile Leu His Val Tyr Gly Asn Glu Pro Lys Arg Leu
 65 70 75 80
 Cys His Tyr Asp Leu Tyr Arg Ile Asp Gln Lys Asn Gln Glu Tyr Ile
 85 90 95
 Phe Gln Asp Ala Glu Glu Asp Asp Val Leu Cys Ile Glu Trp Ala Asp
 100 105 110
 Arg Leu Pro Lys Pro Arg Phe Cys Asp Thr Ile Asn Ile Tyr Ile Thr
 115 120 125
 Met Gln Thr Asn Met Glu Arg Glu Ile Ile Ile Glu Lys Arg
 130 135 140

<210>696

<211>191

<212>PRT

<213>Chlamydia pneumoniae

<400>696

Phe Ser Lys Leu Xaa Glu Asp Ala Val Arg Ile Leu Glu Gln Asp Lys
 1 5 10 15
 Lys Ile Trp Arg Glu Thr Glu Ile Gln Ile Ser Ser Glu Lys Pro Gln
 20 25 30
 Val Asn Glu Asn Thr Lys Arg Ile Tyr Ile Cys Pro Phe Thr Gly Lys
 35 40 45
 Val Phe Ala Asp Asn Val Tyr Ala Asn Pro Gln Asp Ala Ile Tyr Asp
 50 55 60
 Trp Leu Ser Ser Cys Pro Gln Asn Met Glu Lys Gln Gly Gly Val Arg
 65 70 75 80
 Ile Lys Arg Phe Leu Val Ser Glu Asp Pro Asp Val Ile Lys Glu Tyr
 85 90 95
 Ala Val Pro Pro Lys Glu Pro Ile Ile Lys Thr Val Phe Ala Ser Ala
 100 105 110
 Ile Thr Gly Lys Leu Phe His Ser Leu Pro Pro Leu Leu Glu Asp Phe
 115 120 125
 Ile Ser Ser Tyr Leu Arg Pro Met Thr Leu Glu Glu Val Gln Asn Gln
 130 135 140
 Thr Lys Phe Gln Leu Glu Ser Ser Phe Leu Ser Leu Leu Gln Asp Ala
 145 150 155 160
 Leu Val Glu Asp Lys Ile Ala Ala Phe Ile Glu Ser Leu Ala Asp Asp
 165 170 175
 Thr Ala Phe His Val Tyr Ile Ser Gln Trp Val Asp Thr Glu Glu
 180 185 190

<210>697

<211>102

<212>PRT

<213>Chlamydia pneumoniae

<400>697

Met Val Lys Ile Ile Ser Ser Glu Asn Phe Asp Ser Phe Ile Ala Ser

1 5 10 15
 Gly Leu Val Leu Val Asp Phe Phe Ala Glu Trp Cys Gly Pro Cys Arg
 20 25 30
 Met Leu Thr Pro Ile Leu Glu Asn Leu Ala Ala Glu Leu Pro His Val
 35 40 45
 Thr Ile Gly Lys Ile Asn Ile Asp Glu Asn Ser Lys Pro Ala Glu Thr
 50 55 60
 Tyr Glu Val Ser Ser Ile Pro Thr Leu Ile Leu Phe Lys Asp Gly Asn
 65 70 75 80
 Glu Val Ala Arg Val Val Gly Leu Lys Asp Lys Glu Phe Leu Thr Asn
 85 90 95
 Leu Ile Asn Lys His Ala
 100

<210>698

<211>156

<212>PRT

<213>Chlamydia pneumoniae

<400>698

Met Arg Val Val Leu His Cys Pro Asp Ile Pro Gln Asn Thr Gly Asn
 1 5 10 15
 Ile Gly Arg Thr Cys Val Ala Leu Gly Ala Glu Leu Ile Leu Val Arg
 20 25 30
 Pro Leu Gly Phe Ser Leu Ala Asp Lys Phe Val Lys Arg Ala Gly Met
 35 40 45
 Asp Tyr Trp Asp Lys Leu Gln Leu Thr Val Val Asp Ser Ile Glu Glu
 50 55 60
 Ala Leu His Asp Val Pro Glu Asp Gln Ile Phe Cys Leu Cys Thr Lys
 65 70 75 80
 Gly Ser Ala Ser Tyr Thr Glu Phe Ser Leu Pro Ser Ser Gly Thr Tyr
 85 90 95
 Val Phe Gly Ser Glu Ser Lys Gly Leu Pro Lys Glu Ile Leu Lys Lys
 100 105 110
 Tyr Tyr Lys Asn Cys Leu Arg Ile Pro Met Gln Gln Asp Ile Arg Ser
 115 120 125
 Leu Asn Leu Ala Thr Ser Val Gly Ile Val Leu Tyr Glu Val Val Arg
 130 135 140
 Gln Lys Thr Val Ala Leu Gln Lys Asn Pro Thr Val
 145 150 155

<210>699

<211>258

<212>PRT

<213>Chlamydia pneumoniae

<400>699

Met Asn Arg Arg Trp Asn Leu Val Leu Ala Thr Val Ala Leu Ala Leu
 1 5 10 15
 Ser Val Ala Ser Cys Asp Val Arg Ser Lys Asp Lys Asp Lys Asp Gln
 20 25 30
 Gly Ser Leu Val Glu Tyr Lys Asp Asn Lys Asp Thr Asn Asp Ile Glu
 35 40 45
 Leu Ser Asp Asn Gln Lys Leu Ser Arg Thr Phe Gly His Leu Leu Ala
 50 55 60
 Arg Gln Leu Arg Lys Ser Glu Asp Met Phe Phe Asp Ile Ala Glu Val
 65 70 75 80
 Ala Lys Gly Leu Gln Ala Glu Leu Val Cys Lys Ser Ala Pro Leu Thr
 85 90 95
 Glu Thr Glu Tyr Glu Glu Lys Met Ala Glu Val Gln Lys Leu Val Phe
 100 105 110
 Glu Lys Lys Ser Lys Glu Asn Leu Ser Leu Ala Glu Lys Phe Leu Lys
 115 120 125
 Glu Asn Ser Lys Asn Ala Gly Val Val Glu Val Gln Pro Ser Lys Leu
 130 135 140
 Gln Tyr Lys Ile Ile Lys Glu Gly Ala Gly Lys Ala Ile Ser Gly Lys
 145 150 155 160
 Pro Ser Ala Leu Leu His Tyr Lys Gly Ser Phe Ile Asn Gly Gln Val

				165					170				175			
Phe	Ser	Ser	Ser	Glu	Gly	Asn	Asn	Glu	Pro	Ile	Leu	Leu	Pro	Leu	Gly	
			180					185					190			
Gln	Thr	Ile	Pro	Gly	Phe	Ala	Leu	Gly	Met	Gln	Gly	Met	Lys	Glu	Gly	
		195					200					205				
Glu	Thr	Arg	Val	Leu	Tyr	Ile	His	Pro	Asp	Leu	Ala	Tyr	Gly	Thr	Ala	
	210					215					220					
Gly	Gln	Leu	Pro	Pro	Asn	Ser	Leu	Leu	Ile	Phe	Glu	Ile	Asn	Leu	Ile	
225					230					235					240	
Gln	Ala	Ser	Ala	Asp	Glu	Val	Ala	Ala	Val	Pro	Gln	Glu	Gly	Asn	Gln	
				245					250					255		
Gly	Glu															

<210>700

<211>584

<212>PRT

<213>Chlamydia pneumoniae

<400>700

Met	Lys	Tyr	Arg	Thr	His	Arg	Cys	Asn	Glu	Leu	Thr	Ser	Asn	His	Ile	
1				5				10					15			
Gly	Glu	Asn	Val	Gln	Leu	Ala	Gly	Trp	Val	His	Arg	Tyr	Arg	Asn	His	
		20					25					30				
Gly	Gly	Val	Val	Phe	Ile	Xaa	Leu	Arg	Asp	Arg	Phe	Gly	Ile	Thr	Gln	
	35					40					45					
Ile	Val	Cys	Arg	Glu	Asp	Glu	Gln	Pro	Glu	Leu	His	Gln	Arg	Leu	Asp	
50					55					60						
Ala	Val	Arg	Ser	Glu	Trp	Val	Leu	Ser	Val	Arg	Gly	Lys	Val	Cys	Pro	
65					70					75					80	
Arg	Leu	Ala	Gly	Met	Glu	Asn	Pro	Asn	Leu	Ala	Thr	Gly	His	Ile	Glu	
				85				90						95		
Val	Glu	Val	Ala	Ser	Phe	Glu	Val	Leu	Ser	Lys	Ser	Gln	Asn	Leu	Pro	
		100					105					110				
Phe	Ser	Ile	Ala	Asp	Asp	His	Ile	Asn	Val	Asn	Glu	Glu	Leu	Arg	Leu	
	115					120					125					
Glu	Tyr	Arg	Tyr	Leu	Asp	Met	Arg	Arg	Gly	Asp	Ile	Ile	Glu	Lys	Leu	
	130				135					140						
Leu	Cys	Arg	His	Gln	Val	Met	Leu	Ala	Cys	Arg	Asn	Phe	Met	Asp	Ala	
145				150					155					160		
Gln	Gly	Phe	Thr	Glu	Ile	Val	Thr	Pro	Val	Leu	Gly	Lys	Ser	Thr	Pro	
			165					170						175		
Glu	Gly	Ala	Arg	Asp	Tyr	Leu	Val	Pro	Ser	Arg	Ile	Tyr	Pro	Gly	Lys	
		180					185					190				
Phe	Tyr	Ala	Leu	Pro	Gln	Ser	Pro	Gln	Leu	Phe	Lys	Gln	Leu	Leu	Met	
	195					200					205					
Val	Gly	Gly	Leu	Asp	Arg	Tyr	Phe	Gln	Ile	Ala	Thr	Cys	Phe	Arg	Asp	
	210				215						220					
Glu	Asp	Leu	Arg	Ala	Asp	Arg	Gln	Pro	Glu	Phe	Ala	Gln	Ile	Asp	Ile	
225				230						235				240		
Glu	Met	Ser	Phe	Gly	Asp	Thr	Gln	Asp	Leu	Leu	Pro	Ile	Ile	Glu	Gln	
			245					250						255		
Leu	Val	Ala	Thr	Leu	Phe	Ala	Thr	Gln	Gly	Ile	Glu	Ile	Pro	Leu	Pro	
	260						265						270			
Leu	Ala	Lys	Met	Thr	Tyr	Gln	Glu	Ala	Lys	Asp	Ser	Tyr	Gly	Thr	Asp	
	275					280					285					
Lys	Pro	Asp	Leu	Arg	Phe	Asp	Leu	Lys	Leu	Lys	Asp	Cys	Arg	Asp	Tyr	
	290				295					300						
Ala	Lys	Arg	Ser	Ser	Phe	Ser	Ile	Phe	Leu	Asp	Gln	Leu	Ala	His	Gly	
305				310					315					320		
Gly	Thr	Ile	Lys	Gly	Phe	Cys	Val	Pro	Gly	Gly	Ala	Thr	Met	Ser	Arg	
			325					330					335			
Lys	Gln	Leu	Asp	Gly	Tyr	Thr	Glu	Phe	Val	Lys	Arg	Tyr	Gly	Ala	Met	
	340						345					350				
Gly	Leu	Val	Trp	Ile	Lys	Asn	Gln	Glu	Gly	Lys	Val	Ala	Ser	Asn	Ile	
	355					360						365				

WO 99/27105

Ala Lys Phe Met Asp Glu Glu Val Phe His Glu Leu Phe Ala Tyr Phe
 370 375 380
 Asp Ala Lys Asp Gln Asp Ile Leu Leu Leu Ile Ala Ala Pro Glu Ser
 385 390 395 400
 Val Ala Asn Gln Ser Leu Asp His Leu Arg Arg Leu Ile Ala Lys Glu
 405 410 415
 Arg Glu Leu Tyr Ser Asp Asn Gln Tyr Asn Phe Val Trp Ile Thr Asp
 420 425 430
 Phe Pro Leu Phe Ser Leu Glu Asp Gly Lys Ile Val Ala Glu His His
 435 440 445
 Pro Phe Thr Ala Pro Leu Glu Asp Ile Pro Leu Leu Glu Thr Asp
 450 455 460
 Pro Leu Ala Val Arg Ser Ser Tyr Asp Leu Val Leu Asn Gly Tyr
 465 470 475 480
 Glu Ile Ala Ser Gly Ser Gln Arg Ile His Asn Pro Asp Leu Gln Ser
 485 490 495
 Gln Ile Phe Thr Ile Leu Lys Ile Ser Pro Glu Ser Ile Gln Glu Lys
 500 505 510
 Phe Gly Phe Phe Ile Lys Ala Leu Ser Phe Gly Thr Pro Pro His Leu
 515 520 525
 Gly Ile Ala Leu Gly Leu Asp Arg Leu Val Met Val Leu Thr Ala Ala
 530 535 540
 Glu Ser Ile Arg Glu Val Ile Ala Phe Pro Lys Thr Gln Lys Ala Ser
 545 550 555 560
 Asp Leu Met Met Asn Ala Pro Ser Glu Ile Met Ser Ser Gln Leu Lys
 565 570 575
 Glu Leu Ser Ile Lys Val Ala Phe
 580

<210>701

<211>430

<212>PRT

<213>Chlamydia pneumoniae

<400>701

Val Thr Val Thr Leu Pro Lys Gly Val Phe Asp Ile Phe Pro Tyr Leu
 1 5 10 15
 Ala Asp Ala Lys Gln Leu Trp Arg His Thr Ser Leu Trp His Ser Val
 20 25 30
 Glu Lys Ala Ile His Thr Val Cys Met Leu Tyr Gly Phe Cys Glu Ile
 35 40 45
 Arg Thr Pro Ile Phe Glu Lys Ser Glu Val Phe Leu His Val Gly Glu
 50 55 60
 Glu Ser Asp Val Val Lys Lys Glu Val Tyr Ser Phe Leu Asp Arg Lys
 65 70 75 80
 Gly Arg Ser Met Thr Leu Arg Pro Glu Gly Thr Ala Ala Val Val Arg
 85 90 95
 Ser Phe Leu Glu His Gly Ala Ser His Arg Ser Asp Asn Lys Phe Tyr
 100 105 110
 Tyr Ile Leu Pro Met Phe Arg Tyr Glu Arg Gln Gln Ala Gly Arg Tyr
 115 120 125
 Arg Gln His His Gln Phe Gly Val Glu Ala Ile Gly Val Arg His Pro
 130 135 140
 Leu Arg Asp Ala Glu Val Leu Ala Leu Leu Trp Asp Phe Tyr Ser Arg
 145 150 155 160
 Val Gly Leu Gln His Met Gln Ile Gln Leu Asn Phe Leu Gly Gly Ser
 165 170 175
 Glu Thr Arg Phe Arg Tyr Asp Lys Val Leu Arg Ala Tyr Leu Lys Glu
 180 185 190
 Ser Met Gly Glu Leu Ser Ala Leu Ser Gln Gln Arg Phe Ser Thr Asn
 195 200 205
 Val Leu Arg Ile Leu Asp Ser Lys Glu Pro Glu Asp Gln Glu Ile Ile
 210 215 220
 Arg Gln Ala Pro Pro Ile Leu Asp Tyr Val Ser Asp Glu Asp Leu Lys
 225 230 235 240
 Tyr Phe Asn Glu Ile Leu Asp Ala Leu Arg Val Leu Glu Ile Pro Tyr

245 250 255
 Ala Ile Asn Pro Arg Leu Val Arg Gly Leu Asp Tyr Tyr Ser Asp Leu
 260 265 270
 Val Phe Glu Ala Thr Thr Thr Phe Gln Glu Val Ser Tyr Ala Leu Gly
 275 280 285
 Gly Gly Gly Arg Tyr Asp Gly Leu Ile Ser Ala Phe Gly Gly Ala Ser
 290 295 300
 Leu Pro Ala Cys Gly Phe Gly Val Gly Leu Glu Arg Ala Ile Gln Thr
 305 310 315 320
 Leu Leu Ala Gln Lys Arg Ile Glu Pro Gln Phe Pro His Lys Leu Arg
 325 330 335
 Leu Ile Pro Met Glu Pro Asp Ala Asp Gln Phe Cys Leu Glu Trp Ser
 340 345 350
 Gln His Leu Arg Arg Leu Gly Ile Pro Thr Glu Val Asp Trp Ser His
 355 360 365
 Lys Lys Val Lys Gly Ala Leu Lys Ala Ala Ser Thr Glu Gln Val Ser
 370 375 380
 Phe Val Cys Leu Ile Gly Glu Arg Glu Leu Ile Ser Gln Gln Leu Val
 385 390 395 400
 Ile Lys Asn Met Ser Leu Arg Lys Glu Phe Phe Gly Thr Lys Glu Glu
 405 410 415
 Val Glu Gln Arg Leu Leu Tyr Glu Ile Gln Asn Thr Pro Leu
 420 425 430

<210>702

<211>352

<212>PRT

<213>Chlamydia pneumoniae

<400>702

Met Asn Val Trp Thr Lys Phe Phe Gln Pro Pro Lys His Ile Lys Glu
 1 5 10 15
 Ile Glu Asp Gln Glu Val Val Lys Lys Lys Tyr Lys Tyr Trp Arg Ile
 20 25 30
 Arg Ile Phe Tyr Ser Met Phe Ile Gly Tyr Ile Phe Tyr Tyr Phe Thr
 35 40 45
 Arg Lys Ser Phe Thr Phe Ala Met Pro Thr Leu Ile Ala Asp Leu Gly
 50 55 60
 Phe Asp Lys Ala Gln Leu Gly Ile Ile Gly Ser Thr Leu Tyr Phe Ser
 65 70 75 80
 Tyr Gly Ile Ser Lys Phe Val Ser Gly Val Met Ser Asp Gln Ser Asn
 85 90 95
 Pro Arg Tyr Phe Met Ala Ile Gly Leu Met Ile Thr Gly Leu Thr Asn
 100 105 110
 Ile Phe Phe Gly Met Ser Ser Ser Ile Val Leu Phe Ala Leu Trp Trp
 115 120 125
 Gly Leu Asn Gly Trp Phe Gln Gly Trp Gly Trp Pro Pro Cys Ala Arg
 130 135 140
 Leu Leu Thr His Trp Tyr Ala Lys Ser Glu Arg Gly Thr Trp Trp Ser
 145 150 155 160
 Val Trp Ser Thr Ser His Asn Ile Gly Gly Ala Leu Ile Pro Ile Leu
 165 170 175
 Thr Gly Phe Ile Asp Tyr Ser Gly Trp Arg Gly Ala Met Tyr Val
 180 185 190
 Pro Gly Ile Leu Cys Ile Gly Met Gly Leu Val Leu Ile Asn Arg Leu
 195 200 205
 Arg Asp Thr Pro Gln Ser Leu Gly Leu Pro Pro Ile Glu Lys Tyr Lys
 210 215 220
 Arg Asp Pro His His Ala His His Glu Gly Lys Ser Ala Ser Glu Gly
 225 230 235 240
 Thr Glu Glu Ile Glu Arg Glu Leu Ser Thr Arg Glu Ile Leu Phe Thr
 245 250 255
 Tyr Val Leu Thr Asn Gln Trp Leu Trp Phe Leu Ala Ala Ala Ser Phe
 260 265 270
 Phe Ile Tyr Ile Val Arg Met Ala Val Asn Asp Trp Ser Ala Leu Phe
 275 280 285

WO 99/27105

Leu Ile Glu Thr Lys His Tyr Ala Ala Val Lys Ala Asn Phe Cys Val
 290 295 300
 Ser Leu Phe Glu Ile Gly Gly Leu Phe Gly Met Leu Val Ala Gly Trp
 305 310 315 320
 Leu Ser Asp Lys Ile Ser Lys Gly Asn Arg Gly Pro Met Lys Arg Pro
 325 330 335
 Leu Leu Phe Arg Phe Ala Val Cys Tyr Phe Arg His Val Val Phe Thr
 340 345 350

<210>703

<211>122

<212>PRT

<213>Chlamydia pneumoniae

<400>703

Asn Val Leu Phe Ser Leu Gly Leu Leu Phe Ala Ile Leu Gly Met Trp
 1 5 10 15
 Phe Ser Arg Ser His Asn Gln Trp Trp Val Asp Gly Thr Leu Leu Phe
 20 25 30
 Val Ile Gly Phe Phe Leu Tyr Gly Pro Gln Met Met Ile Gly Leu Ala
 35 40 45
 Ala Ala Glu Leu Ser His Lys Lys Ala Ala Gly Thr Ala Ser Gly Phe
 50 55 60
 Thr Gly Trp Phe Ala Tyr Phe Gly Ala Thr Phe Ala Gly Tyr Pro Leu
 65 70 75 80
 Gly Lys Val Thr Asp Val Trp Gly Trp Lys Gly Phe Phe Ile Ala Leu
 85 90 95
 Leu Ala Cys Ala Ser Ile Ala Leu Leu Leu Phe Leu Pro Thr Trp Asn
 100 105 110
 Ala Thr Glu Lys Asn Thr Arg Ser Lys Ala
 115 120

<210>704

<211>1243

<212>PRT

<213>Chlamydia pneumoniae

<400>704

Gly Phe Phe Leu Thr Trp Ile Pro Leu His Cys His Ser Gln Tyr Ser
 1 5 10 15
 Val Leu Asp Ala Met Ser Ser Ile Lys Asp Phe Val Ala Lys Gly Gln
 20 25 30
 Glu Phe Gly Ile Pro Ala Leu Ala Leu Thr Asp His Gly Asn Leu Tyr
 35 40 45
 Gly Ala Val Asp Phe Tyr Lys Glu Cys Thr Gln Lys Gly Ile Gln Pro
 50 55 60
 Ile Ile Gly Cys Glu Cys Tyr Ile Ala Pro Gly Ser Arg Phe Asp Lys
 65 70 75 80
 Lys Lys Glu Lys Arg Ser Arg Ala Ala His His Leu Ile Leu Leu Cys
 85 90 95
 Lys Asn Glu Gln Gly Tyr Arg Asn Leu Cys Ile Leu Thr Ser Leu Ala
 100 105 110
 Phe Thr Glu Gly Phe Tyr Tyr Phe Pro Arg Ile Asp Lys Asp Leu Leu
 115 120 125
 Arg Gln Tyr Ser Glu Gly Leu Ile Cys Leu Ser Gly Cys Leu Ser Ser
 130 135 140
 Ser Val Ser Asp Ala Ala Leu Lys Ser Pro Glu Ala Leu Leu Leu Glu
 145 150 155 160
 Leu Gln Trp Phe Gln Asp Leu Phe Lys Asp Asp Tyr Phe Thr Glu Val
 165 170 175
 Gln Leu His Lys Met Ser Glu Glu Ser Ile Ala Gly Phe Lys Glu Glu
 180 185 190
 Trp Leu Lys Gln Glu Tyr Tyr Ser Leu Ile Glu Lys Gln Ile Lys Val
 195 200 205
 Asn Thr Ala Val Leu Glu Ala Ser Lys Arg Leu Gly Ile Pro Thr Val
 210 215 220
 Ala Thr Asn Asp Ile His Tyr Ile Asn Ala Asn Asp Trp Gln Ala His
 225 230 235 240

Glu Ile Leu Leu Asn Val Gln Ser Gly Glu Thr Val Arg Ile Ala Lys
 245 250 255
 Gln Asn Thr His Ile Pro Asn Pro Lys Arg Lys Val Tyr Arg Ser Arg
 260 265 270
 Glu Tyr Tyr Phe Lys Ser Pro Ala Gln Met Ala Glu Leu Phe Lys Asp
 275 280 285
 Ile Pro Glu Val Ile Ser Asn Thr Leu Glu Val Ala Lys Arg Cys Asp
 290 295 300
 Phe Thr Phe Asp Phe Ser Lys Lys His Tyr Pro Ile Tyr Val Pro Glu
 305 310 315 320
 Ser Leu Lys Thr Leu Asn Ser Tyr Thr Glu Glu Asp Arg Tyr Gln Ala
 325 330 335
 Ser Ala Val Phe Leu Lys Gln Leu Ala Glu Glu Ala Leu Pro Lys Lys
 340 345 350
 Tyr Ser Ser Glu Val Leu Ala His Ile Ala Lys Lys Phe Pro His Arg
 355 360 365
 Asp Pro Ile Asp Ile Val Lys Glu Arg Met Asp Met Glu Met Ala Ile
 370 375 380
 Ile Ile Pro Lys Gly Met Cys Asp Tyr Leu Leu Ile Val Trp Asp Ile
 385 390 395 400
 Ile His Trp Ala Lys Ala Asn Gly Ile Pro Val Gly Pro Gly Arg Gly
 405 410 415
 Ser Gly Ala Gly Ser Val Leu Leu Phe Leu Leu Gly Ile Thr Glu Ile
 420 425 430
 Glu Pro Ile Arg Phe Asp Leu Phe Glu Arg Phe Ile Asn Pro Glu
 435 440 445
 Arg Leu Ser Tyr Pro Asp Ile Asp Ile Asp Ile Cys Met Ala Gly Arg
 450 455 460
 Glu Arg Val Ile Asn Tyr Ala Ile Glu Arg His Gly Lys Asp Asn Val
 465 470 475 480
 Ala Gln Ile Ile Thr Phe Gly Thr Met Lys Ala Lys Met Ala Val Lys
 485 490 495
 Asp Val Gly Arg Thr Leu Asp Met Ala Leu Ser Lys Val Asn His Ile
 500 505 510
 Ala Lys His Ile Pro Asp Leu Asn Thr Thr Leu Ser Lys Ala Leu Glu
 515 520 525
 Thr Asp Pro Asp Leu His Gln Leu Tyr Ile Asn Asp Ala Glu Ser Ala
 530 535 540
 Gln Val Ile Asp Met Ala Leu Cys Leu Glu Gly Ser Ile Arg Asn Thr
 545 550 555 560
 Gly Val His Ala Ala Gly Val Ile Ile Cys Gly Asp Gln Leu Thr Asn
 565 570 575
 His Ile Pro Ile Cys Ile Ser Lys Asp Ser Thr Met Ile Thr Thr Gln
 580 585 590
 Tyr Ser Met Lys Pro Val Glu Ser Val Gly Met Leu Lys Val Asp Leu
 595 600 605
 Leu Gly Leu Lys Thr Leu Thr Ser Ile Asn Ile Ala Met Ser Ala Ile
 610 615 620
 Glu Lys Lys Thr Gly Gln Ser Leu Ala Met Ala Thr Leu Pro Leu Asp
 625 630 635 640
 Asp Ala Thr Thr Phe Ser Leu Leu His Gln Gly Lys Thr Met Gly Ile
 645 650 655
 Phe Gln Met Glu Ser Lys Gly Met Gln Glu Leu Ala Lys Asn Leu Arg
 660 665 670
 Pro Asp Leu Phe Glu Glu Ile Ile Ala Met Gly Ala Leu Tyr Arg Pro
 675 680 685
 Gly Pro Met Asp Met Ile Pro Ser Phe Ile Asn Arg Lys His Gly Lys
 690 695 700
 Glu Ile Ile Glu Tyr Asp His Pro Leu Met Glu Ser Ile Leu Lys Glu
 705 710 715 720
 Thr Tyr Gly Ile Met Val Tyr Gln Glu Gln Val Met Gln Ile Ala Gly
 725 730 735
 Ala Leu Ala Ser Tyr Ser Leu Gly Glu Gly Asp Val Leu Arg Arg Ala
 740 745 750

WO 99/27105

Met Gly Lys Lys Asp Phe Gln Gln Met Glu Gln Glu Arg Glu Lys Phe
 755 760 765
 Cys Lys Arg Ala Cys Asn Asn Gly Ile Asp Pro Glu Leu Ala Thr Val
 770 775 780
 Ile Phe Asp Lys Met Glu Lys Phe Ala Ala Tyr Gly Phe Asn Lys Ser
 785 790 795 800
 His Ala Ala Ala Tyr Gly Leu Ile Thr Tyr Thr Thr Ala Tyr Leu Lys
 805 810 815
 Ala Asn Tyr Pro Lys Glu Trp Leu Ala Leu Leu Thr Cys Asp Ser
 820 825 830
 Asp Asp Ile Glu Lys Ile Gly Lys Leu Ile Arg Glu Ala Gln Ser Met
 835 840 845
 Gly Ile Pro Ile Leu Pro Pro His Ile Asn Val Ser Ser Asn His Phe
 850 855 860
 Val Ala Thr Asp Glu Gly Ile Arg Phe Ala Met Gly Ala Ile Lys Gly
 865 870 875 880
 Ile Gly Arg Gly Leu Ile Glu Ser Ile Val Glu Glu Arg Asp His His
 885 890 895
 Gly Pro Tyr Glu Ser Ile Arg Asp Phe Ile Gln Arg Ser Asp Leu Lys
 900 905 910
 Lys Val Ser Lys Lys Ser Ile Glu Ser Leu Ile Asp Ala Gly Cys Phe
 915 920 925
 Asp Cys Phe Asp Ser Asn Arg Asp Leu Leu Leu Ala Ser Val Glu Pro
 930 935 940
 Leu Tyr Glu Ala Ile Ala Lys Asp Lys Lys Glu Ala Ala Ser Gly Val
 945 950 955 960
 Met Thr Phe Phe Thr Leu Gly Ala Met Asp Arg Lys Asn Glu Val Pro
 965 970 975
 Ile Cys Leu Pro Lys Asp Ile Pro Thr Arg Ser Lys Lys Glu Leu Leu
 980 985 990
 Lys Lys Glu Lys Glu Leu Leu Gly Ile Tyr Leu Thr Glu His Pro Met
 995 1000 1005
 Asp Thr Val Arg Asp His Leu Ser Arg Leu Ser Val Val Leu Ala Gly
 1010 1015 1020
 Glu Phe Glu Asn Leu Pro His Gly Ser Val Val Arg Thr Val Phe Ile
 1025 1030 1035 1040
 Ile Asp Lys Val Thr Thr Lys Ile Ser Ser Lys Ala Gln Lys Lys Phe
 1045 1050 1055
 Ala Val Leu Arg Val Ser Asp Gly Ile Asp Ser Tyr Glu Leu Pro Ile
 1060 1065 1070
 Trp Pro Asp Met Tyr Glu Glu Gln Gln Glu Leu Leu Glu Glu Asp Arg
 1075 1080 1085
 Leu Ile Tyr Ala Ile Leu Val Leu Asp Lys Arg Ser Asp Ser Leu Arg
 1090 1095 1100
 Ile Ser Cys Arg Trp Met Lys Asp Leu Ser Ile Val Asn Glu Asn Ile
 1105 1110 1115 1120
 Ile Tyr Glu Cys Asp Gln Ala Phe Asp Arg Ile Lys Asn Gln Val Gln
 1125 1130 1135
 Lys Met Ser Phe Thr Met Ser Thr Ser Gly Lys Glu Thr Lys Ala Lys
 1140 1145 1150
 Gly Asn Lys Pro Asn Glu Asn Gly His Thr Gln Ala Leu Ala Pro Val
 1155 1160 1165
 Thr Leu Ser Leu Asp Leu Asn Glu Leu Arg His Ser His Leu Cys Ile
 1170 1175 1180
 Leu Lys Lys Ile Val Gln Lys His Pro Gly Ser Arg Thr Leu Val Leu
 1185 1190 1195 1200
 Val Phe Thr Gln Asp Asn Glu Arg Val Ala Ser Met Ser Pro Asp Asp
 1205 1210 1215
 Ala Tyr Phe Val Cys Glu Asp Ile Glu Glu Leu Arg Gln Glu Leu Val
 1220 1225 1230
 Thr Ala Asp Leu Pro Val Arg Val Ile Thr Val
 1235 1240

<210>705

<211>307

<212>PRT
 <213>Chlamydia pneumoniae
 <400>705
 Asn Ile Ser Leu Leu Cys Lys Ile Gln Lys Arg Tyr Phe Met Lys Lys
 1 5 10 15
 Leu Ile Leu Tyr Phe Ala Ala Phe Val Ala Ser Leu Phe Cys Gly Val
 20 25 30
 Phe Leu Trp Asp Arg Val Pro Cys Ala Gln Lys Ile Met Arg Leu Ala
 35 40 45
 Ala Asp His Ser Ser Glu Val Phe Ser Lys Ser Cys Arg Phe Val Arg
 50 55 60
 Lys Ile Ser Gly Phe Glu Glu Leu Gln Val Phe Glu Arg His Val Ser
 65 70 75 80
 Pro Glu Gln Ala Leu Ala Leu Phe Pro Glu Tyr Arg Asp Gly Lys Ser
 85 90 95
 Phe Val Glu Leu Ala Phe Ile Pro His Thr Leu Met His Val Arg Phe
 100 105 110
 Ser Lys Glu Glu Pro Val Lys Lys His Ile Ile Ser Gln Glu Gly Glu
 115 120 125
 Ile Leu Trp Ser Leu Val Asn Gly Glu Met Val Leu His Thr Gly Thr
 130 135 140
 Trp Thr Cys Ser Lys Gly Phe Arg Glu Cys Leu Leu Leu His Ala Gly
 145 150 155 160
 Lys Gln Asp Met Arg Val Ile Gln Thr Leu Ala Thr Leu Gly Gly Thr
 165 170 175
 Thr Ser Arg Glu Ser Leu Ala Gln Ala Leu Ala Leu Lys Asn Ile Arg
 180 185 190
 Ala Glu Arg Val Ile Lys Glu Cys Gln Lys Lys Lys Leu Ile Phe Ala
 195 200 205
 Ser Gly Asn Gln Ile Gly Thr His Phe Gln Gln Phe Gln Pro Ile Arg
 210 215 220
 Gly Cys Thr Thr Thr Leu Asn Asn Asn Pro Val Trp Leu Gln Lys Pro
 225 230 235 240
 Arg His Ala Ala Val Phe Pro Ala Gln Tyr Ser Glu Asp Arg Val Arg
 245 250 255
 His Leu Val Lys Met Ile Phe Gly Asp Asn Phe Leu Ile Val Arg Ser
 260 265 270
 Ser Met Val Tyr Val Pro Val Tyr Lys Ile Ser Leu Val Ser Ala Asp
 275 280 285
 Asn Ser Val Arg Val Glu Tyr Ile Asn Ala Val Thr Gly Lys Ser Phe
 290 295 300
 Gln Asp Leu
 305

<210>706

<211>171

<212>PRT

<213>Chlamydia pneumoniae

<400>706

Trp Arg Phe Val Val Val Ser Pro Arg Leu Ile Met Lys Phe Leu Leu
 1 5 10 15
 Tyr Val Pro Leu Leu Val Leu Val Ser Thr Gly Cys Asp Ala Lys
 20 25 30
 Pro Val Ser Phe Glu Pro Phe Ser Gly Lys Leu Ser Thr Gln Arg Phe
 35 40 45
 Glu Pro Gln His Ser Ala Glu Glu Tyr Phe Ser Gln Gly Gln Glu Phe
 50 55 60
 Leu Lys Lys Gly Asn Phe Arg Lys Ala Leu Leu Cys Phe Gly Ile Ile
 65 70 75 80
 Thr His His Phe Pro Arg Asp Ile Leu Arg Asn Gln Ala Gln Tyr Leu
 85 90 95
 Ile Gly Val Cys Tyr Phe Thr Gln Asp His Pro Asp Leu Ala Asp Lys
 100 105 110
 Ala Phe Ala Ser Tyr Leu Gln Leu Pro Asp Ala Glu Tyr Ser Glu Glu
 115 120 125

Leu Phe Gln Met Lys Tyr Ala Ile Ala Gln Arg Phe Ala Gln Gly Lys
 130 135 140
 Arg Lys Arg Ile Cys Arg Leu Glu Gly Phe Pro Lys Leu Met Asn Ala
 145 150 155 160
 Asp Glu Asp Ala Tyr Ala Phe Met Thr Arg Phe
 165 170

<210>707

<211>167

<212>PRT

<213>Chlamydia pneumoniae

<400>707

Arg Cys Val Arg Ile Tyr Asp Glu Ile Leu Thr Ala Phe Pro Ser Lys
 1 5 10 15
 Asp Leu Gly Ala Gln Ala Leu Tyr Ser Lys Ala Ala Leu Leu Ile Val
 20 25 30
 Lys Asn Asp Leu Thr Glu Ala Thr Lys Thr Leu Lys Lys Leu Thr Leu
 35 40 45
 Gln Phe Pro Leu His Ile Leu Ser Ser Glu Ala Phe Val Arg Leu Ser
 50 55 60
 Glu Ile Tyr Leu Gln Gln Ala Lys Lys Glu Pro His Asn Leu Gln Tyr
 65 70 75 80
 Leu His Phe Ala Lys Leu Asn Glu Glu Ala Met Lys Lys Gln His Pro
 85 90 95
 Asn His Pro Leu Asn Glu Val Val Ser Ala Asn Val Gly Ala Met Arg
 100 105 110
 Glu His Tyr Ala Arg Gly Leu Tyr Ala Thr Gly Arg Phe Tyr Glu Lys
 115 120 125
 Lys Lys Lys Ala Glu Ala Ala Asn Ile Tyr Tyr Arg Thr Ala Ile Thr
 130 135 140
 Asn Tyr Pro Asp Thr Leu Leu Val Ala Lys Cys Gln Lys Arg Leu Asp
 145 150 155 160
 Arg Ile Ser Lys His Thr Ser
 165

<210>708

<211>212

<212>PRT

<213>Chlamydia pneumoniae

<400>708

Ile Glu Tyr Leu Ser Ile Leu Pro Lys Ile Glu Ile Asn Met Arg Leu
 1 5 10 15
 Phe Ser Leu Gly Thr Ile Tyr Leu Phe Phe Ser Leu Ala Leu Ser Ser
 20 25 30
 Cys Cys Gly Tyr Ser Ile Leu Asn Ser Pro Tyr His Leu Ser Ser Leu
 35 40 45
 Gly Lys Ser Leu Leu Gln Glu Arg Ile Phe Ile Ala Pro Ile Lys Glu
 50 55 60
 Asp Pro His Gly Gln Leu Cys Ser Ala Leu Thr Tyr Glu Leu Ser Lys
 65 70 75 80
 Arg Ser Phe Ala Ile Ser Gly Arg Ser Ser Cys Ala Gly Tyr Thr Leu
 85 90 95
 Lys Val Glu Leu Leu Asn Gly Ile Asp Lys Asn Ile Gly Phe Thr Tyr
 100 105 110
 Ala Pro Asn Lys Leu Gly Asp Lys Thr His Arg His Phe Ile Val Ser
 115 120 125
 Asn Glu Gly Arg Leu Ser Leu Ser Ala Lys Val Gln Leu Ile Asn Asn
 130 135 140
 Asp Thr Gln Glu Val Leu Ile Asp Gln Cys Val Ala Arg Glu Ser Val
 145 150 155 160
 Asp Phe Asp Phe Glu Pro Asp Leu Gly Thr Ala Asn Ala His Glu Phe
 165 170 175
 Ala Leu Gly Gln Phe Glu Met His Ser Glu Ala Ile Lys Ser Ala Arg
 180 185 190
 Arg Ile Leu Ser Ile Arg Leu Ala Glu Thr Ile Ala Gln Gln Val Tyr
 195 200 205

Tyr Asp Leu Phe
 210
 <210>709
 <211>150
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>709
 Leu Leu Asn Arg Tyr Thr Met Thr Phe Phe Glu Gly Glu Thr Val Phe
 1 5 10 15
 Pro Ala Val Leu Ser Glu Leu His Ser Met Leu Asp Leu Ile Lys Arg
 20 25 30
 Ala Gly Lys Gln Ser Lys Cys Pro Gln Glu Lys Leu Leu Lys Leu Glu
 35 40 45
 Leu Ala Cys Glu Glu Leu Leu Val Asn Ile Ile Ser Tyr Ala Tyr Gln
 50 55 60
 Gly Glu Asn Ser Pro Gly Thr Ile Ala Ile Ser Cys Ile Ser His Arg
 65 70 75 80
 Gly Asp Leu Glu Val Val Ile Lys Asp His Gly Pro Ser Phe Asn Pro
 85 90 95
 Leu Ala Val Ser Ile Asn Ile Gln Glu Asp Leu Pro Leu Glu Gln Arg
 100 105 110
 Lys Leu Gly Gly Leu Gly Ile Phe Leu Ala Lys Ser Ser Val Asp Glu
 115 120 125
 Phe Leu Tyr Ala Arg Glu Asp His Cys Asn Ile Val His Leu Lys Met
 130 135 140
 Leu Asn Gly Gln His Ser
 145 150

<210>710
 <211>152
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>710
 Arg Ile Thr Ile Asn Gln Arg Lys Tyr Thr Met Ser Leu Asp Phe Phe
 1 5 10 15
 Glu Glu Phe Tyr His Gln Ser Ile Leu Asn Thr Gly Thr Ser Phe Pro
 20 25 30
 Glu Gly Tyr Leu Asn Ile Ala Glu Ile Leu Ser Tyr Pro His Cys Thr
 35 40 45
 Asp Ala Asn Thr Asp Phe Leu Cys Ser Gln Ser Asp Asn Asp Phe Ile
 50 55 60
 Ile Ala Glu Ser Lys Asp Lys Leu Thr Leu Phe Asn Ala Asp Phe Ala
 65 70 75 80
 Ile Trp Leu Val Pro Glu Leu Val Gln Gly Gln Ala Val Thr Arg Gly
 85 90 95
 Tyr Ile Ala Val Ser Gln Gly Glu Gly Asn Tyr Glu Pro Glu Met Ala
 100 105 110
 Phe Glu Ala Ser Gly Gln Tyr Asn Gln Ser Ser Leu Ile Leu Glu Ala
 115 120 125
 Leu Gln Leu Tyr Leu Lys Asp Ile Lys Asp Thr Glu Asn Ala Leu Arg
 130 135 140
 Ser Phe Arg Phe Asn Asn Asp His
 145 150

<210>711
 <211>436
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>711
 Met Lys Arg Pro Phe Phe Thr Tyr Leu Cys Ile Ile Phe Tyr Gly Ser
 1 5 10 15
 Cys Ala Ser Leu Ser Leu His Ala Gly Leu Ser Phe Pro Glu Val Arg
 20 25 30
 Gly Ala Thr Ala Ala Val Val His Ala Asp Ser Gly Lys Val Phe Tyr
 35 40 45
 Asp Lys Asp Ile Asp Ala Val Ile Tyr Pro Ala Ser Met Thr Lys Ile

50 55 60
 Ala Thr Ala Leu Phe Ile Leu Lys His Tyr Pro Thr Val Leu Asp Thr
 65 70 75 80
 Leu Ile Lys Val Lys Gln Asp Ala Ile Ala Ser Ile Thr Pro Gln Ala
 85 90 95
 Lys Lys Gln Ser Gly Tyr Arg Ser Pro Pro His Trp Leu Glu Thr Asp
 100 105 110
 Gly Ser Thr Ile Gln Leu His Leu Arg Glu Glu Leu Leu Gly Trp Asp
 115 120 125
 Leu Phe His Ala Leu Leu Val Cys Ser Ala Asn Asp Ala Ala Asn Val
 130 135 140
 Leu Ala Met Ala Cys Cys Gly Ser Val Glu Lys Phe Met Asp Lys Leu
 145 150 155 160
 Asn Phe Phe Leu Lys Glu Glu Ile Gly Cys Thr His Thr His Phe Asn
 165 170 175
 Asn Pro His Gly Leu His His Pro Asn His Tyr Thr Thr Thr Arg Asp
 180 185 190
 Leu Ile Ser Ile Met Arg Cys Ala Leu Lys Glu Pro Pro Phe Arg Gly
 195 200 205
 Val Ile Ser Thr Thr Ser Tyr Lys Ile Gly Ala Thr Asn Leu His Gly
 210 215 220
 Glu Arg Ile Leu Ser Pro Thr Asn Lys Leu Leu Leu Pro Gly Ser Thr
 225 230 235 240
 Tyr His Tyr Pro Pro Ala Leu Gly Gly Lys Thr Gly Thr Thr Lys Thr
 245 250 255
 Ala Gly Lys Asn Leu Ile Met Ala Ala Glu Lys Asn Asn Arg Leu Leu
 260 265 270
 Val Thr Ile Ala Thr Gly Tyr Ser Gly Pro Val Ser Asp Leu Tyr Gln
 275 280 285
 Asp Val Ile Ala Leu Cys Glu Thr Val Phe Asn Glu Pro Leu Leu Arg
 290 295 300
 Lys Glu Leu Val Pro Pro Ser Asp Cys Leu Gln Leu Glu Ile Ala Asn
 305 310 315 320
 Leu Gly Lys Leu Ser Cys Pro Leu Pro Glu Gly Leu Tyr Tyr Asp Phe
 325 330 335
 Tyr Ala Ser Glu Asp Arg Glu Pro Leu Ser Val Ser Phe Ile Ala His
 340 345 350
 Ala Asp Ala Phe Pro Ile Glu Gln Gly Asp Leu Leu Gly His Trp Val
 355 360 365
 Phe Tyr Asp Asp Glu Gly Lys Lys Ile Ser Ser Gln Pro Phe Tyr Ala
 370 375 380
 Pro Cys Arg Phe Glu Arg Thr Ile Lys Pro Trp Lys Leu Tyr Met Lys
 385 390 395 400
 Arg Val Phe Thr Ser Tyr Arg Thr Tyr Met Ser Ile Thr Met Leu Leu
 405 410 415
 Met Tyr Phe Arg Ile Arg Lys His Arg Lys Tyr Lys Asn Leu Lys His
 420 425 430
 Tyr Ser Lys Ile
 435

<210>712

<211>371

<212>PRT

<213>Chlamydia pneumoniae

<400>712

Arg Gly Ile Leu Tyr Val Thr Met Val Pro Phe Arg Gln His His Ala
 1 5 10 15
 Tyr Gln Leu Leu Lys Gln Leu His Thr Ser Ala Ile Ser Glu Ala Asp
 20 25 30
 Arg Val Ser Tyr Tyr Phe Lys Gln Asn Arg Ser Leu Gly Ser Lys Asp
 35 40 45
 Arg Gln Trp Ile Gln Asn Ile Ile Phe Asn Ile Leu Arg His Arg Arg
 50 55 60
 Leu Leu Glu Thr Leu Ile Leu Asp Ser Gly Glu Gln Val Thr Pro Glu
 65 70 75 80

165 170 175
 Arg Leu Ala Ala Asp Ala Ser Leu Gln Met Ile Ile Glu Ala Leu Thr
 180 185 190
 Thr Leu Leu Glu Gly His Thr Ala Tyr Leu Pro Leu Ser Leu Glu Leu
 195 200 205
 Leu Asn Gln Phe Ile Gly Glu Lys Ala Gln Pro Leu Lys Thr Leu Ser
 210 215 220
 Glu Lys Ser Tyr Val Leu Leu Arg Glu Leu Ile Gln Leu Phe Ser Leu
 225 230 235 240
 Ser Ala Glu Asp Phe Gln Thr Ile Ile Met Ser Ile Ile Ser Asp Ser
 245 250 255
 Leu Ser Glu Val Leu Ala Asn Ser Leu Ile Gly Asn Gln Pro Leu Thr
 260 265 270
 Phe His Gly Lys Thr Phe Val Gly Leu Trp Gln Glu Thr Ala Leu Ala
 275 280 285
 Ser Pro Glu Asp Ser Lys Leu Ala Leu Gly Phe Leu Ala Glu Val Leu
 290 295 300
 Arg Lys Val Ile Val Glu Lys Lys Leu His Val Ser Lys Ser Asp Asn
 305 310 315 320
 Thr Thr Pro Glu Glu Val Gly Asn Ile Tyr Ser Ile Arg Asp Gln Asn
 325 330 335
 Pro Ala Leu Trp Asp Lys Met Ile Thr Met Leu Leu Met Arg Trp Leu
 340 345 350
 Leu Asp Tyr Asp Arg Asp Ile Gly Ile Ala Leu Arg Lys Ala Ala Glu
 355 360 365
 Tyr Tyr Asn Pro His Pro Ser Phe Trp Arg Gln Phe Leu Arg Leu Trp
 370 375 380
 Gln Arg Arg Pro
 385

<210>714

<211>82

<212>PRT

<213>Chlamydia pneumoniae

<400>714

Phe Thr Ser Pro Tyr Leu Gly Ala Gly Gln Cys Val Ser Val Val Asp
 1 5 10 15
 Asn Leu Lys Thr Tyr Asp Leu Gly Arg Asn Tyr Thr Gln Val Leu Ala
 20 25 30
 Cys Ala Ser Gln Ile Asp Glu Phe Ala Asp Lys Gly Glu Asn Glu Ala
 35 40 45
 Leu Val Met Lys Asp Ile Leu Tyr Leu Val Arg Gln Asp Arg Ser Lys
 50 55 60
 Glu Leu Gly Asp Phe Leu Met Met Trp Ser Glu Glu His Ala Ser Glu
 65 70 75 80
 Val Asn

<210>715

<211>264

<212>PRT

<213>Chlamydia pneumoniae

<400>715

Ser Met Gly Thr Pro Ile Ser Gly Asn Asp Gly Asp Arg Asn Thr Ile
 1 5 10 15
 Ser Asp Pro Leu Glu Glu Ser Ala Ala Glu Glu Gly Asp Ser Asp Leu
 20 25 30
 Glu Asp Arg Val Ser Glu Ser Ala Thr Gln Val Ile Glu Thr Ile Ala
 35 40 45
 Asp Thr Gly Ile Pro Glu Ala Thr Pro Ser Glu Gly Thr Asn Ser Asp
 50 55 60
 Leu Asn Ser Asp Leu Val Asp Arg Val Glu Tyr Glu Ala Arg Gly Ser
 65 70 75 80
 Leu Leu Thr Thr Met Leu Ala Arg Ile Arg Lys Ala Val Ser Gln Ile
 85 90 95
 Trp Met His Val Lys Thr Lys Arg His Pro Lys Glu Gln Gly Val Arg

100 105 110
 Ser Leu Gly Asp Ile Pro Cys Asp Leu Leu Lys Ala Thr Arg Leu Pro
 115 120 125
 Lys Glu Thr Ala Glu Pro Pro Tyr Phe Tyr Ala Leu Glu Thr Ala Leu
 130 135 140
 Ala Ser Cys Arg Ser Phe Phe Phe His Val Phe Leu Arg Leu Phe Thr
 145 150 155 160
 Leu Leu Arg Arg Gln His Pro Glu Ala Pro Leu Asp Leu Cys Gly Thr
 165 170 175
 Asp Pro Ile Ser Pro Glu Ala Ala Val Ala Phe Ala Leu Ile Leu Arg
 180 185 190
 Ser Cys Cys Lys Trp Val Ala Thr Asp Ala Val Gln Glu Gly Leu Pro
 195 200 205
 Leu Glu Val Ile Glu Glu Ala Gly Met Tyr Asn Ala Phe Ser Leu Glu
 210 215 220
 Ala Thr Thr Thr Val Glu Glu Val Ser Lys Arg Leu Ser Glu Leu Leu
 225 230 235 240
 Tyr Ser Asp Lys Arg Ile Asp Gly Leu Ala Asn Val Arg Gly Ile Thr
 245 250 255
 Lys Ile Asn Leu Pro Leu Leu Ile
 260

<210>716

<211>385

<212>PRT

<213>Chlamydia pneumoniae

<400>716

Arg Ile Ala Met Gly Ile Asn Pro Ser Gly Asn Arg Ser Pro Asp Asp
 1 5 10 15
 Val Trp Val Arg Gly Ala Gln Gly Asp Ser Ser Ser Thr Gln Gly Thr
 20 25 30
 Gly Ala Thr Asn Ser Asn Leu Gly Ala His Asn Val Thr Thr Ser Thr
 35 40 45
 Ser Gln Pro Gln Val Ala Ser Lys Ala Lys Gln Leu Trp Gln Thr Val
 50 55 60
 Arg Glu Phe Phe Leu Gly Lys Lys Ser Pro Asp Ser Ser Gln Gly Ala
 65 70 75 80
 Ser Gly Pro Ala Met Gln Ser Pro Ser Gly Pro Thr Ile Arg Pro Thr
 85 90 95
 Arg Pro Ala Pro Pro Pro Thr Thr Gly Gly Ala Asn Ala Lys Arg
 100 105 110
 Pro Ala Thr His Gly Lys Gly Arg Ala Pro Gln Pro Pro Thr Ala Gly
 115 120 125
 Ser Ser Ser Gly Ser Glu Gln Pro Thr Ala Met Ser Ser Glu Val Ala
 130 135 140
 Lys Leu Val Ser Glu Leu Lys Asp Ala Val His Ser His Ala Glu Ser
 145 150 155 160
 Gln Lys Val Leu Lys Lys Val Ser Gln Glu Leu Gln Thr Lys Trp Thr
 165 170 175
 Asp Trp Glu Asn Asn Arg Gly Pro Asp Tyr Leu Leu His Gly Tyr Arg
 180 185 190
 Val Ile Ala Arg Ala Leu Gln Gln Thr Tyr Thr Glu Gln Ser Met Leu
 195 200 205
 Ile Glu Gly Thr Ser Ser Thr Gly Pro Val Pro Gln Ala Val Thr Val
 210 215 220
 Ala Lys Asp Ala Val Thr Gln Thr Val Arg Gly Ala Ile Lys Asn Leu
 225 230 235 240
 Glu Asn Pro Lys Pro Gly Asn Asp Pro Asp Gly Val Leu Met Gln Val
 245 250 255
 Val Ile Ser Leu Gly Ile Glu Gly Pro Thr Leu Asp Pro Gly Glu Ser
 260 265 270
 Ile Gln Asn Phe Leu Glu Thr Arg Val Ser Asp Phe Gly Gly Asp Asp
 275 280 285
 Ser Asp Ile Asp Tyr Thr Ser Asp Ile Ala Arg Leu Gly Ser Ala Leu
 290 295 300

Asp Arg Val Arg Glu Asn His Pro Asn Glu Met Pro Arg Ile Trp Ile
 305 310 315 320
 Ala Leu Ala Arg Glu Leu Gly Ala Ala Val His Ser His Ala Thr Ser
 325 330 335
 Val Arg Ile Ala Asn Ala Gly Lys Asn His Thr Arg Asp Val Val Arg
 340 345 350
 Met Ala Asn Glu Ser Ser Arg Leu Leu Gln Gly Met Lys Val Leu Ser
 355 360 365
 Val Gly Ala Trp Ala Asn Thr Met Thr Val Leu Ile Gly Asp Leu Phe
 370 375 380

Glu

385

<210>717

<211>216

<212>PRT

<213>Chlamydia pneumoniae

<400>717

Lys Ile Ile Met Ser Val Asn Pro Ser Gly Asn Ser Lys Asn Asp Leu
 1 5 10 15
 Trp Ile Thr Gly Ala His Asp Gln His Pro Asp Val Lys Glu Ser Gly
 20 25 30
 Val Thr Ser Ala Asn Leu Gly Ser His Arg Val Thr Ala Ser Gly Gly
 35 40 45
 Arg Gln Gly Leu Leu Ala Arg Ile Lys Glu Ala Val Thr Gly Phe Phe
 50 55 60
 Ser Arg Met Ser Phe Phe Arg Ser Gly Ala Pro Arg Gly Ser Gln Gln
 65 70 75 80
 Pro Ser Ala Pro Ser Ala Asp Thr Val Arg Ser Pro Leu Pro Gly Gly
 85 90 95
 Asp Ala Arg Ala Thr Glu Gly Ala Gly Arg Asn Leu Ile Lys Lys Gly
 100 105 110
 Tyr Gln Pro Gly Met Lys Val Thr Ile Pro Gln Val Pro Gly Gly Gly
 115 120 125
 Ala Gln Arg Ser Ser Gly Ser Thr Thr Leu Lys Pro Thr Arg Pro Ala
 130 135 140
 Pro Pro Pro Pro Lys Thr Gly Gly Thr Asn Ala Lys Arg Pro Ala Thr
 145 150 155 160
 His Gly Lys Gly Pro Ala Pro Gln Pro Pro Lys Thr Gly Gly Thr Asn
 165 170 175
 Ala Lys Arg Ala Ala Thr His Gly Lys Gly Pro Ala Pro Gln Pro Pro
 180 185 190
 Lys Gly Ile Leu Lys Gln Pro Gly Gln Ser Gly Thr Ser Gly Lys Lys
 195 200 205
 Arg Val Ser Trp Ser Asp Glu Asp
 210 215

<210>718

<211>404

<212>PRT

<213>Chlamydia pneumoniae

<400>718

Gly Tyr Met Asp Lys Leu Thr Val Gln Asp Leu Ser Pro Glu Glu Lys
 1 5 10 15
 Lys Val Leu Val Arg Val Asp Phe Asn Val Pro Met Gln Asp Gly Lys
 20 25 30
 Ile Leu Asp Asp Ile Arg Ile Arg Ser Ala Met Pro Thr Ile Asn Tyr
 35 40 45
 Leu Leu Lys Lys His Ala Ala Val Ile Leu Met Ser His Leu Gly Arg
 50 55 60
 Pro Lys Gly Gln Gly Phe Gln Glu Glu Tyr Ser Leu Gln Pro Val Val
 65 70 75 80
 Asp Val Leu Glu Gly Tyr Leu Gly His His Val Pro Leu Ala Pro Asp
 85 90 95
 Cys Val Gly Glu Val Ala Arg Gln Ala Val Ala Gln Leu Ser Pro Gly
 100 105 110

Arg Val Leu Leu Leu Glu Asn Leu Arg Phe His Ile Gly Glu Glu His
 115 120 125
 Pro Glu Lys Asp Pro Thr Phe Ala Ala Glu Leu Ser Ser Tyr Gly Asp
 130 135 140
 Phe Tyr Val Asn Asp Ala Phe Gly Thr Ser His Arg Lys His Ala Ser
 145 150 155 160
 Val Tyr Val Val Pro Gln Ala Phe Pro Gly Arg Ala Ala Ala Gly Leu
 165 170 175
 Leu Met Glu Lys Glu Leu Glu Phe Leu Gly Arg His Leu Leu Thr Ser
 180 185 190
 Pro Lys Arg Pro Phe Thr Ala Ile Leu Gly Gly Ala Lys Ile Ser Ser
 195 200 205
 Lys Ile Gly Val Ile Glu Ala Leu Leu Asn Gln Val Asp Tyr Leu Leu
 210 215 220
 Leu Ala Gly Gly Met Gly Phe Thr Phe Leu Gln Ala Leu Gly Lys Ser
 225 230 235 240
 Leu Gly Asn Ser Leu Val Glu Lys Ser Ala Leu Asp Leu Ala Arg Asn
 245 250 255
 Val Leu Lys Ile Ala Lys Ser Arg Asn Val Thr Ile Val Leu Pro Ser
 260 265 270
 Asp Val Lys Ala Ala Glu Asn Leu Gln Ser Lys Glu Tyr Ser Val Ile
 275 280 285
 Ser Ile Asp Gln Gly Ile Pro Pro His Leu Gln Gly Phe Asp Ile Gly
 290 295 300
 Pro Arg Thr Thr Glu Glu Phe Ile Arg Ile Ile Asn Gln Ser Ala Thr
 305 310 315 320
 Val Phe Trp Asn Gly Pro Val Gly Val Tyr Glu Val Pro Pro Phe Asp
 325 330 335
 Ser Gly Ser Ile Ala Ile Ala Asn Ala Leu Gly Asn His Pro Ser Ala
 340 345 350
 Val Thr Val Val Gly Gly Gly Asp Ala Ala Ala Val Val Ala Leu Ala
 355 360 365
 Gly Cys Ser Thr Lys Val Ser His Val Ser Thr Gly Gly Gly Ala Ser
 370 375 380
 Leu Glu Phe Leu Glu Gln Gly Phe Leu Pro Gly Thr Glu Val Leu Ser
 385 390 395 400
 Pro Ser Lys Ser

<210>719

<211>121

<212>PRT

<213>Chlamydia pneumoniae

<400>719

Trp Asn Lys Ala Leu Lys Ala Lys Lys Lys Ser Met Asp Asn Lys Ala
 1 5 10 15
 Pro Ala Gly Ser Val Ile Asn Gln Glu Ser Thr Ile Ser Leu Ile Met
 20 25 30
 Phe Lys Leu Met Ala Arg Ile Pro Arg Ala Lys Pro Ile Pro Lys Thr
 35 40 45
 Ala Pro Thr Thr Thr Cys Val Val Asp Ile Gly Ser Pro Lys Ile Glu
 50 55 60
 Ala Lys Ala Ile Val Asn Ala Glu Pro Ile Pro Thr Glu Asn Pro Arg
 65 70 75 80
 Asp Gly Val Asn Ser Val Ile Leu Gln Pro Thr Val Ser Ile Thr Arg
 85 90 95
 His Pro Gln Ile Ala Arg Pro Met Thr Lys Pro Met Pro Pro Asn Ala
 100 105 110
 Met Ser Leu Ile Asn Val Tyr Asp Val
 115 120

<210>720

<211>428

<212>PRT

<213>Chlamydia pneumoniae

<400>720

WO 99/27105

Tyr Ser Met Leu Pro Leu Ile Ile Phe Val Leu Leu Cys Gly Phe Tyr
 1 5 10 15
 Thr Ser Trp Asn Ile Gly Ala Asn Asp Val Ala Asn Ala Val Gly Pro
 20 25 30
 Ser Val Gly Ser Gly Val Leu Thr Leu Arg Gln Ala Val Ile Ala
 35 40 45
 Ala Ile Phe Glu Phe Phe Gly Ala Leu Leu Leu Gly Asp Arg Val Ala
 50 55 60
 Gly Thr Ile Glu Ser Ser Ile Val Ser Val Thr Asn Pro Met Ile Ala
 65 70 75 80
 Ser Gly Asp Tyr Met Tyr Gly Met Thr Ala Ala Leu Leu Ala Thr Gly
 85 90 95
 Val Trp Leu Gln Leu Ala Ser Phe Phe Gly Trp Pro Val Ser Thr Thr
 100 105 110
 His Ser Ile Val Gly Ala Val Ile Gly Phe Gly Leu Val Leu Gly Lys
 115 120 125
 Gly Thr Ile Ile Tyr Trp Asn Ser Val Gly Ile Ile Leu Ile Ser Trp
 130 135 140
 Ile Leu Ser Pro Phe Met Gly Gly Cys Val Ala Tyr Leu Ile Phe Ser
 145 150 155 160
 Phe Ile Arg Arg His Ile Phe Tyr Lys Asn Asp Pro Val Leu Ala Met
 165 170 175
 Val Arg Val Ala Pro Phe Leu Ala Ala Leu Val Ile Met Thr Leu Gly
 180 185 190
 Thr Val Met Ile Ser Gly Gly Val Ile Leu Lys Val Ser Ser Thr Pro
 195 200 205
 Trp Ala Val Ser Gly Val Leu Val Cys Gly Leu Leu Ser Tyr Ile Ile
 210 215 220
 Thr Phe Tyr Tyr Val His Thr Lys His Cys Ser Tyr Ile Ser Asp Thr
 225 230 235 240
 Pro Lys Lys Gly Ser Leu Thr Tyr Arg Leu Lys Glu Arg Gly Gly Asn
 245 250 255
 Tyr Gly Arg Lys Tyr Leu Val Val Glu Arg Ile Phe Ala Tyr Leu Gln
 260 265 270
 Ile Ile Val Ala Cys Phe Met Ala Phe Ala His Gly Ser Asn Asp Val
 275 280 285
 Ala Asn Ala Ile Ala Pro Val Ala Gly Val Leu Arg Gln Ala Tyr Pro
 290 295 300
 Ala Ser Tyr Thr Ser Tyr Thr Leu Ile Arg Leu Met Ala Phe Gly Gly
 305 310 315 320
 Ile Gly Leu Val Ile Gly Leu Ala Ile Trp Gly Trp Arg Val Ile Glu
 325 330 335
 Thr Val Gly Cys Lys Ile Thr Glu Leu Thr Pro Ser Arg Gly Phe Ser
 340 345 350
 Val Gly Met Gly Ser Ala Leu Thr Ile Ala Leu Ala Ser Ile Leu Gly
 355 360 365
 Leu Pro Ile Ser Thr Thr His Val Val Val Gly Ala Val Leu Gly Ile
 370 375 380
 Gly Leu Ala Arg Gly Ile Arg Ala Ile Asn Leu Asn Ile Ile Lys Asp
 385 390 395 400
 Ile Val Leu Ser Trp Phe Ile Thr Leu Pro Ala Gly Ala Leu Leu Ser
 405 410 415
 Ile Leu Phe Phe Ala Leu Arg Ala Leu Phe His
 420 425

<210>721

<211>248

<212>PRT

<213>Chlamydia pneumoniae

<400>721

Asn Gly Ile Arg Ser His Lys Ser Phe Thr Arg Ser Phe Arg Gln Val
 1 5 10 15
 Ile Ile Ala Lys Lys Ala Ile Leu Met Gln Thr Leu Ala Arg Leu Phe
 20 25 30
 Gly Gln Ser Pro Phe Ala Pro Leu Gln Ala His Leu Glu Met Val Val

35 40 45
 Ser Cys Val Glu Tyr Met Leu Pro Ile Phe Thr Ala Leu Arg Asp Gly
 50 55 60
 Arg Tyr Glu Glu Leu Leu Glu Met Ala Lys Leu Val Ser Asp Lys Glu
 65 70 75 80
 Tyr Gln Ala Asp Cys Ile Lys Asn Asp Met Arg Asn His Leu Pro Ala
 85 90 95
 Gly Leu Phe Met Pro Ile Ser Arg Ala Gly Ile Leu Glu Ile Ile Ser
 100 105 110
 Ile Gln Asp Ser Ile Ala Asp Thr Ala Glu Asp Val Ala Ile Leu Leu
 115 120 125
 Thr Ile Arg Arg Leu Asn Phe Tyr Pro Ser Met Glu Thr Leu Phe Phe
 130 135 140
 Arg Phe Leu Glu Lys Asn Leu Glu Ala Phe Glu Leu Thr Met Thr Leu
 145 150 155 160
 Leu His Glu Phe Asn Gln Leu Leu Glu Ser Ser Phe Gly Gly Arg Lys
 165 170 175
 Ala Asp Lys Ala Arg Leu Leu Val Gly Arg Val Ala Lys Ser Glu His
 180 185 190
 Glu Ser Asp Val Leu Gln Arg Glu Leu Met Gln Ile Phe Phe Ser Asp
 195 200 205
 Asp Phe Ile Ile Pro Glu Lys Glu Phe Tyr Leu Trp Leu Gln Val Ile
 210 215 220
 Arg Arg Thr Ala Gly Ile Ser Asp Ser Ser Glu Lys Leu Ala His Arg
 225 230 235 240
 Ile Asn Met Thr Leu Glu Glu Lys
 245

<210>722

<211>161

<212>PRT

<213>Chlamydia pneumoniae

<400>722

Lys Ile Ile Glu Ile Ser Val Pro Ile Ile Phe Phe Cys Ile Glu Arg
 1 5 10 15
 Glu Ala Val Ser Lys Leu Trp Pro Trp Lys Leu Thr Trp Pro Glu Thr
 20 25 30
 Glu Asn Gly Gly Gln Gly Ser Asn Arg Arg Ile Ala Cys Ala Glu Thr
 35 40 45
 Asp Phe Pro Asp Pro Asp Ser Pro Met Ile Ala Lys Val Cys Pro Ser
 50 55 60
 Leu Ile Val Asn Asp Lys Asp Trp Thr Met Gly Tyr Cys Trp Arg Cys
 65 70 75 80
 Phe Ala Lys Val Met Asp Arg Ser Ser Ile Cys Lys Met Gly Leu Glu
 85 90 95
 Ala Ile Ser Arg Leu Gln Asp Arg Leu Gly Lys Leu Leu Leu Arg Lys
 100 105 110
 Arg Leu Phe Leu Cys Lys Pro Leu Leu Val Tyr Leu Ala Asn Leu His
 115 120 125
 Leu Leu Leu Tyr Lys Leu Ile Trp Lys Trp Trp Ser Leu Val Trp Asn
 130 135 140
 Thr Cys Phe Leu Tyr Ser Leu Leu Ser Glu Met Glu Asp Met Lys Asn
 145 150 155 160
 Tyr

<210>723

<211>344

<212>PRT

<213>Chlamydia pneumoniae

<400>723

Leu His Lys Asn Ser Leu Phe Arg Asn Asn Asn Leu Pro Lys Arg Ser
 1 5 10 15
 Cys Lys Arg Leu Met Ala Ser Asn Pro Ile Leu Gln Ile Glu Asp Leu
 20 25 30
 Ser Ile Thr Leu Ala Lys Gln Arg Gln Gln Tyr Pro Ile Val Gln Ser

35 40 45
 Leu Ser Phe Thr Ile Asn Glu Gly Gln Thr Leu Ala Ile Ile Gly Glu
 50 55 60
 Ser Gly Ser Gly Lys Ser Val Ser Ala His Ala Ile Leu Arg Leu Leu
 65 70 75 80
 Pro Cys Pro Pro Phe Ser Val Ser Gly Gln Val Asn Phe Gln Gly His
 85 90 95
 Asn Leu Leu Thr Ala Ser Arg Ser Ile Gln Lys Lys Ile Ile Gly Thr
 100 105 110
 Glu Ile Ser Met Ile Phe Gln Asn Pro Gln Ala Ser Leu Asn Pro Val
 115 120 125
 Phe Thr Ile Glu Gln Gln Phe Arg Glu Ile Ile His Thr His Leu Ala
 130 135 140
 Leu Thr Ala Glu Val Ala Lys Glu Lys Met Leu Tyr Ala Leu Glu Glu
 145 150 155 160
 Thr Gly Phe His Asp Pro Arg Leu Cys Leu Asn Leu Tyr Pro His Gln
 165 170 175
 Leu Ser Gly Gly Met Leu Gln Arg Ile Cys Ile Ala Met Ala Leu Leu
 180 185 190
 Cys Ser Pro Lys Leu Leu Ile Ala Asp Glu Pro Thr Thr Ala Leu Asp
 195 200 205
 Val Ser Val Gln Tyr Gln Ile Leu Gln Leu Leu Lys Thr Leu Gln Lys
 210 215 220
 Lys Thr Gly Met Ser Leu Leu Ile Ile Thr His Asn Met Gly Val Val
 225 230 235 240
 Ala Glu Thr Ala Asp Asp Val Leu Val Leu Tyr Ala Gly Arg Met Val
 245 250 255
 Glu Cys Ala Pro Ala Val Gln Met Phe His Asn Pro Ser His Pro Tyr
 260 265 270
 Thr Arg Asp Leu Leu Ala Ser Arg Pro Ser Leu Gln Pro Gln Gln Leu
 275 280 285
 Gly Ser Phe Asn Pro Ile Pro Gly Gln Pro Pro His Tyr Thr Ala Phe
 290 295 300
 Pro Ser Gly Cys Arg Tyr His Pro Arg Cys Ser Lys Ile Leu Asn Arg
 305 310 315 320
 Cys Ser Ala Glu Ala Pro Glu Ile Tyr Pro Val Arg Glu Gly His Lys
 325 330 335
 Val Arg Cys Trp Leu Tyr Asp Asp
 340

<210>724

<211>324

<212>PRT

<213>Chlamydia pneumoniae

<400>724

Met Thr Thr Asn Phe Pro Gln Pro Leu Ile Gln Ala Thr Ser Leu Thr
 1 5 10 15
 Lys His Tyr Tyr Lys Arg Ser Phe Trp Phe Gln Gly Lys Thr Ile Ala
 20 25 30
 Ser Arg Pro Val Asp Asp Val Ser Phe Ser Leu Tyr Ser Arg Arg Ala
 35 40 45
 Val Gly Leu Ile Gly Glu Ser Gly Ser Gly Lys Ser Thr Leu Ala Leu
 50 55 60
 Ala Leu Ala Gly Leu Leu Pro Leu Thr Ser Gly Phe Leu Thr Phe Asn
 65 70 75 80
 Gly Thr Pro Ile Lys Leu His Ser Lys His Gly Arg His Gln Leu Arg
 85 90 95
 Ser Gln Val Arg Leu Val Phe Gln Asn Pro Gln Ala Ser Leu Asn Pro
 100 105 110
 Arg Lys Thr Ile Leu Asp Ser Leu Gly His Ser Leu Leu Tyr His Lys
 115 120 125
 Leu Val Pro Lys Glu Lys Val Leu Ala Thr Val Arg Glu Tyr Leu Glu
 130 135 140
 Leu Val Gly Leu Ser Glu Glu Tyr Phe Tyr Arg Tyr Pro His Gln Leu
 145 150 155 160

Ser Gly Gly Gln Gln Gln Arg Val Ser Ile Ala Arg Ala Leu Leu Gly
 165 170 175
 Val Pro Gln Leu Ile Ile Cys Asp Glu Ile Val Ser Ala Leu Asp Leu
 180 185 190
 Ser Ile Gln Ala Gln Ile Leu Asn Met Leu Ala Glu Leu Gln Lys Lys
 195 200 205
 Leu Ser Leu Thr Tyr Leu Phe Ile Ser His Asp Leu Ala Val Val Arg
 210 215 220
 Ser Phe Cys Thr Glu Val Phe Ile Met Tyr Lys Gly Gln Ile Val Glu
 225 230 235 240
 Lys Gly Asn Thr Lys Arg Ile Phe Ser Asp Pro Gln His Pro Tyr Thr
 245 250 255
 Arg Met Leu Leu Asn Ala Gln Leu Pro Glu Thr Pro Asp Gln Arg Gln
 260 265 270
 Ser Lys Pro Ile Phe Gln Glu Tyr His Lys Asp Ser Glu Glu Ser Cys
 275 280 285
 Ser Thr Gly Cys Tyr Phe Tyr Asn Arg Cys Pro Gln Lys Gln Glu Ala
 290 295 300
 Cys Lys Ser Glu Ile Ile Pro Asn Gln Gly Asp Ala His His Thr Tyr
 305 310 315 320
 Arg Cys Ile His

<210>725

<211>143

<212>PRT

<213>Chlamydia pneumoniae

<400>725

Ala Tyr Cys Trp Arg Ala Arg Trp Arg Ala Met Gln Leu Ala Gly Ala
 1 5 10 15
 Thr Thr Ile Pro Val Ile Leu Lys His Val Ile Ala Asp Gly Thr Ala
 20 25 30
 Ala Glu Ala Thr Leu Ile Glu Asn Ile Gln Arg Val Asn Leu Asn Pro
 35 40 45
 Ile Glu Met Ala Glu Ala Phe Lys Arg Leu Ile His Val Phe Gly Leu
 50 55 60
 Thr Gln Asp Xaa Val Ala Tyr Lys Val Gly Lys Lys Arg Ser Thr Val
 65 70 75 80
 Ala Asn Tyr Leu Arg Leu Leu Ala Leu Ser Lys Thr Ile Gln Glu Ser
 85 90 95
 Leu Leu Gln Gly Gln Ile Thr Leu Gly His Ala Lys Val Ile Leu Thr
 100 105 110
 Leu Glu Asp Pro Ile Leu Arg Glu Lys Leu Asn Glu Ile Ile Ile Gln
 115 120 125
 Glu His Leu Ala Val Arg Glu Ala Glu Leu Ile Ala Asn Ser Leu
 130 135 140

<210>726

<211>91

<212>PRT

<213>Chlamydia pneumoniae

<400>726

Glu Lys Ser Gly Asp Ile Val Thr Glu Glu Ile Ser Lys Asp Thr Ile
 1 5 10 15
 Ile Glu Val Ala Ile Asp Asp Ile Arg Val Ser Pro Phe Gln Pro Arg
 20 25 30
 Arg Val Phe Ser Asn Glu Glu Leu Gln Glu Leu Ile Ala Ser Ile Lys
 35 40 45
 Ala Val Gly Leu Ile His Pro Pro Val Val Arg Glu Ile Cys Thr Gly
 50 55 60
 Asp Arg Val Leu Tyr Tyr Glu Leu Ile Ala Gly Glu Pro Ala Gly Gly
 65 70 75 80
 Pro Cys Ser Ser Gln Glu Gln Leu Arg Tyr Leu
 85 90

<210>727

<211>238

<212>PRT

<213>Chlamydia pneumoniae

<400>727

Arg Lys Ile His Lys Asn Leu Arg His Ala Tyr Arg Phe Ser Thr Pro
 1 5 10 15
 Asn Cys Arg Ser Phe Met Gln Lys Leu Val His Asn Ile Trp Lys Lys
 20 25 30
 Phe Tyr Ser Phe Ser Ser Ala Ile Ala Ile Cys Ile Val Leu Ala Ser
 35 40 45
 Phe Leu Ser Leu Lys Ile Val Ser Asn Thr Tyr Lys His Ser Gln Ala
 50 55 60
 Lys Arg Asn Ser Ile Leu Leu Leu Thr Arg Ala Ala Glu Val Ala Val
 65 70 75 80
 Ser Gln Gly Phe Leu Pro Ser Lys Ser Ala Leu Ser Ser Leu Glu Gln
 85 90 95
 Ala Tyr His Leu Gly Gly Glu Ser Met Lys Pro Tyr Ala Gly Phe Leu
 100 105 110
 Ala Ser Cys Phe Tyr Ile His Asn Glu Pro Leu Arg Gly Ala Tyr Tyr
 115 120 125
 Ala Gly Leu Ala Tyr Asn Asn Ser Gln Ala Leu Gln Leu Pro His Pro
 130 135 140
 Ile Gln Lys Leu Leu Lys Glu Ile Ser Glu Ala Gln Ala Asp Gln Leu
 145 150 155 160
 Tyr Asp Val Ala Leu Ser Lys Ser Tyr Gln Leu Leu Gln Thr Ala Asn
 165 170 175
 Ser Ser Pro Glu Tyr Pro Thr Leu Ser Phe Leu Thr Leu Leu Arg Val
 180 185 190
 Ile Glu Leu Lys Glu Leu Leu His Gln Asp Val Ser Gln Asp Phe Ala
 195 200 205
 Ala Leu Lys Ser Ser Pro Leu Phe His Gln Phe Glu Arg Met Tyr Ser
 210 215 220
 Asp Gly Glu Trp Thr Leu Ser Lys Arg Phe Gly Lys Lys Gly
 225 230 235

<210>728

<211>289

<212>PRT

<213>Chlamydia pneumoniae

<400>728

Gly Arg Thr Pro Cys Glu Cys Phe Ile Leu Gly Asp Ser Cys Arg Arg
 1 5 10 15
 Arg Gly Ser Leu Val Lys Lys Ile Arg Val His Asp Ser Gly Leu Ile
 20 25 30
 Asp Leu Asp Asp Leu Glu Lys Leu Leu Asn Glu Gly Ala Gln Phe Val
 35 40 45
 Ser Ile Pro His Val Ser Asn Val Thr Gly Cys Val Gln Pro Leu Gln
 50 55 60
 Gln Val Ala Glu Leu Val His Arg Tyr Asp Ala Tyr Leu Ala Val Asp
 65 70 75 80
 Gly Ala Gln Gly Ala Pro His Leu Pro Ile Asp Val Gln Leu Trp Asp
 85 90 95
 Val Asp Phe Tyr Val Phe Ser Ser His Lys Ile Tyr Gly Pro Thr Gly
 100 105 110
 Ile Gly Val Leu Tyr Gly Lys Lys Asp Leu Leu Asp Gln Leu Pro Pro
 115 120 125
 Val Glu Gly Gly Gly Asp Met Val Ala Ile Tyr Asp His Gln Asn Pro
 130 135 140
 Glu Tyr Leu Pro Ala Pro Met Lys Phe Glu Ala Gly Thr Pro Asn Ile
 145 150 155 160
 Ala Gly Val Leu Gly Leu Gly Ala Ala Leu Asp Tyr Leu Asp Gly Leu
 165 170 175
 Ser Ala Lys Phe Ile Tyr Asp Lys Glu Ile Ala Leu Thr Thr Tyr Leu
 180 185 190
 His Lys Glu Leu Leu Glu Ile Pro Gly Val Glu Ile Leu Gly Pro Ser
 195 200 205

Ile Glu Glu Pro Arg Gly Ala Leu Ile Gly Met Thr Ile Asp Gly Ala
 210 215 220
 His Pro Leu Asp Leu Gly Phe Leu Leu Asp Leu Arg Gly Ile Ala Val
 225 230 235 240
 Arg Thr Gly His Gln Cys Ala Gln Pro Ala Met Glu Arg Trp Asn Val
 245 250 255
 Gly His Val Leu Arg Val Ser Leu Gly Ile Tyr Asn Asp Glu Asp Asp
 260 265 270
 Ile Asp Gln Phe Ile Leu Val Leu Gln Asp Ser Leu Asp Lys Ile Arg
 275 280 285
 Arg

<210>729

<211>137

<212>PRT

<213>Chlamydia pneumoniae

<400>729

Ser Val Lys Asn Leu Lys Glu Asp Phe Pro Ile Phe Ala Ala Lys Ala
 1 5 10 15
 Lys Glu Asn Glu Pro Phe Ile Tyr Leu Asp Ser Ala Ala Thr Thr Gln
 20 25 30
 Lys Pro Gln Gln Val Ile Asp Ala Val Ala Asn Phe Tyr Thr Ser Ser
 35 40 45
 Tyr Ala Thr Val Asn Arg Ala Ile Tyr Ser Ser Ser Arg Asn Val Thr
 50 55 60
 Glu Ala Tyr Ala Ala Val Arg Glu Lys Val Arg Lys Trp Val Ser Ala
 65 70 75 80
 Ala Ser Asp Ser Glu Ile Val Phe Thr Arg Gly Thr Thr Ala Gly Leu
 85 90 95
 Asn Leu Leu Ala Ile Ser Val Asn Asp Leu Trp Ile Pro Lys Gly Gly
 100 105 110
 Val Val Leu Val Ser Glu Ala Glu His His Ala Asn Val Leu Ser Trp
 115 120 125
 Glu Ile Pro Val Gly Gly Glu Val Leu
 130 135

<210>730

<211>410

<212>PRT

<213>Chlamydia pneumoniae

<400>730

Arg His Phe Leu Leu Leu Leu Arg Val Leu Leu Cys Lys Lys Leu Arg
 1 5 10 15
 Lys Leu Ala Thr Leu Asn Ile Ala Ser Ser Leu Leu Gln Lys Arg Cys
 20 25 30
 Leu Val Ala Phe Leu Gly Phe Arg Ser Phe Leu Phe Phe Leu Ile Ala
 35 40 45
 Asn Asn Leu Ala Thr Gly Ala Ser Glu Leu Ile Lys Gln His Trp Leu
 50 55 60
 His Asn Asn His Ser Leu Ala Phe Glu Cys Ile Leu Ile Asn Gly Lys
 65 70 75 80
 Tyr Glu Pro Ser Leu Ser Gln Leu Pro Glu Gly Val Ile Val Cys Gly
 85 90 95
 Ile Asp Glu Ala Arg Gly Ser Leu Ser Ser Phe Met Gln Gly Phe Asp
 100 105 110
 Val Asn Lys His Pro Leu Ala Phe Leu Asn Ala Val Cys Ser Glu Asp
 115 120 125
 Arg Gly Val Val Ile Tyr Ile Pro Glu Glu Met Gln Thr Ser Asp Pro
 130 135 140
 Ile Phe Val Arg His Ile Ser Phe Pro Thr Val Ser Asp His Asp Val
 145 150 155 160
 Ile Phe Ser Pro Arg Ile Val Val Ile Leu Gly Gln Arg Ala Ser Ala
 165 170 175
 Gln Ile Gln Ile Ser His Asp Val Asp Leu Glu Met Val Gly Ser Ser
 180 185 190

WO 99/27105

Lys Thr Ile Val Asn Gly Val Thr Glu Leu Phe Val Gly Glu Gly Ala
 195 200 205
 Asp Leu Thr Val Phe Met Val Pro Gly Tyr Ser Glu Glu Asp Thr Leu
 210 215 220
 Ser Trp Ser Thr Ile Ala Thr Val Glu Lys Asp Ala Ile Cys Arg Met
 225 230 235 240
 Thr Gln Asn Leu Leu Glu Ser Cys Gln Gly Phe Gly Trp Phe Asp Asn
 245 250 255
 Thr Ser Tyr Ile Val Gly Lys Lys Gly His Ala Glu Ser Leu Val Leu
 260 265 270
 Val Gln Ser Pro Arg Lys Thr Trp Val Asn Asn Leu Met Ser His Asp
 275 280 285
 Ala Glu Glu Thr Val Ser Arg Gln Asn Ile Lys Ser Ile Leu Tyr Ser
 290 295 300
 Gly His Phe Leu Phe Glu Gly Thr Ile Ser Ile Ser Ser Gln Gly Asp
 305 310 315 320
 Leu Ser Asp Ala Asn Gln Lys His Asp Thr Leu Leu Ser Ser Glu
 325 330 335
 Ala Arg Val Ser Thr Phe Pro Arg Leu Glu Ile Glu Thr Asp Glu Val
 340 345 350
 Lys Ala Ser His Gly Ala Thr Val Gly Pro Leu Asp Pro Gln Gln Ile
 355 360 365
 Phe Tyr Met Arg Ser Arg Gly Met Thr Glu Ala Glu Ala Gln Glu Lys
 370 375 380
 Leu Ile His Gly Phe Leu Lys Gln Gly Leu Val Ser Asp Thr Phe Leu
 385 390 395 400
 Gly Ser Ser Phe Gln Leu Asn Gln Thr Ser
 405 410

<210>731

<211>256

<212>PRT

<213>Chlamydia pneumoniae

<400>731

Met Leu Lys Ile Lys His Leu His Ala Ser Cys Asn Asp Val Lys Ile
 1 5 10 15
 Leu Asp Asp Phe Asn Leu Asn Ile Gln Pro Gly Xaa Met His Val Ile
 20 25 30
 Met Gly Pro Asn Gly Ala Gly Lys Ser Thr Leu Ala Lys Ile Leu Ala
 35 40 45
 Gly Asp Glu Ser Val Leu Val Ser Ser Gly Glu Ile Ala Leu Gln Glu
 50 55 60
 Gln Asn Leu Leu Ser Met Leu Pro Glu Glu Arg Ser Arg Ala Gly Leu
 65 70 75 80
 Phe Val Gly Phe Gln Met Pro Pro Glu Ile Pro Gly Val Asn Asn Lys
 85 90 95
 Met Phe Leu Arg Asp Ala Tyr Asn Ala Arg Arg Arg Ala Asn Gln Glu
 100 105 110
 Gly Asp Ile Ser Ile Asp Glu Phe Asn Thr Leu Leu Ser Thr Val Leu
 115 120 125
 Glu Thr Tyr Glu Tyr Asn Ala Thr Thr Asp Leu Phe Leu Asp Arg Asn
 130 135 140
 Val Asn Glu Gly Phe Ser Gly Gly Glu Arg Lys Arg Asn Glu Ile Cys
 145 150 155 160
 Gln Met Leu Val Leu Glu Pro Glu Met Val Leu Leu Asp Glu Pro Asp
 165 170 175
 Ser Gly Leu Asp Val Asp Ala Leu Arg Leu Ile Cys Arg Val Leu Glu
 180 185 190
 Lys Tyr Arg Glu Leu His Pro Thr Ser Ser Leu Cys Ile Val Thr His
 195 200 205
 Asn Pro Lys Leu Gly Asn Leu Ile Arg Pro Asp Val Val His Leu Leu
 210 215 220
 Leu Asp Gly Arg Val Ala Leu Ser Gly Asp Val Ser Leu Met His Glu
 225 230 235 240
 Leu Glu Ala Lys Ser Tyr Gln Glu Val Thr Lys Arg Val Ala Trp Arg

<210>732
 <211>484
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>732
 Met Gly Glu Ser Val Lys Val Phe Leu Glu Glu Arg Glu Asp Tyr Pro
 1 5 10 15
 Tyr Gly Phe Val Thr Pro Ile Glu Ser Gln Gly Leu Thr Arg Gly Leu
 20 25 30
 Ser Glu Glu Thr Ile Glu Glu Ile Ala Ala Leu Arg Asn Glu Pro Gln
 35 40 45
 Phe Ile Ile Asp Phe Arg Leu Gln Ala Tyr Arg Tyr Trp Lys Gln Leu
 50 55 60
 His Glu Pro Ala Trp Ala Arg Leu His Tyr Gly Pro Ile Ala Tyr Asp
 65 70 75 80
 Asp Ile Val Tyr Phe Ser Ser Pro Lys Gln Lys Lys Pro Leu Gly Arg
 85 90 95
 Leu Glu Asp Ala Asp Pro Glu Ile Leu Asp Thr Phe Lys Lys Leu Gly
 100 105 110
 Ile Pro Leu Asp Glu Gln Lys Arg Leu Leu Asn Val Glu Asn Val Ala
 115 120 125
 Val Asp Leu Val Phe Asp Ser Val Ser Ile Gly Thr Thr Phe Lys Glu
 130 135 140
 Ala Leu Glu Lys Ala Gly Val Ile Phe Cys Ser Leu Gly Glu Ala Ile
 145 150 155 160
 Gln Glu His Pro Asn Leu Val Lys Lys Tyr Leu Gly Ser Val Val Ser
 165 170 175
 His Arg Asp Asn Phe Phe Ala Ala Leu Asn Ala Ala Val Phe Ser Asp
 180 185 190
 Gly Ser Phe Val Tyr Val Pro Lys Gly Val Lys Cys Pro Met Asp Ile
 195 200 205
 Ser Thr Tyr Phe Arg Ile Asn Asn Lys Glu Ala Gly Gln Phe Glu Arg
 210 215 220
 Thr Leu Ile Val Val Glu Asp Gly Gly Tyr Ala Ser Tyr Leu Glu Gly
 225 230 235 240
 Cys Thr Ala Pro Ala Tyr Ser Ser Asn Gln Leu His Ala Ala Val Val
 245 250 255
 Glu Leu Val Ala His Glu His Ala Val Ile Arg Tyr Ser Thr Val Gln
 260 265 270
 Asn Trp Tyr Ala Gly Asp Lys Lys Thr Gly Lys Gly Gly Ile Tyr Asn
 275 280 285
 Phe Val Thr Lys Arg Gly Leu Cys Ala Gly Tyr Arg Ser Lys Ile Ser
 290 295 300
 Trp Ser Gln Val Glu Val Gly Ala Ala Ile Thr Trp Lys Tyr Pro Ser
 305 310 315 320
 Cys Ile Leu Lys Gly Asp Glu Ser Val Gly Glu Phe Tyr Ser Val Ala
 325 330 335
 Leu Thr Ser Gly Lys Met Gln Ala Asp Thr Gly Thr Lys Met Leu His
 340 345 350
 Val Gly Lys Arg Thr Thr Ser Thr Val Ile Ser Lys Gly Ile Ser Ser
 355 360 365
 Asp Glu Ser Lys Asn Thr Phe Arg Ser Leu Val Ser Leu Gly Lys Lys
 370 375 380
 Ala Glu His Ser Ser Asn Tyr Thr Gln Cys Asp Ser Met Leu Ile Gly
 385 390 395 400
 Lys Ala Ser Gly Ala Tyr Thr Asp Pro Lys Ile Val Val Glu Asn Ser
 405 410 415
 Thr Ser Ser Ile Glu His Glu Ala Thr Thr Ser Lys Leu Arg Glu Asp
 420 425 430
 Gln Leu Leu Tyr Leu Arg Ser Arg Gly Leu Ser Pro Glu Glu Ala Val
 435 440 445
 Ser Leu Val Ile His Gly Phe Cys Arg Glu Ile Ile Glu Gln Leu Pro
 450 455 460

WO 99/27105

Leu Glu Phe Ala Gln Glu Ala Ser Lys Leu Leu Leu Ile Lys Leu Glu
 465 470 475 480
 Asn Ser Val Gly

<210>733

<211>351

<212>PRT

<213>Chlamydia pneumoniae

<400>733

Leu Arg Ser Thr Asn His Val Leu Gly Glu Ile Ser Met Glu Glu Ala
 1 5 10 15
 Ala Lys His Leu Ala Lys Glu Phe Leu Cys Ser Gly Ile Asn Leu Phe
 20 25 30
 Leu Ser Gly Glu Tyr Glu Gln Ala Glu Lys Arg Leu Lys Glu Thr Leu
 35 40 45
 Glu Leu Asp Ser Thr Ala Ala Leu Ala Tyr Cys Tyr Leu Gly Ile Ile
 50 55 60
 Ala Leu Glu Thr Gly Arg Val Ser Glu Ala Leu Asn Trp Cys Ser Lys
 65 70 75 80
 Gly Leu Ala Ser Glu Pro Gly Asp Ser Tyr Leu Arg Tyr Cys Tyr Gly
 85 90 95
 Val Ala Leu Asp Arg Gly Asn Gln Tyr Glu Ala Ala Ile Glu Gln Tyr
 100 105 110
 Ser Ala Tyr Val Ala Leu His Pro Asp Asp Val Glu Cys Trp Phe Ser
 115 120 125
 Leu Gly Ser Val Tyr His Arg Leu Lys Arg Leu Gln Glu Ala Leu Asp
 130 135 140
 Cys Phe Asp Lys Ile Leu Ala Leu Asp Pro Trp Asn Pro Gln Ser Leu
 145 150 155 160
 Tyr Asn Lys Ala Val Ile Leu Ser Glu Met Asp Asp Glu Ala Glu Ser
 165 170 175
 Ile Arg Leu Leu Glu Val Ala Val Ala Lys Asn Pro Leu Tyr Trp Lys
 180 185 190
 Ala Trp Val Lys Leu Gly Phe Leu Leu Ser Arg Ser Lys Arg Trp Asp
 195 200 205
 Lys Ala Thr Glu Ala Tyr Glu Arg Val Val Gln Leu Arg Pro Asp Leu
 210 215 220
 Ser Asp Gly His Tyr Asn Leu Gly Leu Cys Tyr Leu Thr Leu Asp Lys
 225 230 235 240
 Thr Arg Leu Ala Leu Lys Ala Phe Gln Glu Ala Leu Phe Leu Asn Ala
 245 250 255
 Glu Asp Ala Asp Ala His Phe Tyr Val Gly Leu Ala His Leu Asp Leu
 260 265 270
 Lys Gln Met Arg Glu Ala Tyr Glu Ala Phe Asn Ser Ala Leu Ser Ile
 275 280 285
 Asn Leu Glu His Glu Arg Ala His Tyr Leu Leu Gly Tyr Leu His His
 290 295 300
 Met Gln Gly Glu Thr Asp Lys Ala Thr Lys Glu Leu Leu Phe Leu Gln
 305 310 315 320
 Lys Lys Asp Ser Thr Phe Ala Pro Leu Leu Gln Lys Thr Val Val Ser
 325 330 335
 Asp Pro Ser Ser Met Gln Phe Glu Arg Arg Leu Asp Thr Ile Ser
 340 345 350

<210>734

<211>660

<212>PRT

<213>Chlamydia pneumoniae

<400>734

Leu Pro Leu Thr Phe Asp Cys Phe Leu Asp Phe Leu Phe Pro Glu Asn
 1 5 10 15
 Ser Val Ile Lys Leu Gln Leu Lys Arg Asn Ser Phe Val Gly Gln Ala
 20 25 30
 Ile Glu Val Gln Asn Leu Val Thr Arg Leu Leu Ser Leu Phe Pro Tyr
 35 40 45

Glu Glu Gly Thr Cys Pro Cys Ser Ala Ile Phe Asp Ala Val Phe Pro
 50 55 60
 Asn Glu Glu Gly His Ile Leu Ile Gln Glu Val Ile Ser Leu Gln Glu
 65 70 75 80
 Gln Lys Trp Ile Met Glu Cys Leu Asn Gln His Lys Ala Asp Ile Glu
 85 90 95
 Glu Leu Lys Glu Ala Leu Asp Gln Val Phe Asn Glu Leu Pro Ala Asn
 100 105 110
 Tyr Asp Lys Ile Leu Tyr Thr Asp Ile Leu Arg Leu Ile Val Asp Pro
 115 120 125
 Glu Arg Phe Ser Pro Val Leu Pro Ser Glu Val His Arg Leu Ser Leu
 130 135 140
 Ser Glu Phe Thr Glu Leu Gln Gly Arg Tyr Val Val Leu Arg Ser Ala
 145 150 155 160
 Phe Ser Thr Ile Leu Glu Asp Ala Phe Ile Glu Val His Phe Lys Ser
 165 170 175
 Trp Arg Lys Ser Glu Phe Leu Gln Tyr Leu Ala Ala Lys Arg Gln Glu
 180 185 190
 Glu Ala Leu Arg Lys Gln Arg Tyr Pro Thr Pro Tyr Val Asp Tyr Leu
 195 200 205
 Glu Glu Glu Lys Thr Arg Gln Tyr Lys Met Phe Cys Gln Glu His Leu
 210 215 220
 Asp Thr Phe Leu Ala Tyr Leu Phe Ser Lys Thr Pro Tyr Lys Glu Gly
 225 230 235 240
 Leu Glu Pro Tyr Tyr Asp Ile Leu Asp Leu Trp Ile Asn Glu Leu Asp
 245 250 255
 Asn Gly Ala His Arg Ala Leu Ser Trp Asn Glu His Tyr Leu Phe Leu
 260 265 270
 Lys Glu Arg Val Ser His Leu Ser Glu His Leu Pro Ala Leu Phe Ser
 275 280 285
 Thr Phe Arg Glu Phe Asn Glu Leu Gln Arg Pro Leu Leu Gly Lys Tyr
 290 295 300
 Pro Ile Ser Ile Val Arg Asn Lys Arg Gln Thr Glu Gln Asp Leu Ala
 305 310 315 320
 Ala Ser Phe Tyr Pro Val Tyr Gly Tyr Gly Tyr Leu Arg Pro His Ala
 325 330 335
 Tyr Gly Gln Ala Ala Thr Leu Gly Ser Ile Phe Lys Leu Val Ser Ala
 340 345 350
 Tyr Ser Val Leu Ser Gln Arg Ile Leu Trp Gly His Asn Glu Glu Pro
 355 360 365
 Ala Asn Pro Leu Val Ile Ile Asp Lys Asn Ser Phe Gly Tyr Arg Ser
 370 375 380
 Ser Lys Pro His Val Gly Phe Phe Lys Asp Gly Thr Pro Ile Pro Thr
 385 390 395 400
 Phe Phe Arg Gly Gly Ser Leu Pro Gly Asn Asp Phe Met Gly Arg Gly
 405 410 415
 Phe Ile Asp Leu Val Ser Ala Leu Glu Met Ser Ser Asn Pro Tyr Phe
 420 425 430
 Ser Leu Leu Val Gly Glu Gly Leu Gly Asp Pro Glu Asp Leu Ala Asp
 435 440 445
 Ala Ala Ser Leu Phe Gly Phe Gly Glu Lys Thr Gly Leu Gly Leu Pro
 450 455 460
 Gly Glu Tyr Ala Gly Arg Val Pro His Asp Leu Ala Tyr Asn Arg Ser
 465 470 475 480
 Gly Leu Tyr Ala Thr Ala Ile Gly Gln His Thr Leu Val Val Thr Pro
 485 490 495
 Leu Gln Thr Ala Val Met Leu Ala Ser Leu Val Asn Gly Gly Val Val
 500 505 510
 Tyr Val Pro Lys Leu Leu Leu Gly Glu Trp Glu Gly Glu His Val Ser
 515 520 525
 Tyr Leu Ser Ser Lys Lys Lys Arg Thr Ile Phe Met Pro Asp Ala Val
 530 535 540
 Val Glu Val Leu Lys Thr Gly Met Arg Asn Val Ile Trp Gly Gln Tyr
 545 550 555 560

Gly Thr Ala Arg Ala Ile Gln Ser Gln Phe Pro Pro Gln Leu Leu Ser
 565 570 575
 Arg Ile Ile Gly Lys Thr Ser Thr Ala Glu Ser Ile Met Arg Val Gly
 580 585 590
 Leu Asp Arg Glu Tyr Gly Thr Met Lys Met Lys Asp Ile Trp Phe Ala
 595 600 605
 Ala Val Gly Phe Ser Asp Gln Asp Leu Ser Leu Pro Thr Ile Val Val
 610 615 620
 Ile Val Tyr Leu Arg Leu Gly Glu Phe Gly Arg Asp Ala Ala Pro Met
 625 630 635 640
 Ala Val Lys Met Ile Asp Met Trp Glu Lys Ile Gln Gln Arg Glu Ser
 645 650 655
 Phe Leu Arg Gly
 660

<210>735

<211>139

<212>PRT

<213>Chlamydia pneumoniae

<400>735

Glu Lys Trp Val Leu Arg His Cys Trp Asp Ser Lys Leu Arg Gly Lys
 1 5 10 15
 Ile Gly Lys Lys Pro Ile Leu Val Asp Arg Arg Gly Asn Phe Ile Gln
 20 25 30
 Glu Met Glu Gly Ala Val Pro Glu Ala Pro Gly Thr Lys Leu Gln Leu
 35 40 45
 Thr Leu Ser Ala Glu Leu Gln Ala Tyr Ala Asp Ala Leu Leu Leu Glu
 50 55 60
 Tyr Glu Lys Thr Glu Thr Phe Arg Ser Ala Lys Ser Leu Lys Lys Arg
 65 70 75 80
 Glu Lys Leu Pro Pro Leu Phe Pro Trp Ile Lys Gly Gly Ala Ile Ile
 85 90 95
 Ala Leu Asp Pro Asn Asn Gly Glu Ile Leu Ala Met Ala Ser Ser Pro
 100 105 110
 Arg Tyr Arg Asn Asn Asp Phe Val Asn Ala Lys Val Ala Glu Asp Ser
 115 120 125
 Lys Ala Val Arg Ser Ser Ile Tyr Leu Asp Gly
 130 135

<210>736

<211>286

<212>PRT

<213>Chlamydia pneumoniae

<400>736

Phe Ser Asp Glu Ser Glu Ala His Asn Ile His Ser Met Lys Arg Pro
 1 5 10 15
 Lys Lys Phe Pro Ile Tyr Leu Ser Ile Ala Gln Lys Thr Asn Arg Leu
 20 25 30
 Leu Ser Gly Ile Val Ile Ala Phe Ala Val Ile Ala Leu Arg Leu Trp
 35 40 45
 Tyr Leu Ala Val Val Glu His Glu Gln Lys Leu Glu Glu Ala Tyr Lys
 50 55 60
 Pro Gln Ile Arg Val Leu Pro Gln Tyr Val Glu Arg Ala Thr Ile Cys
 65 70 75 80
 Asp Arg Phe Gly Lys Thr Leu Ala Val Asn Gln Leu Gln Tyr Asp Val
 85 90 95
 Ser Val Ala Tyr Gly Ala Ile Arg Asp Leu Pro Thr Arg Ala Trp Arg
 100 105 110
 Val Asp Glu His Gly His Lys Gln Leu Ile Pro Val Arg Lys His Tyr
 115 120 125
 Ile Met Cys Leu Ser Glu Leu Leu Ser Gln Glu Leu His Leu Asp Arg
 130 135 140
 Glu Ala Ile Glu Asp Ala Ile His Ala Lys Ala Ser Val Leu Gly Ser
 145 150 155 160
 Val Pro Tyr Leu Val Ala Ala Asn Val Ser Glu Arg Thr Tyr Leu Lys
 165 170 175

Leu Lys Met Leu Ser Lys Asp Trp Pro Gly Leu His Val Glu Ala Val
 180 185 190
 Val Arg Arg His Tyr Pro Gln Glu Ser Val Ala Ser Asp Ile Leu Gly
 195 200 205
 Tyr Val Gly Pro Ile Ser Leu Gln Glu Tyr Lys Arg Val Thr Gln Glu
 210 215 220
 Leu Ser Gln Leu Arg Glu Cys Val Arg Ala Tyr Glu Glu Gly Glu Asp
 225 230 235 240
 Pro Lys Leu Pro Glu Gly Leu Ala Ser Ile Asp Gln Val Arg Ala Leu
 245 250 255
 Leu Glu Ser Val Glu Ser Asn Ala Tyr Ser Leu Asn Ala Leu Val Gly
 260 265 270
 Lys Met Gly Val Glu Ala Leu Leu Gly Leu Lys Ile Thr Arg
 275 280 285

<210>737

<211>391

<212>PRT

<213>Chlamydia pneumoniae

<400>737

Val Ser Met Lys Lys Leu Leu Lys Ser Ala Leu Leu Ser Ala Ala Phe
 1 5 10 15
 Ala Gly Ser Val Gly Ser Leu Gln Ala Leu Pro Val Gly Asn Pro Ser
 20 25 30
 Asp Pro Ser Leu Leu Ile Asp Gly Thr Ile Trp Glu Gly Ala Ala Gly
 35 40 45
 Asp Pro Cys Asp Pro Cys Ala Thr Trp Cys Asp Ala Ile Ser Leu Arg
 50 55 60
 Ala Gly Phe Tyr Gly Asp Tyr Val Phe Asp Arg Ile Leu Lys Val Asp
 65 70 75 80
 Ala Pro Lys Thr Phe Ser Met Gly Ala Lys Pro Thr Gly Ser Ala Ala
 85 90 95
 Ala Asn Tyr Thr Thr Ala Val Asp Arg Pro Asn Pro Ala Tyr Asn Lys
 100 105 110
 His Leu His Asp Ala Glu Trp Phe Thr Asn Ala Gly Phe Ile Ala Leu
 115 120 125
 Asn Ile Trp Asp Arg Phe Asp Val Phe Cys Thr Leu Gly Ala Ser Asn
 130 135 140
 Gly Tyr Ile Arg Gly Asn Xaa Tyr Arg Phe Asn Leu Val Gly Leu Phe
 145 150 155 160
 Gly Val Lys Gly Thr Thr Val Asn Ala Asn Xaa Leu Pro Asn Val Ser
 165 170 175
 Leu Ser Asn Gly Val Val Glu Leu Tyr Thr Asp Thr Ser Phe Ser Trp
 180 185 190
 Ser Val Gly Ala Arg Gly Ala Leu Trp Glu Cys Gly Cys Ala Thr Leu
 195 200 205
 Gly Ala Glu Phe Gln Tyr Ala Gln Ser Lys Pro Lys Val Glu Glu Leu
 210 215 220
 Asn Val Ile Cys Asn Val Ser Gln Phe Ser Val Asn Lys Pro Lys Gly
 225 230 235 240
 Tyr Lys Gly Val Ala Phe Pro Leu Pro Thr Asp Ala Gly Val Ala Thr
 245 250 255
 Ala Thr Gly Thr Lys Ser Ala Thr Ile Asn Tyr His Glu Trp Gln Val
 260 265 270
 Gly Ala Ser Leu Ser Tyr Arg Leu Asn Ser Leu Val Pro Tyr Ile Gly
 275 280 285
 Val Gln Trp Ser Arg Ala Thr Phe Asp Ala Asp Asn Ile Arg Ile Ala
 290 295 300
 Gln Pro Lys Leu Pro Thr Ala Val Leu Asn Leu Thr Ala Trp Asn Pro
 305 310 315 320
 Ser Leu Leu Gly Asn Ala Thr Ala Leu Ser Thr Thr Asp Ser Phe Ser
 325 330 335
 Asp Phe Met Gln Ile Val Ser Cys Gln Ile Asn Lys Phe Lys Ser Arg
 340 345 350
 Lys Ala Cys Gly Val Thr Val Gly Ala Thr Leu Val Asp Ala Asp Lys

355 360 365
 Trp Ser Leu Thr Ala Glu Ala Arg Leu Ile Asn Glu Arg Ala Ala His
 370 375 380
 Val Ser Gly Gln Phe Arg Phe
 385 390
 <210>738
 <211>292
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>738
 Met Pro Leu Leu Thr Tyr Ser Asn Phe Glu Ile Glu Val Gln Ser Leu
 1 5 10 15
 Glu Ser Gln Ser Cys Lys Leu Thr Ile Lys Asp Leu Met Ser Ala Gly
 20 25 30
 Ala His Phe Gly His Gln Thr Arg Arg Trp Asn Pro Lys Met Lys Leu
 35 40 45
 Tyr Ile Phe Glu Glu Lys Asn Gly Leu Tyr Ile Ile Asn Leu Ala Lys
 50 55 60
 Thr Leu Gln Gln Leu Arg Asn Ala Leu Pro His Ile Arg Lys Val Ile
 65 70 75 80
 Gln Asp Asn Lys Thr Val Leu Phe Val Gly Thr Lys Lys Gln Ala Lys
 85 90 95
 Cys Val Ile Arg Glu Ala Ala Ile Glu Ala Gly Glu Phe Phe Ile Ala
 100 105 110
 Glu Arg Trp Leu Gly Gly Met Leu Thr Asn Met Thr Thr Ile Arg Asn
 115 120 125
 Ser Ile Lys Thr Leu Asp Lys Ile Glu Lys Asp Leu Ser Arg Asn Gln
 130 135 140
 Ala Tyr Leu Thr Lys Lys Glu Ala Ala Leu Leu Ala Lys Arg His Gln
 145 150 155 160
 Lys Leu Leu Arg Asn Leu Glu Gly Ile Arg Tyr Met Lys Lys Ala Pro
 165 170 175
 Gly Leu Leu Val Val Val Asp Pro Ser Tyr Glu Lys Ile Ala Val Ala
 180 185 190
 Glu Ala Lys Lys Leu Gly Ile Pro Val Leu Ala Leu Val Asp Thr Asn
 195 200 205
 Cys Asp Pro Thr Pro Ile Asp His Val Ile Pro Cys Asn Asp Asp Ser
 210 215 220
 Leu Lys Ser Ile Arg Leu Ile Ile Asn Val Ile Lys Glu Asn Ile Ile
 225 230 235 240
 Glu Ala Lys His Lys Leu Gly Ile Glu Ile Val Ser Pro Val Lys Ser
 245 250 255
 Leu Glu Val Pro Asp Leu Ser Ala Phe Glu Ser Ser Gln Asp Asp Glu
 260 265 270
 Ser Asp Glu Glu Asn Arg Glu Glu Asp Leu Leu Ala Lys Lys Phe Asp
 275 280 285
 Gly Glu Ala Asn
 290
 <210>739
 <211>282
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>739
 Met Ser Asp Phe Ser Met Glu Thr Leu Lys Thr Leu Arg Gln Gln Thr
 1 5 10 15
 Gly Val Gly Leu Thr Lys Cys Lys Glu Ala Leu Glu Ala Cys Gly Gly
 20 25 30
 Asn Leu Glu Glu Ala Val Val Tyr Leu Arg Lys Leu Gly Leu Ala Ser
 35 40 45
 Ala Gly Lys Lys Glu His Arg Glu Thr Lys Glu Gly Ile Ile Ala Ala
 50 55 60
 Lys Thr Asp Ala Asn Gly Thr Ala Leu Ile Glu Val Asn Val Glu Thr
 65 70 75 80
 Asp Phe Val Ala Asn Asn Ala Val Phe Arg Glu Phe Val Ser Asn Leu

<212>PRT

<213>Chlamydia pneumoniae

<400>741

Met Ser Val Leu Gln Asp Thr Glu Lys Lys Met Ala Ala Ala Leu Asp
 1 5 10 15
 Phe Phe His Lys Glu Val Lys Ser Phe Arg Thr Gly Lys Ala His Pro
 20 25 30
 Ala Leu Val Glu Thr Val Val Val Asp Val Tyr Gly Thr Thr Met Arg
 35 40 45
 Leu Ser Asp Ile Ala Ser Ile Ser Val Ala Asp Leu Arg Gln Leu Val
 50 55 60
 Ile Ser Pro Tyr Asp Gly Asn Asn Ala Ser Ala Ile Ala Lys Gly Ile
 65 70 75 80
 Ile Ala Ala Asn Leu Asn Leu Gln Pro Glu Val Glu Gly Ser Ile Ile
 85 90 95
 Arg Ile Lys Val Pro Glu Pro Thr Ala Asp Tyr Arg Gln Glu Met Ile
 100 105 110
 Lys Gln Leu Arg Arg Lys Cys Glu Ala Lys Ile Asn Val Arg Asn
 115 120 125
 Ile Arg Arg Glu Ala Asn Asp Lys Leu Lys Lys Asp Ser Ala Leu Thr
 130 135 140
 Glu Asp Val Val Lys Gly Asn Glu Lys Lys Ile Gln Glu Leu Thr Asp
 145 150 155 160
 Lys Phe Cys Lys Gln Leu Asp Glu Leu Thr Lys Gln Lys Glu Ala Glu
 165 170 175
 Ile Ala Ser Ile
 180

<210>742

<211>172

<212>PRT

<213>Chlamydia pneumoniae

<400>742

Leu Met Val His Ser Pro Thr His Gln Cys Tyr His Cys Gln Gln Pro
 1 5 10 15
 Ala Thr Ile Cys Tyr Thr Glu Ile Asp Lys Asp Lys Val Ile Arg Ser
 20 25 30
 Tyr Val Cys Ala Thr Cys Pro Cys Pro Ser His Tyr Tyr Asn Asn Glu
 35 40 45
 His Leu Ser Leu Ser Lys Gly Val Gly Val Leu Thr Leu Glu Cys Gly
 50 55 60
 Asn Cys Lys Thr Val Trp His Ser Lys Gln Asp Asp Glu Gln Leu Leu
 65 70 75 80
 Gly Cys His Gln Cys Tyr Thr Asn Phe Lys Asn Gln Ile Thr Ser Lys
 85 90 95
 Leu Lys Ser Glu Arg Val Val Ser Ser Ser Phe Thr Met Glu Lys Gly
 100 105 110
 Gln Gly Ser Leu His Ile Gly Arg Ala Pro Gly Glu Ala Ser Asn Thr
 115 120 125
 Asn Pro Leu Leu Lys Leu Ile Ala Leu Asn Glu Ala Leu Gln Asp Thr
 130 135 140
 Leu Glu Arg Glu Asp Tyr Glu Gln Ala Ala Val Ile Arg Asp Gln Ile
 145 150 155 160
 Asn His Leu Lys Thr Lys Asn Pro Asp Asp Pro Ser
 165 170

<210>743

<211>358

<212>PRT

<213>Chlamydia pneumoniae

<400>743

Met Thr Leu Pro Asn Asp Leu Leu Glu Thr Leu Val Lys Arg Lys Glu
 1 5 10 15
 Ser Pro Gln Ala Asn Lys Val Trp Pro Val Thr Thr Phe Ser Leu Ala
 20 25 30
 Arg Asn Leu Ser Val Ser Lys Phe Leu Pro Cys Leu Ser Lys Glu Gln

35	40	45
Lys Leu Glu Ile Leu Gln Phe Ile Thr Ser His Phe Asn His Ile Glu		
50	55	60
Gly Phe Gly Glu Phe Ile Val Leu Pro Leu Lys Asp Thr Pro Leu Trp		
65	70	75
Gln Lys Glu Phe Leu Leu Glu His Phe Leu Leu Pro Tyr Asp Leu Val		
85	90	95
Gly Asn Pro Glu Gly Glu Ala Leu Val Val Ser Arg Ser Gly Asp Phe		
100	105	110
Leu Ala Ala Ile Asn Phe Gln Asp His Leu Val Leu His Gly Ile Asp		
115	120	125
Phe Gln Gly Asn Val Glu Lys Thr Leu Asp Gln Leu Val Gln Leu Asp		
130	135	140
Ser Tyr Leu His Ser Lys Leu Ser Phe Ala Phe Ser Ser Glu Phe Gly		
145	150	155
Phe Leu Thr Thr Asn Pro Lys Asn Cys Gly Thr Gly Leu Lys Ser Gln		
165	170	175
Cys Phe Leu His Ile Pro Ala Leu Leu Tyr Ser Lys Glu Phe Thr Asn		
180	185	190
Leu Ile Asp Glu Glu Val Glu Ile Ile Thr Ser Ser Leu Leu Leu Gly		
195	200	205
Val Thr Gly Phe Pro Gly Asn Ile Val Val Leu Ser Asn Arg Cys Ser		
210	215	220
Leu Gly Leu Thr Glu Glu Leu Leu Leu Ser Ser Leu Arg Ile Thr Ala		
225	230	235
Ser Lys Leu Ser Val Ala Glu Val Ala Ala Lys Lys Arg Leu Ser Glu		
245	250	255
Glu Asn Ser Gly Asp Leu Lys Asn Leu Ile Leu Arg Ser Leu Gly Leu		
260	265	270
Leu Thr His Ser Cys Gln Leu Glu Leu Lys Glu Thr Leu Asp Ala Leu		
275	280	285
Ser Trp Ile Gln Leu Gly Ile Asp Leu Gly Leu Ile Lys Val Thr Glu		
290	295	300
Asn His Pro Leu Trp Asn Pro Leu Phe Trp Gln Ile Arg Arg Ala His		
305	310	315
Leu Ala Leu Gln Lys Gln Ala Glu Asn Ser Arg Asp Leu Gln Lys Asp		
325	330	335
Thr Ile Ser His Leu Arg Ala Ser Val Leu Lys Glu Leu Thr Lys Gly		
340	345	350
Leu Ser Pro Glu Ser Phe		

355

<210>744

<211>561

<212>PRT

<213>Chlamydia pneumoniae

<400>744

Ser Cys Cys Gly Tyr Pro Ser Val Pro Ser Leu Gln Arg Gln Pro Ser		
1	5	10
Ala Ala Val Asn Ile Ile Gln Pro Leu Leu Ser His Asp Ala Ile Val		
20	25	30
Ser Ala Ser Glu Ala Thr Arg His Val Ile Ile Ser Asp Ile Ala Gly		
35	40	45
Asn Val Asp Lys Val Ser Asp Leu Leu Ala Ala Leu Asp Cys Pro Gly		
50	55	60
Thr Ser Val Asp Met Thr Glu Tyr Glu Val Lys Tyr Ala Asn Pro Ala		
65	70	75
Ala Leu Val Ser Tyr Cys Gln Asp Val Leu Gly Thr Leu Ala Glu Asp		
85	90	95
Asp Ala Phe Gln Met Phe Ile Gln Pro Gly Thr Asn Lys Ile Phe Val		
100	105	110
Val Ser Ser Pro Arg Leu Ala Asn Lys Ala Glu Gln Leu Leu Lys Ser		
115	120	125
Leu Asp Val Pro Glu Met Ala His Thr Leu Asp Asp Pro Ala Ser Thr		
130	135	140

WO 99/27105

Ala Leu Ala Leu Gly Gly Thr Gly Thr Thr Ser Pro Lys Ser Leu Arg
 145 150 155 160
 Phe Phe Met Tyr Lys Leu Lys Tyr Gln Asn Gly Glu Val Ile Ala Asn
 165 170 175
 Ala Leu Gln Asp Ile Gly Tyr Asn Leu Tyr Val Thr Thr Ala Met Asp
 180 185 190
 Glu Asp Phe Ile Asn Thr Leu Asn Ser Ile Gln Trp Leu Glu Val Asn
 195 200 205
 Asn Ser Ile Val Ile Ile Gly Asn Gln Gly Asn Val Asp Arg Val Ile
 210 215 220
 Gly Leu Leu Asn Gly Leu Asp Leu Pro Pro Lys Gln Val Tyr Ile Glu
 225 230 235 240
 Val Leu Ile Leu Asp Thr Ser Leu Glu Lys Ser Trp Asp Phe Gly Val
 245 250 255
 Gln Trp Val Ala Leu Gly Asp Glu Gln Ser Lys Val Ala Tyr Ala Ser
 260 265 270
 Gly Leu Leu Asn Asn Thr Gly Ile Ala Thr Pro Thr Lys Ala Thr Val
 275 280 285
 Pro Pro Gly Thr Pro Asn Pro Gly Ser Ile Pro Leu Pro Thr Pro Gly
 290 295 300
 Gln Leu Thr Gly Phe Ser Asp Met Leu Asn Ser Ser Ser Ala Phe Gly
 305 310 315 320
 Leu Gly Ile Ile Gly Asn Val Leu Ser His Lys Gly Lys Ser Phe Leu
 325 330 335
 Thr Leu Gly Gly Leu Leu Ser Ala Leu Asp Gln Asp Gly Asp Thr Val
 340 345 350
 Ile Val Leu Asn Pro Arg Ile Met Ala Gln Asp Thr Gln Gln Ala Ser
 355 360 365
 Phe Phe Val Gly Gln Thr Val Pro Tyr Gln Thr Thr Asn Thr Ile Ile
 370 375 380
 Gln Glu Thr Gly Thr Val Thr Gln Asn Ile Asp Tyr Glu Asp Ile Gly
 385 390 395 400
 Val Asn Leu Val Val Thr Ser Thr Val Ala Pro Asn Asn Val Val Thr
 405 410 415
 Leu Gln Ile Glu Gln Thr Ile Ser Glu Leu His Ser Ala Ser Gly Ser
 420 425 430
 Leu Thr Pro Val Thr Asp Lys Thr Tyr Ala Ala Thr Arg Leu Gln Ile
 435 440 445
 Pro Asp Gly Cys Phe Leu Val Met Ser Gly His Ile Arg Asp Lys Thr
 450 455 460
 Thr Lys Val Val Ser Gly Val Pro Leu Leu Asn Ser Ile Pro Leu Ile
 465 470 475 480
 Arg Gly Leu Phe Ser Arg Thr Ile Asp Gln Arg Gln Lys Arg Asn Ile
 485 490 495
 Met Met Phe Ile Lys Pro Lys Val Ile Ser Ser Phe Glu Glu Gly Thr
 500 505 510
 Arg Val Thr Asn Lys Glu Gly Tyr Arg Tyr Asn Trp Glu Ala Asp Glu
 515 520 525
 Gly Ser Met Gln Val Ala Pro Arg His Ala Pro Glu Cys Gln Gly Pro
 530 535 540
 Pro Ser Leu Gln Ala Glu Ser Asp Phe Lys Ile Ile Glu Ile Glu Ala
 545 550 555 560
 Gln

<210>745

<211>381

<212>PRT

<213>Chlamydia pneumoniae

<400>745

Leu Lys Lys Asn Pro Val Lys Thr Val Ile Leu Asn Ile Gly Arg Lys
 1 5 10 15

Ile Leu Gln Gly Ile Lys Lys Xaa Lys Lys Lys Ile Gly Ile Xaa Ser
 20 25 30

Gly Leu Phe Phe Leu Asp Leu Val Leu Leu Gly Val Ser Xaa Gln Arg

35	40	45																	
Pro	Thr	Glu	Thr	Ser	Ala	Asn	Val	Lys	His	Asn	Leu	Arg	Asp	Glu	Lys				
50						55					60								
Leu	Ala	Ala	Cys	Pro	Lys	Asn	Ser	Ala	Ala	Ser	Leu	Ser	Ala	Lys	Lys				
65					70					75					80				
Ser	His	Thr	Lys	Lys	Thr	Thr	Pro	Gly	Ser	Ile	Pro	Ser	Lys	Val	Phe				
				85					90					95					
Ser	Lys	Phe	Asp	Ala	Thr	Gln	Asp	Lys	Thr	Phe	Gln	Lys	Thr	Ser	Gly				
			100					105					110						
Ser	Ala	Phe	Pro	Ala	Lys	Pro	Thr	Thr	Leu	Lys	Glu	Leu	Glu	Glu	Arg				
	115						120					125							
Lys	Lys	Pro	Arg	Pro	Glu	Arg	Arg	Thr	Thr	Ala	Asp	Val	Lys	Arg	Ser				
130					135						140								
Pro	Arg	Phe	Leu	Pro	Thr	Gln	Glu	Val	Glu	Glu	Pro	Val	Pro	Ala	Ala				
145				150					155					160					
Ser	Lys	Glu	Gln	Leu	Asp	Ser	Ile	Gln	Val	Trp	Glu	Glu	Lys	Gln	Asn				
			165				170						175						
Tyr	Ala	Arg	Arg	Ala	Val	Asn	Ala	Ile	Asn	Leu	Ser	Ile	Lys	Lys	Gln				
	180						185						190						
Leu	Glu	Glu	Gln	Thr	Ser	Thr	Val	Thr	Glu	Lys	Asp	Val	Gln	Pro	Lys				
	195						200					205							
Thr	Gln	Ala	Thr	Pro	His	Ala	Ser	Lys	Lys	Asn	Val	Ala	Ser	Pro	Ser				
210					215					220									
Thr	Ser	Met	Pro	Gly	Ile	Glu	Lys	Ala	Ala	Thr	Thr	Val	Ala	Val	Pro				
225				230					235					240					
Gln	Asp	Lys	Ser	Glu	Glu	Glu	Lys	Val	Lys	Glu	Arg	Leu	Thr	Lys	Arg				
			245				250						255						
Glu	Leu	Thr	Cys	Glu	Asp	Leu	Lys	Asp	Asn	Gly	Tyr	Thr	Val	Asn	Phe				
	260				265							270							
Glu	Asp	Ile	Ser	Ile	Leu	Glu	Leu	Leu	Gln	Phe	Val	Ser	Lys	Ile	Ser				
	275				280				285										
Gly	Thr	Asn	Phe	Val	Phe	Asp	Ser	Asn	Asp	Leu	Gln	Phe	Asn	Val	Thr				
290					295				300										
Ile	Val	Ser	His	Asp	Pro	Thr	Ser	Val	Asp	Asp	Leu	Ser	Thr	Ile	Leu				
305				310					315					320					
Leu	Gln	Val	Leu	Lys	Met	His	Asp	Leu	Lys	Val	Val	Glu	Gln	Gly	Asn				
			325				330						335						
Asn	Val	Leu	Ile	Tyr	Arg	Asn	Pro	His	Leu	Ser	Lys	Leu	Ser	Thr	Val				
	340						345					350							
Val	Thr	Asp	Ser	Ser	Leu	Lys	Glu	Thr	Cys	Glu	Ala	Val	Val	Val	Thr				
	355				360				365										
Arg	Val	Phe	Arg	Leu	Tyr	Ser	Val	Ser	Pro	Leu	Gln	Gln							
370					375				380										

<210>746

<211>94

<212>PRT

<213>Chlamydia pneumoniae

<400>746

Phe	Cys	Phe	Ser	Ser	Gln	Thr	Cys	Ile	Leu	Ser	Asn	Cys	Ser	Leu	Glu				
1				5					10					15					
Ala	Ala	Gly	Thr	Gly	Ser	Ser	Thr	Ser	Cys	Val	Gly	Lys	Lys	Arg	Gly				
			20					25					30						
Asp	Leu	Phe	Thr	Ser	Ala	Val	Val	Leu	Arg	Ser	Gly	Arg	Gly	Phe	Phe				
	35					40					45								
Leu	Ser	Ser	Ser	Ser	Phe	Arg	Val	Val	Gly	Phe	Ala	Gly	Asn	Ala	Asp				
	50				55				60										
Pro	Glu	Val	Phe	Trp	Lys	Val	Leu	Ser	Trp	Val	Ala	Ser	Asn	Leu	Glu				
65				70					75					80					
Lys	Thr	Leu	Leu	Gly	Ile	Glu	Pro	Gly	Val	Val	Phe	Leu	Val						
				85					90										

<210>747

<211>502

<212>PRT

<213>Chlamydia pneumoniae

<400>747

Met Asp Cys Arg Gly Gly Ile Pro Leu Pro Glu Pro Gln Val Ile Gly
 1 5 10 15
 Gly Tyr His Val Lys Lys Ile Leu Ser Lys Lys Leu Arg Ser Arg Val
 20 25 30
 Val His Gly Leu His Pro Glu Thr Arg His Ser Thr Val Ile Lys Val
 35 40 45
 Phe Ser Pro Ser Pro Ser Phe Thr Ser Arg Ser Val Tyr Asn Phe Leu
 50 55 60
 Lys Glu Ala Gln Ser Leu His Gln Ile Thr His Pro Asn Ile Val Lys
 65 70 75 80
 Phe His Arg Tyr Gly Lys Trp Gln Asp Cys Leu Tyr Ile Ala Met Glu
 85 90 95
 Tyr Ile Glu Gly Ile Ser Leu Arg Glu Tyr Ile Leu Ala Gln Phe Ile
 100 105 110
 Ser Leu Pro Gln Ala Ile Asp Ile Ile Phe Asp Ile Ala Gln Ala Leu
 115 120 125
 Glu His Leu His Ser Arg Asn Ile Leu His Lys Asp Ile Lys Pro Glu
 130 135 140
 Asn Ile Leu Ile Thr Pro Gln Gly Lys Ile Lys Leu Ile Asp Phe Gly
 145 150 155 160
 Leu Ala Asp Trp Asp Thr Glu Ile Gln Arg Ala His Pro Ser Val Ile
 165 170 175
 Gly Thr Pro Tyr Tyr Met Ser Pro Glu Gln Arg Gln Gly Glu Ser His
 180 185 190
 Ser Pro Ala Ser Asp Ile Tyr Ala Leu Gly Leu Leu Ala Tyr Glu Leu
 195 200 205
 Ile Leu Gly His Leu Ser Leu Gly Arg Val Phe Leu Ser Leu Val Pro
 210 215 220
 Glu Arg Ile Ser Lys Ile Leu Ala Lys Ala Leu Gln Pro Ser Pro Asn
 225 230 235 240
 Asn Arg Tyr Ser Ser Thr Arg Glu Phe Ile Gln Asp Ile His His Tyr
 245 250 255
 Arg Met Ser Gly Asp Met Gln Glu Asp Leu Arg Ile Lys Asp His Thr
 260 265 270
 Val Ala Leu Tyr Glu Gln Leu Gln Thr Gln Arg Phe Trp Leu Ala Pro
 275 280 285
 Glu Thr Leu Arg Phe Pro Asp Phe Ile Ser Gly Val Leu Tyr His Gln
 290 295 300
 Gly Tyr Pro Leu Tyr Pro His Ala Tyr Asp Thr Leu Leu Glu Gly Asp
 305 310 315 320
 Val Phe Asn Leu Trp Leu Gly Tyr Ser Pro Ile Ser Asn Ala Thr Ile
 325 330 335
 Ala Leu Ser Val Val Lys Ser Leu Val Cys Gln Gln Asp Leu Gln Arg
 340 345 350
 Pro Leu Leu Asp Arg Val Cys Glu Ile Asn Glu Cys Leu Ile Arg Met
 355 360 365
 Lys Ile Pro Ile Asp Glu Met Gly Ile Ser Ile Leu Cys Leu Glu Ile
 370 375 380
 Ser Lys Glu Asn Lys Glu Leu Ser Trp Ile Ala Cys Gly Lys Thr Val
 385 390 395 400
 Phe Trp Ile Lys Arg Gln Gly Arg Val Val Gln Asp Phe Glu Ser Phe
 405 410 415
 Ser Pro Gly Leu Gly Lys Ile Thr Ser Leu Gln Ile Arg Glu Thr Lys
 420 425 430
 Val Ala Trp Glu Ile Gly Asp Glu Ala Val Val Cys Thr Leu Glu Leu
 435 440 445
 Glu Glu Ser Val Ala Ser Leu Lys Thr Leu Ser Leu Ala Glu Leu Gln
 450 455 460
 Asp Arg Arg Gln Lys Ala Ile Phe Cys Pro Ile Glu Ser Ile His Gly
 465 470 475 480
 Gly Ile Gln Ser Arg Gln His Gly Ser Asn Ser Pro Ser Thr Leu Ile
 485 490 495
 Ser Leu Lys Arg Ile Arg

<210>748

<211>374

<212>PRT

<213>Chlamydia pneumoniae

<400>748

Arg Tyr Phe Met Ala Val Ala Ala Asp Ser Ser Ala Ser Trp Leu Lys
 1 5 10 15
 Ser Arg Asn Asn Phe Leu Ser Ser Leu Gly Lys Thr Glu Glu Gln Val
 20 25 30
 Ala Ala Pro Glu Phe Pro Lys Glu Leu Cys Gln His Lys Ile Arg Glu
 35 40 45
 Lys Phe Arg Leu Glu Asp Val Gln Val Ser Ile Lys Phe Arg Gly Ser
 50 55 60
 Ile Thr Ala Val Glu Ala Thr Lys Glu Phe Gly Val His Leu Leu Ile
 65 70 75 80
 Gln Pro Met Val Val Gln Pro Trp Glu Val Glu Asn Leu Leu Phe Leu
 85 90 95
 Thr Ser Glu Glu Asp Leu Gln Glu Leu Met Val Ala Val Phe Asp Asp
 100 105 110
 Ala Ser Leu Ala Ser Tyr Phe Tyr Glu Lys Asp Lys Leu Leu Gly Phe
 115 120 125
 His Tyr Tyr Phe Val Ala Glu Ala Cys Lys Leu Phe Glu Glu Leu Gln
 130 135 140
 Trp Val Pro Ser Leu Ser Ala Lys Val Gly Gly Asp Ala Ile Phe Thr
 145 150 155 160
 Ala Thr Ser Leu Gln Gly Ser Phe Gln Val Val Asp Ile Ser Leu Arg
 165 170 175
 Leu Asp Gly Lys Asn Val Arg Cys Arg Leu Leu Leu Pro Glu Asp Thr
 180 185 190
 Phe Gln Ser Cys Gln Lys Phe Phe Ser Gly Leu His Asp Glu Ser Asp
 195 200 205
 Leu His Asn Ile Asp Gln Thr Gln Gln Ile Ser Leu Ser Val Glu Val
 210 215 220
 Gly Tyr Ser Gln Leu Thr Gln Glu Glu Trp His Gln Val Val Pro Gly
 225 230 235 240
 Ser Phe Ile Met Leu Asp Ser Cys Leu Tyr Asp Pro Glu Thr Glu Glu
 245 250 255
 Ser Gly Ala Leu Leu Thr Val Gln Lys His Gln Phe Phe Gly Gly Arg
 260 265 270
 Phe Leu Thr Pro Ser Ser Gly Glu Phe Lys Ile Thr Ser Tyr Pro Asn
 275 280 285
 Leu Thr His Glu Asp Pro Pro Leu Pro Glu Asn Pro Gln Ala Ser Ala
 290 295 300
 Ala Pro Leu Pro Gly Tyr Ser Arg Leu Val Val Glu Val Ala Arg Tyr
 305 310 315 320
 Ser Leu Ala Val Ser Glu Phe Ile Lys Leu Asn Leu Gly Ser Ile Leu
 325 330 335
 Ser Leu Gly Asn His Pro Ala Tyr Gly Val Asp Ile Ile Leu Asp Gly
 340 345 350
 Ala Lys Val Gly Arg Gly Glu Ile Ala Leu Gly Asp Val Leu Gly
 355 360 365
 Ile Arg Val Leu Glu Val
 370

<210>749

<211>281

<212>PRT

<213>Chlamydia pneumoniae

<400>749

Phe Met Glu Leu Lys Lys Thr Ala Glu Ser Leu Tyr Ser Ala Lys Thr
 1 5 10 15
 Asp Asn His Thr Val Tyr Gln Asn Ser Pro Glu Pro Arg Asp Ser Arg
 20 25 30
 Asp Val Lys Val Phe Ser Leu Glu Gly Lys Gln Thr Arg Gln Glu Lys

35 40 45
 Thr Thr Ser Ser Lys Gly Asn Thr Arg Thr Glu Ser Arg Lys Phe Ala
 50 55 60
 Asp Glu Glu Lys Arg Val Asp Asp Glu Ile Ala Glu Val Gly Ser Lys
 65 70 75 80
 Glu Glu Glu Gln Glu Ser Gln Glu Phe Cys Leu Ala Glu Asn Ala Phe
 85 90 95
 Ala Gly Met Ser Leu Ile Asp Ile Ala Ala Ala Gly Ser Ala Glu Ala
 100 105 110
 Val Val Glu Val Ala Pro Ile Ala Val Ser Ser Ile Asp Thr Gln Trp
 115 120 125
 Ile Glu Asn Ile Ile Leu Ser Thr Val Glu Ser Met Val Ile Ser Glu
 130 135 140
 Ile Asn Gly Glu Gln Leu Val Glu Leu Val Leu Asp Ala Ser Ser Ser
 145 150 155 160
 Val Pro Glu Ala Phe Val Gly Ala Asn Leu Thr Leu Val Gln Ser Gly
 165 170 175
 Gln Asp Leu Ser Val Lys Phe Ser Ser Phe Val Asp Ala Thr Gln Met
 180 185 190
 Ala Glu Ala Ala Asp Leu Val Thr Asn Asn Pro Ser Gln Leu Ser Ser
 195 200 205
 Leu Val Ser Ala Leu Lys Gly His Gln Leu Thr Leu Lys Glu Phe Ser
 210 215 220
 Val Gly Asn Leu Leu Val Gln Leu Pro Lys Ile Glu Glu Val Gln Thr
 225 230 235 240
 Pro Leu His Met Ile Ala Ser Thr Ile Arg His Arg Glu Glu Lys Asp
 245 250 255
 Gln Arg Asp Gln Asn Gln Lys Gln Lys Gln Asp Asp Lys Glu Gln Asp
 260 265 270
 Ser Tyr Lys Ile Glu Glu Ala Arg Leu
 275 280

<210>750

<211>174

<212>PRT

<213>Chlamydia pneumoniae

<400>750

Tyr Ala Val Ala Lys Tyr Pro Leu Glu Pro Val Leu Ala Ile Lys Lys
 1 5 10 15
 Asp Arg Val Asp Arg Ala Glu Lys Val Val Lys Glu Lys Arg Arg Leu
 20 25 30
 Leu Glu Ile Glu Gln Glu Lys Leu Arg Glu Lys Glu Ala Glu Arg Asp
 35 40 45
 Lys Val Lys Asn His Tyr Met Gln Lys Ile Gln Gln Leu Arg Asp Leu
 50 55 60
 Leu Asp Glu Gly Thr Thr Ser Asp Ala Val Leu Gln Ile Lys Ser Tyr
 65 70 75 80
 Ile Lys Val Val Ala Val Gln Leu Ser Glu Glu Glu Lys Val Asn
 85 90 95
 Lys Gln Lys Glu Val Val Leu Ala Ala Ser Lys Glu Leu Glu Lys Ala
 100 105 110
 Glu Val Asn Leu Ala Lys Arg Arg Lys Glu Glu Glu Lys Thr Arg Leu
 115 120 125
 His Lys Glu Glu Trp Met Lys Glu Ala Leu Lys Glu Glu Val Ala Leu
 130 135 140
 Lys Lys Lys Asn Lys Thr Arg Trp Gly Ser Cys Phe Ser Asn Cys Ala
 145 150 155 160
 Arg Lys Lys Asn Val Asn Gln Gly Glu Ala Ser Ser Trp Asn
 165 170

<210>751

<211>442

<212>PRT

<213>Chlamydia pneumoniae

<400>751

Met Asp Gln Leu Thr Thr Asp Phe Asp Thr Leu Met Ser Gln Leu Gly

1 5 10 15
 Asp Val Asn Leu Thr Thr Val Val Gly Arg Ile Thr Glu Val Val Gly
 20 25 30
 Met Leu Ile Lys Ala Val Val Pro Asn Val Arg Val Gly Glu Val Cys
 35 40 45
 Leu Val Lys Arg Asn Gly Met Glu Pro Leu Val Thr Glu Val Val Gly
 50 55 60
 Phe Thr Gln Ser Phe Ala Phe Leu Ser Pro Leu Gly Glu Leu Ser Gly
 65 70 75 80
 Val Ser Pro Ser Ser Glu Val Ile Pro Thr Gly Leu Pro Leu His Ile
 85 90 95
 Arg Ala Gly Asn Gly Leu Leu Gly Arg Val Leu Asn Gly Leu Gly Glu
 100 105 110
 Pro Ile Asp Val Glu Thr Lys Gly Pro Leu Gln Asn Val Asp Gln Thr
 115 120 125
 Phe Pro Ile Phe Arg Ala Pro Pro Asp Pro Leu His Arg Ala Lys Leu
 130 135 140
 Arg Gln Ile Leu Ser Thr Gly Val Arg Cys Ile Asp Gly Met Leu Thr
 145 150 155 160
 Val Ala Arg Gly Gln Arg Ile Gly Ile Phe Ala Gly Ala Gly Val Gly
 165 170 175
 Lys Ser Ser Leu Leu Gly Met Ile Ala Arg Asn Ala Glu Glu Ala Asp
 180 185 190
 Val Asn Val Ile Ala Leu Ile Gly Glu Arg Gly Arg Glu Val Arg Glu
 195 200 205
 Phe Ile Glu Gly Asp Leu Gly Glu Gly Met Lys Arg Ser Val Ile
 210 215 220
 Val Val Ser Thr Ser Asp Gln Ser Ser Gln Leu Arg Leu Asn Ala Ala
 225 230 235 240
 Tyr Val Gly Thr Ala Ile Ala Glu Tyr Phe Arg Asp Gln Gly Lys Thr
 245 250 255
 Val Val Leu Met Met Asp Ser Val Thr Arg Phe Ala Arg Ala Leu Arg
 260 265 270
 Glu Val Gly Leu Ala Ala Gly Glu Pro Pro Ala Arg Ala Gly Tyr Thr
 275 280 285
 Pro Ser Val Phe Ser Thr Leu Pro Arg Leu Leu Glu Arg Ser Gly Ala
 290 295 300
 Ser Asp Lys Gly Thr Ile Thr Ala Phe Tyr Thr Val Leu Val Ala Gly
 305 310 315 320
 Asp Asp Met Asn Glu Pro Val Ala Asp Glu Val Lys Ser Ile Leu Asp
 325 330 335
 Gly His Ile Val Leu Ser Asn Ala Leu Ala Gln Ala Tyr His Tyr Pro
 340 345 350
 Ala Ile Asp Val Leu Ala Ser Ile Ser Arg Leu Leu Thr Ala Ile Val
 355 360 365
 Pro Glu Glu Gln Arg Arg Ile Ile Gly Lys Ala Arg Glu Val Leu Ala
 370 375 380
 Lys Tyr Lys Ala Asn Glu Met Leu Ile Arg Ile Gly Glu Tyr Arg Arg
 385 390 395 400
 Gly Ser Asp Arg Glu Ile Asp Phe Ala Ile Asp His Ile Asp Lys Leu
 405 410 415
 Asn Arg Phe Leu Lys Gln Asp Ile His Glu Lys Thr Asn Tyr Glu Glu
 420 425 430
 Ala Ala Gln Gln Leu Arg Ala Ile Phe Arg
 435 440

<210>752

<211>235

<212>PRT

<213>Chlamydia pneumoniae

<400>752

Ala Phe Lys Thr Val Lys Arg Phe Phe Cys Phe Met Ile Asp Pro Val
 1 5 10 15
 Glu Cys Phe Pro Asn Leu Asp Gly Asp Ala Glu Ala Gln Ser Ile Thr
 20 25 30

Gln Asn Ser Gly Thr Pro Leu Ala Ser Glu Leu Lys Lys Asp Ile Ser
 35 40 45
 Pro Phe Ala Leu Gly Ser Tyr Ala Ala Pro Lys Asp Thr Thr Leu Val
 50 55 60
 Gln Gly Phe Lys Pro Asn Pro Met Ala Met Met Gln Asp Gln Asn Ser
 65 70 75 80
 Asn Leu Ile Asp Pro Glu Leu Gln Glu Ala Leu Glu Ser Glu Glu Leu
 85 90 95
 Gln Glu Gln Ile Asn Asn Leu Lys Gly Arg Leu Trp Asp Phe Arg Ser
 100 105 110
 Thr Phe Glu Asp Ser Gln Thr Thr Ala Gln Phe Ala Asp Glu His Phe
 115 120 125
 Gln Ala Val Gly Val Ile Ile Asp Leu Ile Asn Glu Asp Leu Asn Thr
 130 135 140
 Ile Ala Glu His Thr Gln Gln Asp Ala Arg Lys Glu Asp Lys Glu Glu
 145 150 155 160
 Gly Ser Val Thr Arg Lys Ile Ile Asp Trp Val Ser Ser Gly Glu Glu
 165 170 175
 Val Leu Asn Arg Ala Leu Leu Tyr Phe Ser Asp Arg Asp Gly Asn Arg
 180 185 190
 Glu Ser Leu Ala Asn Phe Leu Lys Val Gln Tyr Ala Val Gln Arg Ala
 195 200 205
 Thr Gln Arg Ala Glu Leu Phe Ala Ser Ile Val Gly Thr Ser Val Ser
 210 215 220
 Ser Val Lys Thr Ile Met Thr Thr Gln Leu Gly
 225 230 235

<210>753

<211>91

<212>PRT

<213>Chlamydia pneumoniae

<400>753

Arg Ser Arg Gly Glu Lys Ser Met Ala Thr Asn Lys Ser Cys Thr Ala
 1 5 10 15
 Phe Asp Phe Asn Lys Met Leu Asp Gly Val Cys Thr Tyr Val Lys Gly
 20 25 30
 Val Gln Gln Tyr Leu Thr Glu Leu Glu Thr Ser Thr Gln Gly Thr Val
 35 40 45
 Asp Leu Gly Thr Met Phe Asn Leu Gln Phe Arg Met Gln Ile Leu Ser
 50 55 60
 Gln Tyr Met Glu Ser Val Ser Asn Ile Leu Thr Ala Val Asn Thr Glu
 65 70 75 80
 Met Ile Thr Met Ala Arg Ala Val Lys Gly Ser
 85 90

<210>754

<211>102

<212>PRT

<213>Chlamydia pneumoniae

<400>754

Thr Thr Ile Asn Asn Gln Val Leu Gly Phe Ile Asn Tyr Leu Tyr Leu
 1 5 10 15
 Gly Arg Tyr Ser Met Phe Asn Met Glu Asn Thr Ala Lys Glu Glu Lys
 20 25 30
 Asn Ser Gln Pro Leu Leu Asp Leu Glu Gln Asp Met Gln Asp His Asp
 35 40 45
 Arg Ala Gln Glu Leu Lys Ala Ser Val Gln Asp Lys Val His Lys Leu
 50 55 60
 His Ala Leu Leu Arg Glu Gly Ser Asp Lys Glu Ser Phe Gly Gln Gln
 65 70 75 80
 Gln Ser Leu Leu Ala Gly Tyr Val Ala Leu Gln Lys Val Leu Gly Arg
 85 90 95
 Ile Asn Arg Lys Met Ile
 100

<210>755

<211>440

<212>PRT

<213>Chlamydia pneumoniae

<400>755

Pro Glu Leu Ile Phe Gly Ala Glu Phe His Leu Asp Ser Gly Lys Thr
1 5 10 15
Tyr Ile Leu Gly Thr Asp Pro Thr Thr Cys Asp Ile Val Phe Asn Asp
20 25 30
Leu Ser Val Ser His Gln His Ala Lys Ile Thr Val Gly Asn Asp Gly
35 40 45
Gly Ile Leu Ile Glu Asp Leu Asp Ser Lys Asn Gly Val Ile Val Glu
50 55 60
Gly Arg Lys Ile Asp Lys Thr Ser Thr Leu Ser Ser Asn Gln Val Val
65 70 75 80
Ala Leu Gly Thr Thr Leu Phe Leu Leu Ile Asp His His Ala Pro Ala
85 90 95
Asp Thr Ile Val Ala Ser Leu Ser Pro Asp Asp Tyr Ser Leu Phe Gly
100 105 110
Arg Gln Gln Asp Ala Glu Ala Leu Glu Arg Gln Glu Ala Gln Glu Glu
115 120 125
Glu Glu Lys Gln Lys Arg Ala Thr Leu Pro Ala Gly Ser Phe Ile Leu
130 135 140
Thr Leu Phe Val Gly Gly Leu Ala Ile Leu Phe Gly Ile Gly Thr Ala
145 150 155 160
Ser Leu Phe His Thr Lys Glu Val Val Pro Leu Glu Asn Ile Asp Tyr
165 170 175
Gln Glu Asp Leu Ala Gln Val Ile Asn Gln Phe Pro Thr Val Arg Tyr
180 185 190
Thr Phe Asn Lys Thr Asn Ser Gln Leu Phe Leu Ile Gly His Val Lys
195 200 205
Asn Ser Thr Asp Lys Ser Glu Leu Leu Tyr Lys Val Asp Ala Leu Ser
210 215 220
Phe Val Lys Ser Val Asp Asp Asn Val Ile Asp Asp Glu Ala Val Trp
225 230 235 240
Gln Glu Met Asn Ile Leu Leu Ser Lys Arg Pro Glu Phe Lys Gly Ile
245 250 255
Ser Met His Ser Pro Glu Pro Gly Lys Phe Ile Ile Thr Gly Tyr Val
260 265 270
Lys Thr Glu Glu Gln Ala Ala Cys Leu Val Asp Tyr Leu Asn Ile His
275 280 285
Phe Asn Ser Leu Ser Leu Leu Glu Asn Lys Val Val Xaa Thr Xaa
290 295 300
Met Leu Lys Ala Ile Ala Gly His Leu Leu Gln Gly Gly Phe Ala Asn
305 310 315 320
Ile His Val Ala Phe Val Asn Gly Glu Val Ile Leu Thr Gly Tyr Val
325 330 335
Asn Asn Asp Asp Ala Glu Lys Phe Arg Ala Val Val Gln Glu Leu Ser
340 345 350
Gly Ile Pro Gly Val Arg Leu Val Lys Asn Phe Ala Val Leu Leu Pro
355 360 365
Ala Glu Glu Gly Ile Ile Asp Leu Asn Leu Arg Tyr Pro Asn Arg Tyr
370 375 380
Arg Val Thr Gly Tyr Ser Arg Tyr Gly Glu Ile Ser Ile Asn Val Val
385 390 395 400
Val Asn Gly Arg Ile Leu Thr Arg Gly Asp Val Ile Asp Gly Met Thr
405 410 415
Val Thr Ser Ile Gln Pro Asn Ala Ile Phe Leu Glu Lys Xaa Gly Leu
420 425 430
Lys Tyr Lys Ile Asp Tyr Asn Lys
435 440

<210>756

<211>202

<212>PRT

<213>Chlamydia pneumoniae

<400>756

Arg Thr Ser Pro Arg Gln Asp Pro Gln Pro Lys Ser Ala Glu Pro Ser
 1 5 10 15
 Leu Lys Asn Thr Ala Arg Asp Glu Thr Pro Leu Lys Glu Asn Lys Pro
 20 25 30
 Val Glu Glu Lys Ala Asn Lys Lys Ala Thr Pro Asp Ser Pro Glu Lys
 35 40 45
 Lys Asp Gln Pro Glu Glu Gly Ser Lys Lys Glu Gly Ser Lys Ile Glu
 50 55 60
 Ala Thr Pro Leu Asp Ser Gln Lys Glu Ser Glu Asp Lys Glu Ala Glu
 65 70 75 80
 Glu Ala Phe Val Gln Glu Glu Glu Glu Asn Leu Thr Glu Asp Asn Lys
 85 90 95
 Glu Asp Ser Asp Ser Ala Ala Asp Ala Asn Asp Asp Thr Ala Ser Asp
 100 105 110
 His Thr Ala Glu Asp Asn Lys Glu Thr Pro Lys Lys Val Glu Asn Glu
 115 120 125
 Lys Ser Ala Val Leu Ser Pro Phe His Val Gln Asp Leu Phe Arg Phe
 130 135 140
 Asp Gln Thr Ile Phe Pro Ala Glu Ile Asp Asp Ile Ala Lys Lys Asn
 145 150 155 160
 Ile Ser Val Asp Leu Thr Gln Pro Ser Arg Phe Leu Leu Lys Val Leu
 165 170 175
 Ala Gly Ala Asn Ile Trp Ser Arg Val Pro Phe Arg Leu Arg Lys Asn
 180 185 190
 Leu Tyr Phe Arg Tyr Gly Ser Tyr Asn Leu
 195 200

<210>757

<211>255

<212>PRT

<213>Chlamydia pneumoniae

<400>757

Met Ala Val Arg Leu Ile Val Asp Glu Gly Pro Leu Ser Gly Val Ile
 1 5 10 15
 Phe Val Leu Glu Asp Gly Ile Ser Trp Ser Ile Gly Arg Asp Ser Ser
 20 25 30
 Ala Asn Asp Ile Pro Ile Glu Asp Pro Lys Leu Gly Ala Ser Gln Ala
 35 40 45
 Ile Ile Asn Lys Thr Asp Gly Ser Tyr Tyr Ile Thr Asn Leu Asp Asp
 50 55 60
 Thr Ile Pro Ile Val Val Asn Gly Val Ala Ile Gln Glu Thr Thr Gln
 65 70 75 80
 Leu Lys Asn Glu Asp Thr Ile Leu Leu Gly Ser Asn Gln Tyr Ser Phe
 85 90 95
 Leu Ser Asp Glu Phe Asp Pro Gln Asp Leu Val Tyr Asp Phe Asp Ile
 100 105 110
 Pro Glu Glu Asn Phe Ser Asn Asp Ser Gly Asp Leu Ser Asp Ser Asn
 115 120 125
 Glu Gln Gly Lys Asp Leu Glu Pro Arg Gln Thr Ser Glu Thr Asn His
 130 135 140
 Ser Pro Lys Pro Lys Glu Lys Leu Thr Lys Asp Gln Gly Ser Ser Asp
 145 150 155 160
 Pro Ile Thr Ser Gly Asp Gln Glu Leu Ala Asp Ala Phe Leu Ala Ser
 165 170 175
 Ala Lys Ala Glu Lys Asn Gln Pro Arg Ala Lys Val Ala Lys Lys Gly
 180 185 190
 Leu Lys Glu Ser Ser Asn Glu Ser Leu Asn Pro Lys Glu Gln Asn Ala
 195 200 205
 Lys Asp Ser Pro Lys Gly Glu Glu Arg Thr Asn Lys Pro Gln Asn Ala
 210 215 220
 Ile Met Glu Asp Asn Gly Leu Arg Leu Gly Lys Ile Arg Asn Gln Ser
 225 230 235 240
 Gln Gln Asn Pro Leu Lys Thr Gln Pro Gly Met Arg Leu Pro
 245 250 255

<210>758

<211>162

<212>PRT

<213>Chlamydia pneumoniae

<400>758

Leu Asp Leu Lys Glu Glu Lys Ala Gly Phe Arg Asn Glu Ile Val Ser
1 5 10 15
Ile Pro Gln Gly Thr Lys Thr Thr Ile Ala Ala Leu Glu Asn Thr Ser
20 25 30
Met Leu Glu Lys Leu Ile Lys Asn Phe Ala Thr Tyr Met Gly Ile Thr
35 40 45
Ser Thr Leu Glu Leu Asp Ala Asp Gly Ala Tyr Val Leu Pro Ile Ser
50 55 60
Glu Val Val Lys Val Arg Ala Gln Gln Asn Ala Asp Asn Glu Ile Val
65 70 75 80
Leu Ser Ala Ser Leu Gly Ala Leu Pro Pro Ser Ala Asp Thr Ala Lys
85 90 95
Leu Tyr Leu Gln Met Met Ile Gly Asn Leu Phe Gly Arg Glu Thr Gly
100 105 110
Gly Ser Ala Leu Gly Leu Asp Ser Glu Gly Asn Val Val Met Val Arg
115 120 125
Arg Phe Ser Gly Asp Thr Thr Tyr Asp Asp Phe Val Arg His Val Glu
130 135 140
Ser Phe Met Asn Phe Ser Glu Thr Trp Leu Ser Asp Leu Gly Leu Gly
145 150 155 160
Lys Gln

<210>759

<211>341

<212>PRT

<213>Chlamydia pneumoniae

<400>759

Val Leu Met Val Leu Gly Val Val Gly Ile Ser Tyr Arg Glu Ala Ala
1 5 10 15
Leu Lys Glu Arg Glu Arg Ala Ile Gln Tyr Leu Gln Ser Phe Glu Lys
20 25 30
Asn Leu Phe Leu Ala Gln Arg Phe Leu Gly Lys Gly Gly Ala Phe Ile
35 40 45
Pro Leu Leu Thr Cys His Arg Ala Glu Leu Tyr Tyr Ser Glu Ser
50 55 60
Pro Glu Ile Ala Gln Ala Ala Leu Leu Ser Glu Leu Thr Ser Gln Gly
65 70 75 80
Ile Arg Pro Tyr Arg His Arg Gly Leu Ser Cys Phe Thr His Leu Phe
85 90 95
Gln Val Thr Ser Gly Ile Asp Ser Leu Ile Phe Gly Glu Thr Glu Ile
100 105 110
Gln Gly Gln Val Lys Arg Ala Tyr Leu Lys Gly Ser Lys Glu Arg Glu
115 120 125
Leu Pro Phe Asp Leu His Phe Leu Phe Gln Lys Ala Leu Lys Glu Gly
130 135 140
Lys Glu Tyr Arg Ser Arg Ile Gly Phe Pro Asp His Gln Val Thr Ile
145 150 155 160
Glu Ser Val Val Gln Glu Ile Leu Leu Ser Tyr Asp Lys Ser Ile Tyr
165 170 175
Thr Asn Phe Leu Phe Val Gly Tyr Ser Asp Ile Asn Arg Lys Val Ala
180 185 190
Ala Tyr Leu Tyr Gln His Gly Tyr His Arg Ile Thr Phe Cys Ser Arg
195 200 205
Gln Gln Val Thr Ala Pro Tyr Arg Thr Leu Ser Arg Glu Thr Leu Ser
210 215 220
Phe Arg Gln Pro Tyr Asp Val Ile Phe Phe Gly Ser Ser Glu Ser Ala
225 230 235 240
Ser Gln Phe Ser Asp Leu Ser Cys Glu Ser Leu Ala Ser Ile Pro Lys
245 250 255
Arg Ile Val Phe Asp Phe Asn Val Pro Arg Thr Phe Leu Trp Lys Glu

260 265 270
 Thr Pro Thr Gly Phe Val Tyr Leu Asp Ile Asp Phe Ile Ser Glu Cys
 275 280 285
 Val Gln Lys Arg Leu Gln Cys Thr Lys Glu Gly Val Asn Lys Ala Lys
 290 295 300
 Leu Leu Leu Thr Cys Ala Lys Lys Gln Trp Glu Ile Tyr Glu Lys
 305 310 315 320
 Lys Ser Ser His Ile Thr Gln Arg Gln Ile Ser Ser Pro Arg Ile Pro
 325 330 335
 Ser Val Leu Ser Tyr
 340
 <210>760
 <211>426
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>760
 Met Ala Ala Tyr Thr Glu Ala Ser Ile Leu Ser Leu Ala Ser Leu Asp
 1 5 10 15
 His Ile Arg Leu Arg Ala Gly Met Tyr Ile Gly Arg Leu Gly Asn Gly
 20 25 30
 Ser Gln Lys Glu Asp Gly Ile Tyr Thr Leu Phe Lys Glu Val Val Asp
 35 40 45
 Asn Gly Ile Asp Glu Phe Ile Met Gly His Gly Lys Ser Leu Lys Ile
 50 55 60
 Ser Ala Ser Asp Lys Gln Ile Ser Ile Gln Asp Gln Gly Arg Gly Ile
 65 70 75 80
 Pro Leu Gly Lys Leu Ile Asp Cys Val Ser Lys Ile Asn Thr Gly Ala
 85 90 95
 Lys Tyr Thr Gln Asp Val Phe His Phe Ser Val Gly Leu Asn Gly Val
 100 105 110
 Gly Leu Lys Ala Val Asn Ala Leu Ser Glu Ile Phe Ser Val Arg Ser
 115 120 125
 Val Arg Lys Lys Lys Tyr His Leu Ala Thr Phe His Arg Gly Val Leu
 130 135 140
 Gln Glu Ser Lys Gln Gly Ser Thr Lys Asp Pro Asp Gly Thr Phe Val
 145 150 155 160
 Ser Phe Thr Pro Asp Pro Ser Ile Phe Pro Glu Phe Thr Phe Asn His
 165 170 175
 Asp Phe Leu Lys Asp Lys Ile Arg Gln Tyr Thr Tyr Leu His Ser Gly
 180 185 190
 Leu Glu Ile Arg Phe Asn Asp Glu Val Phe Ile Ser His Asn Gly Leu
 195 200 205
 Lys Asp Leu Phe Asp Ala Glu Ile Thr Glu Pro Pro Leu Tyr Ser Pro
 210 215 220
 Leu Phe Phe Gln Asn Glu Asp Leu Thr Phe Ile Phe Ser His Leu Glu
 225 230 235 240
 Gly Asn Thr Glu Arg Tyr Phe Ser Phe Val Asn Gly Gln Glu Thr Leu
 245 250 255
 Asp Gly Gly Thr His Leu Thr Ala Phe Lys Glu Ala Ile Val Lys Gly
 260 265 270
 Val Asn Glu Phe Phe Gly Lys Thr Phe Val Ser Asn Asp Ile Arg Glu
 275 280 285
 Gly Ile Val Gly Cys Ile Ala Ile Lys Ile Ala Ser Pro Ile Phe Glu
 290 295 300
 Ser Gln Thr Lys Asn Lys Leu Gly Asn Thr Gln Ile Arg Ser Ser Leu
 305 310 315 320
 Ile Lys Asp Val Lys Glu Ala Ile Val Gln Ala Leu Arg Lys Asp Lys
 325 330 335
 Val Ala Pro Glu Leu Leu Leu Glu Lys Ile Lys Phe Asn Glu Lys Thr
 340 345 350
 Arg Lys Asn Ile Gln Phe Ile Lys Gln Asp Leu Lys Ser Lys Gln Lys
 355 360 365
 Lys Val His Tyr Lys Ile Pro Lys Leu Arg Asp Cys Lys Phe His Tyr
 370 375 380

Asn Asp Arg Ser Leu Tyr Gly Glu Ala Ser Ser Ile Phe Leu Thr Glu
 385 390 395 400
 Gly Ser Leu Arg Pro His Gln Phe Leu Leu Gln Glu Ile Pro Ser His
 405 410 415
 Lys Leu Ser Phe His Phe Glu Glu Ser Leu
 420 425

<210>761

<211>125

<212>PRT

<213>Chlamydia pneumoniae

<400>761

Trp Thr Phe Phe Cys Leu Leu Leu Arg Ser Cys Phe Ile Asn Trp Ile
 1 5 10 15
 Phe Phe Arg Val Phe Ser Leu Asn Phe Ile Phe Ser Lys Arg Ser Ser
 20 25 30
 Gly Ala Thr Leu Ser Leu Arg Arg Ala Cys Thr Ile Ala Ser Phe Thr
 35 40 45
 Ser Leu Ile Lys Glu Asp Arg Ile Cys Val Phe Pro Ser Leu Phe Phe
 50 55 60
 Val Cys Asp Ser Lys Ile Gly Glu Ala Ile Phe Ile Ala Met Gln Pro
 65 70 75 80
 Thr Met Pro Ser Arg Met Ser Leu Glu Thr Asn Val Phe Pro Lys Asn
 85 90 95
 Ser Leu Thr Pro Phe Thr Met Ala Ser Leu Lys Ala Val Arg Cys Val
 100 105 110
 Pro Pro Ser Arg Val Ser Cys Pro Leu Thr Lys Glu Lys
 115 120 125

<210>762

<211>210

<212>PRT

<213>Chlamydia pneumoniae

<400>762

Gly Leu Phe Asp Phe Pro Tyr Arg Arg Glu Ser Ala Ser Ala Ser Ile
 1 5 10 15
 Leu Ala Ser Arg Asn Pro Leu Thr Gln Ala Val Phe Ser Leu Arg Gly
 20 25 30
 Lys Pro Met Asn Val Phe Ser Leu Glu Glu Thr Lys Met Tyr Lys Asn
 35 40 45
 Asp Glu Leu Phe Tyr Leu Ala Thr Ala Leu Gly Ile Thr Gln Asn Glu
 50 55 60
 Ile Gln His Leu Arg Tyr Asn Lys Val Ile Leu Ala Thr Asp Ala Asp
 65 70 75 80
 Val Asp Gly Met His Ile Arg Asn Leu Leu Ile Thr Phe Phe Leu Lys
 85 90 95
 Thr Leu Leu Pro Leu Val Glu Asn Asn His Leu Phe Ile Leu Glu Thr
 100 105 110
 Pro Leu Phe Lys Val Arg Asn Lys Thr Thr Thr Leu Tyr Tyr Tyr Ser
 115 120 125
 Glu Gln Glu Lys Met Gln Ala Leu Gln Gln Phe Gly Lys Lys Asp Ser
 130 135 140
 Ser Leu Glu Ile Thr Arg Phe Lys Gly Leu Gly Glu Ile Ser Pro Lys
 145 150 155 160
 Glu Phe Ala Ala Phe Ile Gly Pro Glu Ile Arg Leu Thr Pro Val Thr
 165 170 175
 Ile Thr Ser Leu Glu Ser Ile Ser Ser Ile Leu Gln Phe Tyr Met Gly
 180 185 190
 Lys Asn Thr Lys Glu Arg Lys Gln Phe Ile Met Asp Asn Leu Ile Thr
 195 200 205

Asp Phe

210

<210>763

<211>479

<212>PRT

<213>Chlamydia pneumoniae

<400>763

Phe Met Arg Asp Val Ser Glu Leu Phe Arg Thr His Phe Met His Tyr
 1 5 10 15
 Ala Ser Tyr Val Ile Leu Glu Arg Ala Ile Pro His Ile Leu Asp Gly
 20 25 30
 Leu Lys Pro Val Gln Arg Arg Leu Trp Thr Leu Phe Leu Met Asp
 35 40 45
 Asp Gly Lys Met His Lys Val Ala Asn Ile Ala Gly Arg Thr Met Ala
 50 55 60
 Leu His Pro His Gly Asp Ala Pro Ile Val Glu Ala Leu Val Val Leu
 65 70 75 80
 Ala Asn Lys Gly Tyr Leu Ile Asp Thr Gln Gly Asn Phe Gly Asn Pro
 85 90 95
 Leu Thr Gly Asp Pro His Ala Ala Ala Arg Tyr Ile Glu Ala Arg Leu
 100 105 110
 Ser Pro Leu Ala Arg Glu Thr Leu Phe Asn Thr Asp Leu Ile Ala Phe
 115 120 125
 His Asp Ser Tyr Asp Gly Arg Glu Lys Glu Pro Asp Ile Leu Pro Ala
 130 135 140
 Lys Leu Pro Val Leu Leu Leu His Gly Val Asp Gly Ile Ala Val Gly
 145 150 155 160
 Met Thr Thr Lys Ile Phe Pro His Asn Phe Ala Glu Leu Leu Lys Ala
 165 170 175
 Gln Ile Ala Ile Leu Asn Asp Lys Lys Phe Thr Val Phe Pro Asp Phe
 180 185 190
 Pro Ser Gly Gly Leu Met Asp Pro Ser Glu Tyr Gln Asp Gly Leu Gly
 195 200 205
 Ser Ile Thr Leu Arg Ala Ser Ile Asp Ile Ile Asn Asp Lys Thr Leu
 210 215 220
 Val Val Lys Gln Ile Cys Pro Gln Ser Thr Thr Glu Thr Leu Ile Arg
 225 230 235 240
 Ser Ile Glu Asn Ala Ala Lys Arg Gly Thr Ile Lys Ile Asp Thr Ile
 245 250 255
 Gln Asp Phe Ser Thr Asp Val Pro His Ile Glu Ile Lys Leu Pro Lys
 260 265 270
 Gly Ser Arg Ala Lys Glu Met Leu Pro Leu Leu Phe Glu His Thr Glu
 275 280 285
 Cys Gln Val Ile Leu Tyr Ser Lys Pro Thr Val Ile Tyr Glu Asn Lys
 290 295 300
 Pro Val Glu Cys Ser Ile Ser Glu Ile Leu Lys Leu His Thr Thr Ala
 305 310 315 320
 Leu Gln Gly Tyr Leu Glu Lys Glu Leu Leu Leu Leu Gln Glu Gln Leu
 325 330 335
 Thr Leu Asp His Tyr His Lys Thr Leu Glu Tyr Ile Phe Ile Lys His
 340 345 350
 Lys Leu Tyr Asp Ser Val Arg Glu Val Leu Ala Ile Asn Lys Lys Ile
 355 360 365
 Ser Ala Asp Asp Leu His Gln Ala Val Leu His Ala Leu Glu Pro Trp
 370 375 380
 Leu His Glu Leu Ala Thr Pro Val Thr Lys Gln Asp Thr Ser Gln Leu
 385 390 395 400
 Ala Ser Leu Thr Ile Lys Lys Ile Leu Cys Phe Asn Glu Glu Ala Cys
 405 410 415
 Thr Lys Glu Leu Leu Ala Ile Glu Lys Lys Gln Ala Ala Ile Gln Lys
 420 425 430
 Asp Leu Gly Arg Ile Lys Glu Val Thr Val Lys Tyr Leu Lys Gly Leu
 435 440 445
 Leu Glu Arg His Gly His Leu Gly Glu Arg Lys Thr Gln Ile Thr Asn
 450 455 460
 Phe Lys Thr Ala Lys Thr Ser Ile Leu Lys Gln Gln Thr Leu Ile
 465 470 475

<210>764

<211>109

<212>PRT

WO 9927105
<213>Chlamydia pneumoniae

<400>764

Arg Ala Val Met Ser Phe Thr Tyr Phe Leu Ala Leu Pro Val Asp Arg
1 5 10 15
Leu Met Gln Glu Arg Phe Leu Cys Ser Pro Lys Arg Trp Ala Pro Phe
20 25 30
Ile Asn Ser Pro Leu Tyr Leu Thr Leu Ile Ala Asp His Asp Thr Pro
35 40 45
Tyr Leu Ala Lys Asn Leu Asp Lys Phe Pro Leu Pro Val Glu Gln Trp
50 55 60
Glu Lys Thr Val Leu His Val Ser Ser Leu Leu Lys Ser Ile Phe Leu
65 70 75 80
Cys Ser Asp Leu Ser Ser Leu Arg Leu Leu Ala Cys Thr Lys Phe Glu
85 90 95
Ile Leu Thr Leu Asn Asp Leu Tyr Cys Ala Gln Asn Ile
100 105

<210>765

<211>325

<212>PRT

<213>Chlamydia pneumoniae

<400>765

Met Lys Thr Val Thr Ser Phe Thr Val Cys Lys Glu Asn Ser Gly Arg
1 5 10 15
Leu Asp Lys Tyr Leu Thr Glu Val His Pro Lys Tyr Ser Arg Ala Phe
20 25 30
Tyr Gln Glu His Ile Leu Ser Gly Leu Val Gln Ile Asn Gly Gln Ile
35 40 45
Asn Thr Arg Val Ala Thr Arg Leu Asn Cys Gly Asp Ile Val Thr Ile
50 55 60
Asp Ile Gln Glu Lys Glu Glu Leu Leu Glu Leu Leu Pro Glu Ala Ile
65 70 75 80
Pro Leu Asp Lys Val Tyr Glu Asp Gly Met Ile Leu Val Ile Asn Lys
85 90 95
Pro Arg Asp Met Val Val His Pro Ala Pro Gly His Phe His Gly Thr
100 105 110
Leu Val His Ala Leu Leu His Glu Ile Gly Glu Arg Leu Lys Glu Glu
115 120 125
Phe Pro Glu Glu Pro Trp Arg Pro Gly Ile Val His Arg Leu Asp Lys
130 135 140
Asp Thr Ser Gly Leu Ile Ile Thr Ala Lys Thr Arg Gln Ala Lys Lys
145 150 155 160
Val Phe Ser Glu Leu Phe Ser Thr Lys Arg Leu Lys Lys Ser Tyr Leu
165 170 175
Ala Val Cys Ile Gly Lys Pro Arg Ser Thr Thr Ile His Thr His Ile
180 185 190
Ser Arg His Gln Asn Lys Arg Lys Glu Met Thr Val Ser Ser Gln Gly
195 200 205
Lys Glu Ala Val Thr His Cys Gln Val Leu Ala Phe Asn Gly Lys Leu
210 215 220
Ser Phe Val Ala Leu Ser Pro Glu Thr Gly Arg Thr His Gln Leu Arg
225 230 235 240
Val His Met Lys His Leu Gly Thr Pro Ile Leu Gly Asp Pro Val Tyr
245 250 255
Gly Ile Pro Ser Met Asn Ser Ser Tyr Gly Leu Asp Lys Gln Gln Leu
260 265 270
His Ala Tyr Ser Val Asp Phe Thr His Pro Glu Thr Arg Gln Phe Cys
275 280 285
Ser Leu Lys Ala Gly Leu Pro Glu Asp Met Arg Ser Leu Leu Ile Lys
290 295 300
Glu Phe Arg Asn Glu Thr Thr Ile Leu Asn Lys Asn Leu Leu Glu Ser
305 310 315 320
Ile Leu Lys Glu Gln
325

<210>766

<211>82

<212>PRT

<213>Chlamydia pneumoniae

<400>766

Leu Arg Ile Thr Met Lys Glu Phe Leu Ala Tyr Ile Ile Lys Asn Leu
 1 5 10 15
 Val Asp Arg Pro Glu Glu Val Arg Ile Lys Glu Val Gln Gly Thr His
 20 25 30
 Thr Ile Ile Tyr Glu Leu Ser Val Ala Lys Pro Asp Ile Gly Lys Ile
 35 40 45
 Ile Gly Lys Glu Gly Arg Thr Ile Lys Ala Ile Arg Thr Leu Leu Val
 50 55 60
 Ser Val Ala Ser Arg Asn Asn Val Arg Val Ser Leu Glu Ile Met Glu
 65 70 75 80
 Glu Lys

<210>767

<211>273

<212>PRT

<213>Chlamydia pneumoniae

<400>767

Lys Arg Met Val Met Phe Asn Asn Lys Met Ile Leu Ile Ala Gly Pro
 1 5 10 15
 Cys Val Ile Glu Gly Glu Asp Ile Thr Leu Glu Ile Ala Gly Lys Leu
 20 25 30
 Gln Ser Ile Leu Ala Pro Tyr Ser Asp Arg Ile Gln Trp Phe Phe Lys
 35 40 45
 Ser Ser Tyr Asp Lys Ala Asn Arg Ser Ser Leu Asn Ser Phe Arg Gly
 50 55 60
 Pro Gly Leu Thr Glu Gly Leu Arg Ile Leu Ala Lys Val Lys Glu Thr
 65 70 75 80
 Phe Gly Val Gly Ile Leu Thr Asp Val His Thr Pro Gln Asp Ala Tyr
 85 90 95
 Ala Ala Ala Glu Val Cys Asn Ile Leu Gln Val Pro Ala Phe Leu Cys
 100 105 110
 Xaa Gln Thr Asp Leu Leu Val Ala Thr Ala Glu Thr Gly Ala Ile Val
 115 120 125
 Asn Leu Lys Lys Gly Gln Phe Leu Ser Pro Trp Asp Met Glu Gly Pro
 130 135 140
 Ile Asn Lys Val Leu Ser Thr Gly Asn Asn Lys Ile Leu Leu Thr Glu
 145 150 155 160
 Arg Gly Cys Ser Phe Gly Tyr Asn Asn Leu Val Ser Asp Met Arg Ser
 165 170 175
 Ile Pro Val Leu Ser Arg Ser Gly Phe Pro Val Ile Phe Asp Ala Thr
 180 185 190
 His Ser Val Gln Leu Pro Gly Ala Leu Ser Thr Glu Ser Gly Gly Leu
 195 200 205
 Thr Glu Phe Val Pro Thr Leu Ser Arg Ala Ala Leu Ala Ala Gly Ala
 210 215 220
 His Gly Leu Phe Ile Glu Thr His Thr Asn Pro Lys Ile Ala Lys Ser
 225 230 235 240
 Asp Ala Ala Ser Met Leu Ser Leu Glu Glu Phe Ala Ala Leu Leu Pro
 245 250 255
 Thr Trp Asp Gln Leu Phe Thr Cys Val Ser Ser Phe Asp Met Val Ser
 260 265 270
 Ala

<210>768

<211>162

<212>PRT

<213>Chlamydia pneumoniae

<400>768

Met Thr Lys Phe Leu Tyr Cys Gly Leu Phe Tyr Ser Leu Gly Leu Leu
 1 5 10 15

Val Leu Ala Phe Gly Thr Met Val Ala Ile Ile Gln Val Asp Gln Ile
 20 25 30
 Cys Asp Val Ser Cys Met Asn Lys His Phe Gln Glu Ser Pro Pro Phe
 35 40 45
 Leu Lys Ile Lys Lys Val Asn Val Ser Lys Gln Ile Cys Ser Pro Glu
 50 55 60
 Glu Arg Phe Phe His Cys Lys Ile Asp Lys Ser Cys Met Glu Leu His
 65 70 75 80
 Phe Pro Gln Ser Ser Tyr Ser Cys Lys Glu Tyr Leu Thr Arg Ile Ser
 85 90 95
 Gly His Ile Leu Thr Gln Asn Phe Glu Lys Gln Met Gln Phe Arg Gly
 100 105 110
 Asn Ser Gly Leu Leu Asn Tyr Gln Asp Gly Ser Leu His Val Tyr Asp
 115 120 125
 Cys Arg Phe Gln Val Asp Pro Val Pro Gly Tyr Gly Ser Pro Asp Lys
 130 135 140
 Glu Asp Ser Ser Ser Gly Gly Met Lys Thr Leu Tyr Leu Ser Leu Phe
 145 150 155 160
 Arg Asn

<210>769

<211>240

<212>PRT

<213>Chlamydia pneumoniae

<400>769

Met Pro Ile Leu Ser Val Cys Asn Leu Val Lys Lys Tyr Asn Lys Lys
 1 5 10 15
 Pro Val Thr Asn Asp Val Ser Phe Gln Ile Asn Pro Gly Glu Ile Val
 20 25 30
 Gly Leu Leu Gly Pro Asn Gly Ala Gly Lys Thr Thr Ala Phe Tyr Leu
 35 40 45
 Thr Val Gly Leu Ile Arg Pro Asp Ser Gly Lys Ile Ile Phe Lys Asn
 50 55 60
 Val Asp Val Thr Lys Lys Thr Met Asp His Arg Ala Arg Leu Gly Ile
 65 70 75 80
 Gly Tyr Leu Ala Gln Glu Pro Thr Ile Phe Lys Glu Leu Thr Val Gln
 85 90 95
 Asp Asn Leu Ile Cys Ile Leu Glu Ile Ile Tyr Lys Ala Arg Lys Gln
 100 105 110
 Gln Ser His Leu Leu Asn Thr Leu Val Asp Asp Leu Gln Leu Gly Ser
 115 120 125
 Cys Leu His Lys Lys Ala Gly Thr Leu Ser Gly Gly Glu Arg Arg Arg
 130 135 140
 Leu Glu Ile Ala Cys Val Leu Ala Leu Asn Pro Ser Val Leu Leu Leu
 145 150 155 160
 Asp Glu Pro Phe Ala Asn Val Asp Pro Leu Val Ile Gln Asn Val Lys
 165 170 175
 Tyr Leu Ile Lys Ile Leu Ala Gly Arg Gly Ile Gly Ile Leu Ile Thr
 180 185 190
 Asp His Asn Ala Lys Glu Leu Leu Ser Ile Ala Asp Arg Cys Tyr Leu
 195 200 205
 Ile Ile Asp Gly Lys Ile Phe Phe Glu Gly Ser Ser Ser Gln Met Ile
 210 215 220
 Ser Asn Pro Met Val Lys Gln His Tyr Leu Gly Asp Ser Phe Ser Tyr
 225 230 235 240

<210>770

<211>299

<212>PRT

<213>Chlamydia pneumoniae

<400>770

Arg Thr Ser Thr Arg Leu Asp Tyr Arg Ser Gly Cys Ile Leu Ser Lys
 1 5 10 15
 Ile Leu Pro Phe Pro Glu Leu Trp Lys Met Leu Leu Gly Phe Leu Cys
 20 25 30

Asp Cys Pro Cys Ala Ser Trp Gln Cys Ala Ala Val Ala Asn Cys Tyr
 35 40 45
 Asp Ser Val Phe Met Ser Arg Pro Glu His Lys Pro Asn Ile Pro Tyr
 50 55 60
 Ile Thr Lys Ala Thr Arg Arg Gly Leu Arg Met Lys Thr Leu Ala Tyr
 65 70 75 80
 Leu Ala Ser Leu Lys Asp Ala Arg Gln Leu Ala Tyr Asp Phe Leu Lys
 85 90 95
 Asp Pro Gly Ser Leu Ala Arg Leu Ala Lys Ala Leu Ile Ala Pro Lys
 100 105 110
 Glu Ala Leu Gln Glu Gly Asn Leu Phe Phe Tyr Gly Cys Ser Asn Ile
 115 120 125
 Glu Asp Ile Leu Glu Glu Met Arg Arg Pro His Arg Ile Leu Leu Leu
 130 135 140
 Gly Phe Ser Tyr Cys Gln Lys Pro Lys Ala Cys Pro Glu Gly Arg Phe
 145 150 155 160
 Asn Asp Ala Cys Arg Tyr Asp Pro Ser His Pro Thr Cys Ala Ser Cys
 165 170 175
 Ser Ile Gly Thr Met Met Arg Leu Asn Ala Arg Arg Tyr Thr Thr Val
 180 185 190
 Ile Ile Pro Thr Phe Ile Asp Ile Ala Lys His Leu His Thr Leu Lys
 195 200 205
 Lys Arg Tyr Pro Gly Tyr Gln Ile Leu Phe Ala Val Thr Ala Cys Glu
 210 215 220
 Leu Ser Leu Lys Met Phe Gly Asp Tyr Ala Ser Val Met Asn Leu Lys
 225 230 235 240
 Gly Val Gly Ile Arg Leu Thr Gly Arg Ile Cys Asn Thr Phe Lys Ala
 245 250 255
 Phe Lys Leu Ala Glu Arg Gly Val Lys Pro Gly Val Thr Ile Leu Glu
 260 265 270
 Glu Asp Gly Phe Glu Val Leu Ala Arg Ile Leu Thr Glu Tyr Ser Ser
 275 280 285
 Ala Pro Phe Pro Arg Asp Phe Cys Glu Ile His
 290 295

<210>771

<211>438

<212>PRT

<213>Chlamydia pneumoniae

<400>771

Val Tyr Lys Ser Leu Val Thr Phe Lys Cys Gly Glu His Leu Gly Ala
 1 5 10 15
 Ile Trp Ala Tyr Phe Thr Ala Ser Thr Val Val Ala Leu Asn Pro Thr
 20 25 30
 Ala Thr Met Asp His Val Lys Ala Ala Ile Leu Glu Glu Ala Lys Glu
 35 40 45
 Leu Asp Asn Ser Ser Phe Gln Leu Ala Ser Ser Ile Lys Ser Ala Met
 50 55 60
 Thr Ser Ile Val Asn Ser Ser Gly Ser Phe Ser Val Thr Val Asn Ser
 65 70 75 80
 Ser Thr Leu Gln Tyr Thr Ile Tyr Ser Glu Lys Asn Gly Lys Val Glu
 85 90 95
 Ile Asn Gln Ile Leu Leu Asn Tyr Gly Ser Thr Gly Phe Leu Pro Glu
 100 105 110
 Ile Thr Lys Leu Ala Lys Thr Asn Ala Glu Ser Thr Ala Arg Ser Tyr
 115 120 125
 Phe Arg Phe Lys Ala Leu Ala Ala Val Glu Ser Glu Asn Val Gln Asn
 130 135 140
 Lys Ile Glu Asp Leu Gln Ser Gln Leu Gln Gln Phe Thr Asn Met Lys
 145 150 155 160
 Thr Glu Leu Phe Asp Gly Gln Leu Leu Ser Gln Ala Ser Glu Leu Arg
 165 170 175
 Ala Leu Pro Leu Ser Ala Val Ala Ser Val Leu Ile Asp Arg Tyr
 180 185 190
 Met Pro Lys Glu Val Asp Tyr Leu Asn Glu Ile Tyr Lys Lys Leu Tyr

	195		200		205										
Tyr	Ser	Asn	Leu	Gly	Ser	Ser	Val	Gly	Asn	Ser	Ile	Ile	Asp	Ala	Ile
	210					215					220				
Ser	Gln	Tyr	Val	Asn	Gly	Ala	Thr	Tyr	Phe	Asn	Phe	Ala	Ser	Tyr	Val
225					230					235					240
Gly	Gln	Gln	Pro	Ala	Val	Gly	Ala	Gly	Gly	Ala	Asn	Ala	Phe	Pro	Gly
				245					250					255	
Ser	Gln	Glu	Ser	Ala	Gln	Ala	Lys	Leu	Asp	Gln	Glu	Arg	Lys	Gln	Ala
			260					265					270		
Ala	Leu	Tyr	Leu	Gln	Glu	Thr	Arg	Gly	Ala	Leu	Thr	Val	Ile	Glu	Glu
	275						280					285			
Gln	Arg	Ala	Arg	Val	Leu	Lys	Asp	Asp	Lys	Ile	Thr	Asn	Glu	Gln	Arg
290						295					300				
Ser	Thr	Ile	Leu	Asp	Ser	Leu	Arg	Asn	Tyr	Glu	Asp	Asn	Ile	Asn	Ser
305					310				315					320	
Ile	Ser	Gly	Ser	Leu	Val	Leu	Leu	Gln	Asn	Tyr	Leu	Gln	Pro	Leu	Ser
			325					330					335		
Ile	Ala	Gly	Gly	Ser	Val	Ala	Gly	Thr	Phe	Glu	Val	Lys	Glu	Gly	Gln
			340					345					350		
Glu	Gln	Trp	Gln	Ala	Arg	Leu	Gln	Ile	Leu	Glu	Glu	Ala	Leu	Val	Ser
	355						360					365			
Gly	Leu	Val	Gly	Asn	Met	Ile	Asn	Gly	Gly	Met	Phe	Pro	Leu	Gln	Ser
370					375					380					
Thr	Ile	Gln	Ser	Asp	Gln	Gln	Ser	Phe	Ala	Asp	Met	Gly	Gln	Asn	Phe
385					390					395					400
Gln	Leu	Asp	Leu	Gln	Met	His	Leu	Thr	Ser	Met	Gln	Gln	Glu	Trp	Thr
			405					410					415		
Val	Val	Ala	Thr	Ser	Leu	Gln	Leu	Leu	Asn	Gln	Met	Tyr	Leu	Ser	Leu
		420					425					430			
Ala	Arg	Ser	Leu	Thr	Gly										
	435														

<210>772

<211>422

<212>PRT

<213>Chlamydia pneumoniae

<400>772

Ala	Asp	Ile	Asp	Met	Ile	Tyr	Ser	Thr	Ser	Ile	Ser	Thr	Phe	Tyr	Lys
1				5					10					15	
Lys	Leu	Ser	Leu	Val	Ser	Ser	Met	His	Ser	Phe	Ala	Gln	Arg	His	Arg
			20					25					30		
Glu	Ser	Leu	Glu	His	Ile	Ala	Asn	Tyr	Glu	Lys	Thr	Thr	Ala	Glu	Arg
		35					40					45			
Asp	Ile	Leu	Lys	Arg	Leu	Ile	Glu	Val	Leu	Asp	Gln	Arg	Ala	Ser	Glu
	50					55				60					
Arg	Tyr	Arg	Ser	Ala	Val	Glu	Lys	Leu	His	Lys	Tyr	Glu	Val	Glu	Arg
65					70					75				80	
Ala	Thr	Val	Ala	Lys	Ser	Ile	Pro	Val	Ala	Ala	Ile	His	Glu	Lys	Pro
				85				90					95		
Leu	Ser	Ser	Thr	His	Ala	Ser	Val	Gln	Val	Thr	Ala	Ser	Thr	Pro	Ala
		100						105					110		
Ala	Thr	Gly	Ser	Gly	Val	Gly	Ala	Tyr	Tyr	Asn	Ala	Val	Lys	Gln	Lys
	115						120					125			
Trp	Ala	Gln	Asp	Leu	Ile	Val	Glu	Leu	Asn	Thr	Val	Met	Thr	Thr	Ile
	130					135					140				
Met	Ala	Ser	Val	Asn	Ser	Lys	Asn	Pro	Ala	Asn	Lys	Asp	Val	Phe	Asp
145				150						155				160	
Lys	Leu	Asn	Thr	Glu	Leu	Gln	Ala	Leu	Val	Ala	Ala	Gly	Asn	Asn	Leu
			165					170					175		
Thr	Glu	Glu	Asn	Phe	Gln	Thr	Leu	Tyr	Asn	Phe	Pro	Glu	Glu	Ile	Phe
			180					185					190		
Thr	Ala	Ile	Gln	Arg	Ala	Asp	Thr	Phe	Thr	Gly	Gly	Met	Lys	Thr	Asp
	195					200						205			
Phe	Thr	Asn	Gln	Leu	Ala	Gly	Lys	Tyr	Gly	Asn	Gln	Ala	Thr	Leu	Thr
	210					215						220			

Gln Thr Phe Ala Asp Gly Arg Val Glu Gly Phe Lys Asp Ile Leu Thr
 225 230 235 240
 Ala Val Gln Gly Val Leu Thr Pro Glu Gln Phe Thr Ile Phe Ala Glu
 245 250 255
 Ile Ala Thr Glu Leu Gln Ala Leu Ala Asp His Val Gly Asn Phe Asp
 260 265 270
 Glu Ala Gly Leu Gln Arg Ile Glu Asp Ala Gly Glu Lys Leu Ala Ala
 275 280 285
 Val Ile Asn Ser Ser Asp Leu Thr Arg Asn Asp Lys Ile Met Phe Cys
 290 295 300
 Gln His Ile Thr Asp Leu Tyr Ser Asp Gln Val Ala Ala Leu Gly Ser
 305 310 315 320
 Phe Asp Thr Val Leu Asp Ala Ser Ile Tyr Val Asn Gln His Gln Gly
 325 330 335
 Thr Met Phe Ser Asn Leu Ser Ser Phe Val Gly Ser Leu Ile Gly Thr
 340 345 350
 Phe Ala Pro Ile Asp Leu Ser Ser Ser Gln Gly Asp Ile Ser Ser Ala
 355 360 365
 Ala Leu Ala Gly Ala Leu Gln Thr Ala Arg Gly Leu Asn Ser Arg Phe
 370 375 380
 Asn Glu Leu Thr Ala Glu Gln Gln Lys Leu Ile Asn Glu Cys Ile Asn
 385 390 395 400
 Leu Trp Leu Pro Leu Ser Val Val Ser Thr Leu Val Leu Ser Gly Leu
 405 410 415
 Ile Leu Gln His Leu Leu
 420

<210>773

<211>645

<212>PRT

<213>Chlamydia pneumoniae

<400>773

Lys Tyr Tyr Leu Phe Ser Met Ser Thr Phe Ser Ile Gln Asn Arg Leu
 1 5 10 15
 Arg Thr Ile Ser Gly Glu Ser Thr Arg Ile Ile Lys Leu Asp His Lys
 20 25 30
 Tyr Ser Gly Phe Asp Pro Arg Ser Val Pro Ala Ile Asn Leu Glu Glu
 35 40 45
 Leu Asn Ser Gly Ile Tyr Ala Leu Arg His Leu Met Asn Ala Leu Gln
 50 55 60
 Ser Glu Asn Thr Asn Val Ala Ala Leu Leu Asn Pro Asn Asn Thr Ile
 65 70 75 80
 Phe Pro Thr Thr Ser Trp Thr Asp Tyr Lys His Ser Arg Pro Gln Ala
 85 90 95
 Ser Ser Pro Arg Ala Pro Ser Ser Gln Thr Pro Thr Asp Ile Val Ser
 100 105 110
 Ala Ala Ala Leu Ala Leu Val Leu Val Ile Asp Gly Gly Leu Ala Glu
 115 120 125
 Leu Val Ala Ser Val Thr Glu Ile Asp Leu Gly Ala Leu Ser Thr Ile
 130 135 140
 Ser Thr Val Arg Gln Leu Met Ala Ser Tyr Leu Gly Leu Thr Thr Leu
 145 150 155 160
 Thr Ala Glu Gln Glu Lys Val Val Phe Ser Ser Ser Tyr Val Pro Ser
 165 170 175
 Glu Lys Asn Leu Leu Glu His Val Lys Gln Glu Lys Ala Ala Glu Ile
 180 185 190
 Gln Ala Lys Gln Glu Glu Ile Lys Ala Val Leu Glu Ala Lys Gly Val
 195 200 205
 Ser Thr Glu Glu Ile Glu Ala Ile Leu Lys Glu Tyr Pro Asp Ile Tyr
 210 215 220
 Ala Ala Asp Phe Phe Lys Glu Phe Ile Glu Glu Pro Leu His Thr Tyr
 225 230 235 240
 Arg Ala Lys Val Gly Ala Pro Ile Gln Glu Met Asn Glu Asn Ala Ile
 245 250 255
 Gln Leu Leu Pro Thr Pro Pro Ala Ile Thr Pro Asp Asn Val Asn Glu

260 265 270
 Val Asn Gly Met Asn Thr Leu Ser Thr Ile Leu Gln Ala Ile Asp Asp
 275 280 285
 Ala Ile Lys Gln Ala Pro Ala Leu Gly Gly Asp Gln Glu Ile Ile Thr
 290 295 300
 Ile Leu Gln Thr Leu Val Pro Leu Val Asp Lys Thr Thr Phe Thr Lys
 305 310 315 320
 Ala Glu Phe Asp Leu Ile Tyr Thr Ala Thr Gln Leu Pro Asn Thr Ala
 325 330 335
 Ser Leu Lys Leu Tyr Leu Thr Asp Arg Gln Ile Ala Glu Tyr Arg Gly
 340 345 350
 Lys Ile Thr Lys Val Tyr Gln Asn Ser Ile Gln Asn Leu Ser Glu Thr
 355 360 365
 Lys Arg Val Val Glu Asn Asn Arg Ser Met Leu Glu Thr Gln Leu Ser
 370 375 380
 Met Phe Gln Gln Ala Gln Asn Cys Phe Val Thr Trp Ile Ser Gln Ala
 385 390 395 400
 Asn Ala Leu Asn Ile Ala Ile Thr Asn Lys Tyr Ile Ser Ala Val Leu
 405 410 415
 Thr Thr Ser Met Glu Met Tyr Gly Gly Leu Leu Cys Leu Ser Tyr Met
 420 425 430
 Tyr Glu Arg Leu Ala Asp Asp Glu Lys Ala Ile Phe Asp Lys Ser Val
 435 440 445
 Asn Glu Tyr Leu Pro Ile His Ile Val Val Gly Gly Ser Trp Val Asn
 450 455 460
 Gly Trp Ile Ala Lys Met Ala Ala Tyr Gln Glu Leu Ala Glu Tyr Ser
 465 470 475 480
 Leu Gly Thr Ala Val Thr Ser Gln Asp Gln Ile Lys Ala Tyr Leu Gln
 485 490 495
 Thr Arg Gly Asn Glu Phe Lys Ala Thr Arg His Phe Phe His Asn Ile
 500 505 510
 Gly Asp Gln Met Tyr Gln Phe Ala Asn Glu Thr Val Phe Gly Asn Cys
 515 520 525
 Leu Thr Thr Ala Asn Gly Ala Ile Gln Pro Asp Leu Gly Gly Phe Ile
 530 535 540
 Arg Glu Ala Met Thr Asn Val Gly Thr Val Glu Ala Asp Tyr Val Ser
 545 550 555 560
 Asn Ala Gln Arg Ile Leu Asn Glu Phe Asn Thr Ala Ala Thr Ala His
 565 570 575
 Val Leu Gln Leu Gln Leu Gln Ile Ala Glu Leu Gln Lys Lys Ala Asp
 580 585 590
 Asp Leu Asp Pro Gly Lys Ala Ser Phe Thr Glu Asn Arg Lys Phe Ala
 595 600 605
 Val Ala Ala Leu Asp His Ile Gly Glu Leu Arg Arg Cys Phe Asn Phe
 610 615 620
 Tyr Asp Phe Xaa Leu Ser Ala Thr Lys Ala Arg Gly Phe Phe Lys Thr
 625 630 635 640
 Phe Asp Arg Arg Asn
 645

<210>774

<211>284

<212>PRT

<213>Chlamydia pneumoniae

<400>774

Thr Gln Glu Lys Pro Leu Ser Leu Arg Thr Val Asn Leu Leu Leu Pro
 1 5 10 15
 Leu Trp Ile Thr Ser Glu Ser Leu Gly Asp Ala Leu Ile Ser Met Ile
 20 25 30
 Xaa Asn Ser Gln Leu Pro Lys Gln Glu Ala Phe Leu Lys Pro Leu Ile
 35 40 45
 Glu Glu Ile Asn Phe Asn Asn Leu Ala Ala Asn Ala Leu Asn Ser Leu
 50 55 60
 Leu Gln Ile Thr Asn Glu Phe Ser Thr Thr Ser Val Tyr Tyr Ser Leu
 65 70 75 80

Ser Ser Tyr Leu Val Gln Ser Lys Thr Gly Gln Asn Leu Phe Ala Gly
 85 90 95
 Asp Tyr Tyr Glu Thr Leu Leu Ala Ala Arg Glu Arg Glu Tyr Ile
 100 105 110
 Tyr Arg Asp Thr Ala Arg Cys Lys Gln Ala Ile Asn Leu Val Asn Gly
 115 120 125
 Leu Leu Gln Lys Ile Asn Ser Leu Pro Gly Ala Thr Ser Ala Gln Lys
 130 135 140
 Gln Glu Met Leu Asn Ala Thr Thr Tyr Tyr Gln Tyr Ser Leu Ser Val
 145 150 155 160
 Thr Leu Asn Gln Leu Thr Val Leu Glu Ser Leu Leu Ala Gly Leu Lys
 165 170 175
 Met Thr Leu Gln Thr Thr Ser Asn Asn Lys Tyr Asp Lys Ser Val Phe
 180 185 190
 Lys Ile Glu Ser Phe Asp Asp Trp Ile Pro Thr Leu Ala Ala Leu Glu
 195 200 205
 Ser Phe Leu Thr Ser Gly Phe Pro Asn Ile Ser Ala Thr Gly Gly Leu
 210 215 220
 Gly Pro Leu Phe Thr Gln Val Gln Ser Asp Gln Gln Thr Tyr Thr Ser
 225 230 235 240
 Gln Gly Gln Thr Gln Gln Leu Asn Leu Gln Asn Gln Met Thr Thr Ile
 245 250 255
 Gln Gln Glu Trp Thr Leu Val Ser Thr Ser Met Gln Val Leu Asn Gly
 260 265 270
 Ile Leu Ser Gln Leu Ala Gly Ala Ile Tyr Ser Asn
 275 280

<210>775

<211>212

<212>PRT

<213>Chlamydia pneumoniae

<400>775

Asp Arg Ser Leu Leu Leu Leu Phe Val Ser Ala Gly Val Pro Pro Ala
 1 5 10 15
 Ala Ala Ser Ser Ile Gly Ser Ser Val Asn Gln Leu Tyr Lys Thr Ser
 20 25 30
 Lys Ser Thr Gly Ser Asp Tyr Lys Thr Gln Ile Ser Ala Gly Tyr Asp
 35 40 45
 Ala Tyr Lys Ser Ile Asn Asp Ala Tyr Gly Arg Ala Arg Asn Asp Ala
 50 55 60
 Thr Arg Asp Val Ile Asn Asn Val Ser Thr Pro Ala Leu Thr Arg Ser
 65 70 75 80
 Val Pro Arg Ala Arg Thr Glu Ala Arg Gly Pro Glu Lys Thr Asp Gln
 85 90 95
 Ala Leu Ala Arg Val Ile Ser Gly Asn Ser Arg Thr Leu Gly Asp Val
 100 105 110
 Tyr Ser Gln Val Ser Ala Leu Gln Ser Val Met Gln Ile Ile Gln Ser
 115 120 125
 Asn Pro Gln Ala Asn Asn Glu Glu Ile Arg Gln Lys Leu Thr Ser Ala
 130 135 140
 Val Thr Lys Pro Pro Gln Phe Gly Tyr Pro Tyr Val Gln Leu Ser Asn
 145 150 155 160
 Asp Ser Thr Gln Lys Phe Ile Ala Lys Leu Glu Ser Leu Phe Ala Glu
 165 170 175
 Gly Ser Arg Thr Ala Ala Glu Ile Lys Ala Leu Ser Phe Glu Thr Asn
 180 185 190
 Ser Leu Phe Ile Gln Gln Val Leu Val Asn Ile Gly Ser Leu Tyr Ser
 195 200 205
 Gly Tyr Leu Gln
 210

<210>776

<211>478

<212>PRT

<213>Chlamydia pneumoniae

<400>776

Val Phe Met Val Asn Pro Ile Gly Pro Gly Pro Ile Asp Glu Thr Glu
 1 5 10 15
 Arg Thr Pro Pro Ala Asp Leu Ser Ala Gln Gly Leu Glu Ala Ser Ala
 20 25 30
 Ala Asn Lys Ser Ala Glu Ala Gln Arg Ile Ala Gly Ala Glu Ala Lys
 35 40 45
 Pro Lys Glu Ser Lys Thr Asp Ser Val Glu Arg Trp Ser Ile Leu Arg
 50 55 60
 Ser Ala Val Asn Ala Leu Met Ser Leu Ala Asp Lys Leu Gly Ile Ala
 65 70 75 80
 Ser Ser Asn Ser Ser Ser Thr Ser Arg Ser Ala Asp Val Asp Ser
 85 90 95
 Thr Thr Ala Thr Ala Pro Thr Pro Pro Pro Thr Phe Asp Asp Tyr
 100 105 110
 Lys Thr Gln Ala Gln Thr Ala Tyr Asp Thr Ile Phe Thr Ser Thr Ser
 115 120 125
 Leu Ala Asp Ile Gln Ala Ala Leu Val Ser Leu Gln Asp Ala Val Thr
 130 135 140
 Asn Ile Lys Asp Thr Ala Ala Thr Asp Glu Glu Thr Ala Ile Ala Ala
 145 150 155 160
 Glu Trp Glu Thr Lys Asn Ala Asp Ala Val Lys Val Gly Ala Gln Ile
 165 170 175
 Thr Glu Leu Ala Lys Tyr Ala Ser Asp Asn Gln Ala Ile Leu Asp Ser
 180 185 190
 Leu Gly Lys Leu Thr Ser Phe Asp Leu Leu Gln Ala Ala Leu Leu Gln
 195 200 205
 Ser Val Ala Asn Asn Asn Lys Ala Ala Glu Leu Leu Lys Glu Met Gln
 210 215 220
 Asp Asn Pro Val Val Pro Gly Lys Thr Pro Ala Ile Ala Gln Ser Leu
 225 230 235 240
 Val Asp Gln Thr Asp Ala Thr Ala Thr Gln Ile Glu Lys Asp Gly Asn
 245 250 255
 Ala Ile Arg Asp Ala Tyr Phe Ala Gly Gln Asn Ala Ser Gly Ala Val
 260 265 270
 Glu Asn Ala Lys Ser Asn Asn Ser Ile Ser Asn Ile Asp Ser Ala Lys
 275 280 285
 Ala Ala Ile Ala Thr Ala Lys Thr Gln Ile Ala Glu Ala Gln Lys Lys
 290 295 300
 Phe Pro Asp Ser Pro Ile Leu Gln Glu Ala Glu Gln Met Val Ile Gln
 305 310 315 320
 Ala Glu Lys Asp Leu Lys Asn Ile Lys Pro Ala Asp Gly Ser Asp Val
 325 330 335
 Pro Asn Pro Gly Thr Thr Val Gly Gly Ser Lys Gln Gln Gly Ser Ser
 340 345 350
 Ile Gly Ser Ile Arg Val Ser Met Leu Leu Asp Asp Ala Glu Asn Glu
 355 360 365
 Thr Ala Ser Ile Leu Met Ser Gly Phe Arg Gln Met Ile His Met Phe
 370 375 380
 Asn Thr Glu Asn Pro Asp Ser Gln Ala Ala Gln Gln Glu Leu Ala Ala
 385 390 395 400
 Gln Ala Arg Ala Ala Lys Ala Ala Gly Asp Asp Ser Ala Ala Ala Ala
 405 410 415
 Leu Ala Asp Ala Gln Lys Ala Leu Glu Ala Ala Leu Gly Lys Ala Gly
 420 425 430
 Gln Gln Gln Gly Ile Leu Asn Ala Leu Gly Gln Ile Ala Ser Ala Ala
 435 440 445
 Val Cys Glu Arg Arg Ser Ser Ser Arg Cys Ser Lys Phe Tyr Arg Val
 450 455 460
 Ile Cys Lys Pro Ala Leu Gln Asp Leu Lys Ile Tyr Arg Phe
 465 470 475

<210>777

<211>438

<212>PRT

<213>Chlamydia pneumoniae

<400>777

Pro Ala Trp Ser Ser Val Ser Thr Leu Asn Ile Asp Thr Lys Asp Thr
 1 5 10 15
 Met Lys Lys Gln Val Tyr Gln Trp Leu Ala Ser Val Val Leu Leu Ala
 20 25 30
 Leu Thr Ile Ser Gly Tyr Ala Glu Leu Pro Leu Ser Glu Gln Lys Val
 35 40 45
 Lys Ser His Thr Tyr Thr Thr Leu Asp Glu Val Lys Asp Tyr Leu Ser
 50 55 60
 Lys Arg Gly Phe Val Glu Thr Arg Lys Gln Asp Gly Val Leu Arg Ile
 65 70 75 80
 Ala Gly Asp Val Arg Ala Arg Trp Leu Tyr Phe Arg Glu Asp Ile Lys
 85 90 95
 Asn Pro Ser Asp Lys Asp Lys Tyr Asn Pro Leu Pro Val Asn Arg Tyr
 100 105 110
 Arg Ser Glu Phe Tyr Leu Tyr Ile Asp Tyr Arg Ala Glu Arg Asn Trp
 115 120 125
 Leu Ser Ser Lys Met Asn Trp Thr Ala Ile Ala Gly Gly Glu Asn Thr
 130 135 140
 Ala Ala Gly Val Asp Ile Asn Arg Ala Phe Leu Gly Tyr Arg Phe Tyr
 145 150 155 160
 Lys Asn Pro Glu Thr Arg Thr Asp Phe Phe Met Glu Ile Gly Arg Ser
 165 170 175
 Gly Leu Gly Asp Leu Phe Glu Ser Glu Val Gln Phe Gln Ser Asn Phe
 180 185 190
 Asp Gly Leu His Ile Tyr Trp Thr Arg Glu Leu Ser Lys Asp Tyr Pro
 195 200 205
 Tyr Gln Val Ile Val His Gly Gly Pro Phe Val Val Asn Met Thr Lys
 210 215 220
 Lys His Tyr Ala Trp Val Val Glu Gly Ile Leu Asn Arg Leu Pro Lys
 225 230 235 240
 Gln Phe Phe Val Lys Cys Ser Val Val Asp Trp Asn Thr Phe Val Pro
 245 250 255
 Ser Glu Thr Ser Thr Thr Glu Lys Ala Ala Thr Asn Ala Met Lys Tyr
 260 265 270
 Lys Tyr Cys Val Trp Gln Trp Leu Val Gly Lys His Ser Gln Val Pro
 275 280 285
 Trp Ile Asn Gly Gln Lys Lys Pro Leu Tyr Leu Tyr Gly Ala Phe Leu
 290 295 300
 Met Asn Pro Leu Ala Lys Ala Thr Lys Thr Thr Leu Asn Gly Lys Glu
 305 310 315 320
 Asn Leu Ala Trp Phe Ile Gly Gly Thr Leu Gly Gly Leu Arg Lys Ala
 325 330 335
 Gly Asp Trp Ser Ala Thr Val Arg Tyr Glu Tyr Val Glu Ala Leu Ser
 340 345 350
 Val Pro Glu Ile Asp Val Ser Gly Ile Gly Arg Gly Asn Leu Leu Lys
 355 360 365
 Phe Trp Phe Ala Gln Ala Ile Ala Ala Asn Tyr Asp Pro Lys Glu Ala
 370 375 380
 Asn Gly Phe Thr Asn Tyr Lys Gly Phe Ser Ala Leu Tyr Met Tyr Gly
 385 390 395 400
 Ile Thr Asp Ser Leu Ser Phe Arg Ala Tyr Gly Ala Tyr Ser Lys Pro
 405 410 415
 Ala Asn Asp Lys Leu Gly Ser Asp Phe Thr Phe Arg Lys Phe Asp Leu
 420 425 430
 Gly Ile Ile Ser Ala Phe
 435

<210>778

<211>321

<212>PRT

<213>Chlamydia pneumoniae

<400>778

Ala Leu Leu Ala Pro Leu Ser Leu Gly Ile Leu Thr Ser Ser Ile Phe
 1 5 10 15

Gln Leu Asn Leu Leu Ser Asp Ile Cys Leu Ala Arg Tyr Val His Glu
 20 25 30
 Ile Gly Pro Leu Tyr Leu Met Tyr Ser Leu Lys Ile Tyr Gln Leu Pro
 35 40 45
 Ile His Leu Phe Gly Phe Gly Val Phe Thr Val Leu Leu Pro Ala Ile
 50 55 60
 Ser Arg Cys Val Gln Arg Glu Asp His Glu Arg Gly Leu Lys Leu Met
 65 70 75 80
 Lys Phe Val Leu Thr Leu Thr Met Ser Val Met Ile Ile Met Thr Ala
 85 90 95
 Gly Leu Leu Leu Leu Ala Leu Pro Gly Val Arg Val Leu Tyr Glu His
 100 105 110
 Gly Leu Phe Pro Gln Ser Ala Val Tyr Ala Ile Val Arg Val Leu Arg
 115 120 125
 Gly Tyr Gly Ala Ser Ile Ile Pro Met Ala Leu Ala Pro Leu Val Ser
 130 135 140
 Val Leu Phe Tyr Ala Gln Arg Gln Tyr Ala Val Pro Leu Phe Ile Gly
 145 150 155 160
 Ile Gly Thr Ala Leu Ala Asn Ile Val Leu Ser Leu Val Leu Gly Arg
 165 170 175
 Trp Val Leu Lys Asp Val Ser Gly Ile Ser Tyr Ala Thr Ser Ile Thr
 180 185 190
 Ala Trp Val Gln Leu Tyr Phe Leu Trp Tyr Tyr Ser Ser Lys Arg Leu
 195 200 205
 Pro Met Tyr Ser Lys Leu Leu Trp Glu Ser Ile Arg Arg Ser Ile Lys
 210 215 220
 Val Met Gly Thr Thr Met Leu Ala Cys Met Ile Thr Leu Gly Leu Asn
 225 230 235 240
 Ile Leu Thr Gln Thr Thr Tyr Val Ile Phe Leu Asn Pro Leu Thr Pro
 245 250 255
 Leu Ala Trp Pro Leu Ser Ser Ile Thr Ala Gln Ala Ile Ala Phe Leu
 260 265 270
 Ser Glu Ser Cys Ile Phe Leu Ala Phe Leu Phe Gly Phe Ala Lys Leu
 275 280 285
 Leu Arg Val Glu Asp Leu Ile Asn Leu Ala Ser Phe Glu Tyr Trp Arg
 290 295 300
 Gly Gln Arg Gly Leu Leu Gln Arg Gln His Val Met Gln Asp Thr Gln
 305 310 315 320
 Asn

<210>779

<211>225

<212>PRT

<213>Chlamydia pneumoniae

<400>779

Met Ser Arg Lys Asp Asn Glu Val Ser Leu Ala Arg Ser Ile Phe Asn
 1 5 10 15
 Ile Leu Ser Gly Thr Phe Cys Ser Arg Ile Thr Gly Ile Phe Arg Glu
 20 25 30
 Ile Ala Met Ala Thr Tyr Phe Gly Ala Asp Pro Ile Val Ala Ala Phe
 35 40 45
 Trp Leu Gly Phe Arg Thr Val Phe Phe Leu Arg Lys Ile Leu Gly Gly
 50 55 60
 Leu Ile Leu Glu Gln Ala Phe Ile Pro His Phe Glu Phe Leu Arg Ala
 65 70 75 80
 Gln Ser Leu Asp Arg Ala Ala Phe Phe Phe Arg Arg Phe Ser Arg Leu
 85 90 95
 Ile Lys Gly Ser Thr Ile Ile Phe Thr Leu Leu Ile Glu Ala Val Leu
 100 105 110
 Trp Val Val Leu Gln Tyr Val Glu Glu Gly Thr Tyr Asp Met Ile Leu
 115 120 125
 Leu Thr Met Ile Leu Leu Pro Cys Gly Ile Phe Leu Met Met Tyr Asn
 130 135 140
 Val Asn Gly Ala Leu Leu His Cys Glu Asn Lys Phe Phe Gly Val Gly

145 150 155 160
 Leu Ala Pro Val Val Val Asn Ile Ile Trp Ile Phe Phe Val Ile Ala
 165 170 175
 Ala Arg His Ser Asp Pro Arg Glu Arg Ile Ile Gly Leu Ser Val Ala
 180 185 190
 Leu Val Ile Gly Phe Phe Phe Glu Trp Leu Ile Thr Val Pro Gly Val
 195 200 205
 Trp Lys Phe Leu Leu Glu Ala Lys Ser Pro Pro Gln Glu His Asp Ser
 210 215 220
 Val
 225
 <210>780
 <211>293
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>780
 Met Lys Val Leu Pro Pro Pro Ser Ile Pro Leu Leu Gly Ala His Thr
 1 5 10 15
 Ser Thr Ala Gly Gly Leu Lys Asn Ala Ile Tyr Glu Gly Arg Asp Ile
 20 25 30
 Gly Ala Ser Thr Val Gln Ile Phe Thr Ala Asn Gln Arg Gln Trp Gln
 35 40 45
 Arg Arg Ala Leu Lys Glu Glu Val Ile Glu Asp Phe Lys Ala Ala Leu
 50 55 60
 Lys Glu Thr Asp Leu Ser Tyr Ile Met Ser His Ala Gly Tyr Leu Ile
 65 70 75 80
 Asn Pro Gly Ala Pro Asp Pro Val Ile Leu Glu Lys Ser Arg Ile Gly
 85 90 95
 Ile Tyr Gln Glu Ile Leu Asp Cys Ile Thr Leu Gly Ile Ser Phe Val
 100 105 110
 Asn Phe His Pro Gly Ala Ala Leu Lys Ser Ser Lys Glu Asp Cys Met
 115 120 125
 Asn Lys Ile Val Ser Ser Phe Ser Gln Ser Ala Pro Leu Phe Asp Ser
 130 135 140
 Ser Pro Pro Leu Val Val Leu Leu Glu Thr Thr Ala Gly Gln Gly Thr
 145 150 155 160
 Leu Ile Gly Ser Asn Phe Glu Glu Leu Gly Tyr Leu Val Gln Asn Leu
 165 170 175
 Lys Asn Gln Ile Pro Ile Gly Val Cys Val Asp Thr Cys His Ile Phe
 180 185 190
 Ala Ala Gly Tyr Asp Ile Thr Ser Pro Gln Gly Trp Glu Asp Val Leu
 195 200 205
 Asn Glu Phe Asp Glu Tyr Val Gly Leu Ser Tyr Leu Arg Ala Phe His
 210 215 220
 Leu Asn Asp Ser Met Phe Pro Leu Gly Ala Asn Lys Asp Arg His Ala
 225 230 235 240
 Pro Leu Gly Glu Gly Tyr Ile Gly Lys Glu Ser Phe Lys Phe Leu Met
 245 250 255
 Thr Asp Glu Arg Thr Arg Lys Ile Pro Lys Tyr Leu Glu Thr Pro Gly
 260 265 270
 Gly Pro Glu Asn Trp Gln Lys Glu Ile Gly Glu Leu Leu Lys Phe Ser
 275 280 285
 Lys Asn Arg Asp Ser
 290
 <210>781
 <211>152
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>781
 Met Ala Arg Tyr Cys Gly Pro Lys Asn Arg Val Ala Arg Arg Phe Gly
 1 5 10 15
 Ala Asn Ile Phe Gly Arg Ser Arg Asn Pro Leu Leu Lys Lys Pro His
 20 25 30
 Pro Pro Gly Gln His Gly Met Gln Arg Lys Lys Lys Ser Asp Tyr Gly

35 40 45
 Leu Gln Leu Glu Glu Lys Gln Lys Leu Lys Ala Cys Tyr Gly Met Ile
 50 55 60
 Met Glu Lys Gln Leu Val Lys Ala Phe Lys Glu Val Ile His Lys Gln
 65 70 75 80
 Gly Asn Val Ala Gln Met Phe Leu Glu Arg Phe Glu Cys Arg Leu Asp
 85 90 95
 Asn Met Val Tyr Arg Met Gly Phe Ala Lys Thr Ile Phe Ala Ala Gln
 100 105 110
 Gln Leu Val Ala His Gly His Ile Leu Val Asn Gly Arg Arg Val Asp
 115 120 125
 Arg Arg Ser Phe Phe Leu Arg Pro Gly Met Gln Ile Ser Leu Lys Arg
 130 135 140
 Lys Asn Leu Asn Asp Phe Ser Leu
 145 150

<210>782

<211>324

<212>PRT

<213>Chlamydia pneumoniae

<400>782

Met Glu Lys Lys Tyr Tyr Ala Leu Ala Tyr Tyr Tyr Ile Thr Arg Val
 1 5 10 15
 Asp Asn Pro His Glu Glu Ile Ala Leu His Lys Lys Phe Leu Glu Asp
 20 25 30
 Leu Asp Val Ser Cys Arg Ile Tyr Ile Ser Glu Gln Gly Ile Asn Gly
 35 40 45
 Gln Phe Ser Gly Tyr Glu Pro His Ala Glu Leu Tyr Met Gln Trp Leu
 50 55 60
 Lys Glu Arg Pro Asn Phe Ser Lys Ile Lys Phe Lys Ile His His Ile
 65 70 75 80
 Lys Glu Asn Ile Phe Pro Arg Ile Thr Val Lys Tyr Arg Lys Glu Leu
 85 90 95
 Ala Ala Leu Gly Cys Glu Val Asp Leu Ser Lys Gln Ala Lys His Ile
 100 105 110
 Ser Pro Gln Glu Trp His Glu Lys Leu Gln Glu Asn Arg Cys Leu Ile
 115 120 125
 Leu Asp Val Arg Asn Asn Tyr Glu Trp Lys Ile Gly His Phe Asp Asn
 130 135 140
 Ala Thr Leu Pro Asp Ile Gln Thr Phe Arg Glu Phe Pro Glu Tyr Ala
 145 150 155 160
 Glu Lys Leu Ala Gln Glu Cys Asp Pro Glu Thr Thr Pro Val Met Met
 165 170 175
 Tyr Cys Thr Gly Gly Ile Arg Cys Glu Leu Tyr Ser Pro Val Leu Leu
 180 185 190
 Glu Lys Gly Phe Lys Glu Val Tyr Gln Leu Asp Gly Gly Val Ile Ala
 195 200 205
 Tyr Gly Gln Gln Val Gly Thr Gly Lys Trp Leu Gly Lys Leu Phe Val
 210 215 220
 Phe Asp Asp Arg Leu Ala Ile Pro Ile Asp Glu Ser Asp Pro Asp Val
 225 230 235 240
 Ala Pro Ile Ala Glu Cys Cys His Cys Gln Thr Pro Ser Asp Ala Tyr
 245 250 255
 Tyr Asn Cys Ala Asn Thr Asp Cys Asn Ala Leu Phe Leu Cys Cys Asp
 260 265 270
 Glu Cys Ile His Gln His Gln Gly Cys Cys Gly Glu Glu Cys Ser Gln
 275 280 285
 Ser Pro Arg Val Arg Lys Phe Asp Ser Ser Arg Gly Asn Lys Pro Phe
 290 295 300
 Arg Arg Ala His Leu Cys Glu Ile Ser Glu Asn Ser Glu Ser Ala Ser
 305 310 315 320
 Cys Cys Leu Ile

<210>783

<211>222

<212>PRT

<213>Chlamydia pneumoniae

<400>783

Met Leu Met Met Leu Met Met Ile Ile Gly Ile Thr Gly Gly Ser Gly
 1 5 10 15
 Ala Gly Lys Thr Thr Leu Thr Gln Asn Ile Lys Glu Ile Phe Gly Glu
 20 25 30
 Asp Val Ser Val Ile Cys Gln Asp Asn Tyr Tyr Lys Asp Arg Ser His
 35 40 45
 Tyr Thr Pro Glu Glu Arg Ala Asn Leu Ile Trp Asp His Pro Asp Ala
 50 55 60
 Phe Asp Asn Asp Leu Leu Ile Ser Asp Ile Lys Arg Leu Lys Asn Asn
 65 70 75 80
 Glu Ile Val Gln Ala Pro Val Phe Asp Phe Val Leu Gly Asn Arg Ser
 85 90 95
 Lys Thr Glu Ile Glu Thr Ile Tyr Pro Ser Lys Val Ile Leu Val Glu
 100 105 110
 Gly Ile Leu Val Phe Glu Asn Gln Glu Leu Arg Asp Leu Met Asp Ile
 115 120 125
 Arg Ile Phe Val Asp Thr Asp Ala Asp Glu Arg Ile Leu Arg Arg Met
 130 135 140
 Val Arg Asp Val Gln Glu Gln Gly Asp Ser Val Asp Cys Ile Met Ser
 145 150 155 160
 Arg Tyr Leu Ser Met Val Lys Pro Met His Glu Lys Phe Ile Glu Pro
 165 170 175
 Thr Arg Lys Tyr Ala Asp Ile Ile Val His Gly Asn Tyr Arg Gln Asn
 180 185 190
 Val Val Thr Asn Ile Leu Ser Gln Lys Ile Lys Asn His Leu Glu Asn
 195 200 205
 Ala Leu Glu Ser Asp Glu Thr Tyr Tyr Met Val Asn Ser Lys
 210 215 220

<210>784

<211>503

<212>PRT

<213>Chlamydia pneumoniae

<400>784

Leu Arg Leu Ala Gly Ser Leu Ala Asp Arg Phe Gln Lys Arg Asn Ile
 1 5 10 15
 Ile Leu Ala Thr Arg Phe Ile Glu Ile Leu Cys Thr Ile Leu Gly Thr
 20 25 30
 Tyr Phe Phe Phe Ile Gln Ser Val Val Gly Gly Tyr Val Val Leu Ile
 35 40 45
 Leu Met Ala Cys His Thr Thr Ile Phe Gly Pro Ala Lys Leu Gly Ile
 50 55 60
 Leu Pro Glu Met Leu Pro Ser Glu Gln Leu Ser Gln Ala Asn Gly Ile
 65 70 75 80
 Met Thr Ala Ala Thr Tyr Thr Gly Ser Ile Leu Gly Ser Cys Leu Ala
 85 90 95
 Pro Leu Leu Val Asp Val Thr His Arg Leu Gly Val Asn Ser Tyr Val
 100 105 110
 Trp Pro Thr Leu Met Cys Val Ile Val Ser Ile Ile Ser Thr Leu Ile
 115 120 125
 Ser Phe Cys Ile Arg Pro Ser Asn Val Lys Asn Val Lys Gln Lys Ile
 130 135 140
 Thr Leu Val Ser Phe Lys Asp Leu Trp Lys Val Leu Lys Asp Thr Arg
 145 150 155 160
 Met Ile His Tyr Leu Thr Val Ser Ile Phe Leu Gly Ser Phe Phe Leu
 165 170 175
 Leu Ile Gly Ala Tyr Thr Gln Leu Glu Ile Ile Pro Phe Val Glu Phe
 180 185 190
 Ile Leu Lys Tyr Pro Lys His Tyr Gly Ala Tyr Leu Phe Pro Ile Val
 195 200 205
 Ala Leu Gly Val Gly Thr Gly Ser Tyr Ile Thr Gly Lys Ile Ser Gly
 210 215 220

Lys Asp Ile Lys Ile Gly Tyr Val Pro Leu Ala Ala Ile Gly Leu Ala
 225 230 235 240
 Leu Val Phe Met Gly Leu Tyr Ala Phe Ala Cys Ser Ile Leu Phe Val
 245 250 255
 Leu Phe Phe Leu Leu Ala Leu Gly Phe Leu Gly Gly Val Tyr Gln Val
 260 265 270
 Pro Leu His Ala Tyr Val Gln Tyr Ala Ser Pro Glu His Lys Arg Gly
 275 280 285
 Gln Ile Leu Ala Ala Asn Asn Phe Leu Asp Phe Phe Gly Val Leu Val
 290 295 300
 Ala Ala Gly Val Ile Arg Val Leu Gly Ser Asn Leu Gly Leu Ser Pro
 305 310 315 320
 Glu Thr Ser Phe Phe Tyr Ile Gly Trp Phe Val Leu Ala Val Ser Ile
 325 330 335
 Trp Thr Leu Trp Ile Trp Arg Glu His Val Tyr Arg Leu Leu Leu Gly
 340 345 350
 Ile Ile Leu Arg Arg Gln Leu Gly Tyr Tyr Leu Lys Ile His Gln Ser
 355 360 365
 Ser Ser Pro Lys Cys Tyr Phe Val Ala Val Gln Ser Tyr Arg Glu Ile
 370 375 380
 Arg Arg Val Leu Ala Ala Leu Thr Lys Thr Val Arg Ser Arg Val Ile
 385 390 395 400
 Ile Leu Asp Gln Lys Leu Val Pro Gly Trp Arg Ala Trp Leu Leu Ser
 405 410 415
 Trp Cys Val Pro Thr Val Val Ser Ser Val Arg Asp Asn Asp Ser Glu
 420 425 430
 Ala Gln Asp Ala Trp Ala Val Leu Gln Ala Asn His Leu Lys Thr Ser
 435 440 445
 Leu Lys Lys Phe Pro Asp Val Ser Val Val Cys Leu Gly Leu Pro Lys
 450 455 460
 Asn Val Glu Arg Phe Thr Ser Ile Leu Gln Glu Gln Gly Ile Asp Leu
 465 470 475 480
 His Pro Ile Gln Leu Val Gln Lys Glu Gly Lys Lys Arg Val Ile Tyr
 485 490 495
 Thr Leu Val Phe Pro His Ala
 500

<210>785

<211>644

<212>PRT

<213>Chlamydia pneumoniae

<400>785

Ile His Gly Leu Lys Ile Ser Glu Ile Lys Ile Leu Leu Leu Ser Ser
 1 5 10 15
 Ile Leu Gln Thr Gln Gly Asp Leu His Tyr Ile Leu Gln Leu Leu Thr
 20 25 30
 His Pro Gln Leu Gln Gln Pro Ile Asp Gln Asn Lys Val Pro Tyr Leu
 35 40 45
 Ile Lys Lys Leu Ser Ser Glu Trp Gly Lys Ile Ser Ser Lys Glu Arg
 50 55 60
 Ala Ser Gly Gln Gln Met Lys Ala Leu Gly Asp Leu Ile Leu Glu Glu
 65 70 75 80
 Tyr Pro Phe His Gln Glu Gly Gly Arg Val Ser Gln Val Glu Val Trp
 85 90 95
 Glu Thr Thr Val Pro Leu Ile Tyr Phe Ile Gln Glu Arg Ile Asn Leu
 100 105 110
 Tyr Leu Ser Ser Ser Gln His Ser Tyr Glu Asp Leu Phe Gln Asn Val
 115 120 125
 Phe Ser Cys Leu Glu Lys Ile Phe Val Leu Ser Pro Glu Glu Thr Ser
 130 135 140
 Phe Ile Thr Thr Leu Arg Asn Ser Leu Phe Pro Thr Phe Ala Thr Ser
 145 150 155 160
 Ser Cys Ser Leu Leu Phe Phe Thr Asp Phe Cys Leu Asp Phe Leu Leu
 165 170 175
 His Phe His Lys Pro Ser Pro Leu Tyr Asp Lys Pro Gly Pro Tyr Ile

180 185 190
 Gly Ser Leu Ser Ser Leu Ser Leu Ile Pro Lys Gly Tyr Val Phe Ile
 195 200 205
 Leu Gly Ala Asn Lys Thr Thr Ser Ser Asp Ile Phe Asp Leu Leu Asn
 210 215 220
 Arg Thr Thr Thr His Glu Leu Ala Phe Ser Ser Thr Glu Asp Glu
 225 230 235 240
 Glu Asn Phe His Phe Leu Gln Ile Leu Val Ser Thr Lys His Glu Leu
 245 250 255
 His Ile Ser Tyr Ile Ser Ser Ala Ala Gln Phe Asn Leu Pro Ser Pro
 260 265 270
 Phe Leu Asn His Ile Lys Asp Thr Leu Asp Leu Pro Val Glu Thr Leu
 275 280 285
 Pro Thr Gln Pro Tyr Leu Ser Ala Phe Phe Lys Asn Lys Ala Cys Leu
 290 295 300
 His Thr Ser Gln Glu Tyr Asn Tyr Ser Leu Ala His Ala Phe Tyr Ser
 305 310 315 320
 Lys Lys Ala Leu Leu Pro Ser Leu Phe Ile Pro Thr Val Lys Gln Val
 325 330 335
 Asn Leu Pro Gln His Leu Ser Leu Asn Glu Ile Ile Lys Gly Ile Phe
 340 345 350
 Ser Pro Leu Asp Leu Phe Leu Lys Thr Asn Tyr Asn Leu Arg Ile Ser
 355 360 365
 Tyr Pro Glu His Leu Lys Lys Gln Gln Lys Leu Phe Pro Thr Lys His
 370 375 380
 Gln Ile Glu Asp Phe Trp Asn Glu Cys Phe Val Asp Lys Glu His Asp
 385 390 395 400
 Leu Ile Pro Ser Ile Ser Pro His Ala Glu Glu Leu Phe Thr Tyr Tyr
 405 410 415
 Arg Glu Lys Thr Ile Leu Leu Arg Asn Gly Leu Asp Lys Asp Pro Lys
 420 425 430
 His Ser Pro Tyr Thr Val Thr Phe Ser Ser Ser Ile Phe Glu Glu Arg
 435 440 445
 Pro Tyr His Glu Ser Tyr Leu Phe Pro Pro Leu Ser Leu Ser Phe Gln
 450 455 460
 Gly Asn Pro Val Gln Ile His Gly Thr Ile His Gly Val Cys Asn Glu
 465 470 475 480
 Gly Leu Tyr Leu Cys Ser Ile Asp Pro Arg Asp Ser Leu Lys Lys Thr
 485 490 495
 Thr Arg Thr Leu Gly Ser Leu Pro Glu Thr Ser Ser Glu Gln Lys Gln
 500 505 510
 Leu Leu Glu Arg Tyr Val Ala Leu Ala Val Leu Gln Met Ser Gln His
 515 520 525
 Leu Ser Ser Asp Ser Ala Leu Ile Lys Leu Thr Ser Phe Asn Thr Lys
 530 535 540
 Glu Asn His His Pro Pro Phe Ser Asp Pro Glu Gly Tyr Leu Arg Lys
 545 550 555 560
 Val Leu Glu Val Tyr His Leu Met Ser Ser Gln Pro Ile Pro Leu Leu
 565 570 575
 Ser Pro Leu Cys Trp Lys Thr Leu Asp Asp Glu Glu Lys Phe His Gln
 580 585 590
 Ala Val Leu Ser Ala Ile Ser Glu Glu Ala Lys Asn Pro Ser Leu Pro
 595 600 605
 Ile Phe Trp Gln Phe His Asn Arg Asn Ile Glu Glu Ile Leu Asn His
 610 615 620
 Val Gly Ala Ser Glu Arg Leu Lys Ile Leu Ser Leu Phe Arg Gly Pro
 625 630 635 640
 Cys Glu Ala Val

<210>786

<211>439

<212>PRT

<213>Chlamydia pneumoniae

<400>786

Pro Val Lys Pro Phe Asn Ile Phe Asp Ser Asn Ser Ser Ile Gln Gly
 1 5 10 15
 Lys Phe Phe Leu Glu Ala Ser Ala Gly Thr Gly Lys Thr Phe Thr Ile
 20 25 30
 Glu Gln Ile Val Leu Arg Ala Leu Ile Glu Gly Ser Leu Thr His Val
 35 40 45
 Glu His Ala Leu Ala Ile Thr Phe Thr Asn Ala Ser Thr Asn Glu Leu
 50 55 60
 Lys Val Arg Ile Lys Asp Asn Leu Ala Gln Thr Leu Arg Glu Leu Lys
 65 70 75 80
 Ala Val Leu Asn Ser Gln Pro Ala Ser Leu Pro Thr Tyr Leu Asp Ile
 85 90 95
 Asn Cys Asn Val Lys Gln Ile Tyr Met Gln Val Arg Asn Ala Leu Ala
 100 105 110
 Thr Leu Asp Gln Met Ser Leu Phe Thr Ile His Gly Phe Cys Asn Phe
 115 120 125
 Val Leu Glu Gln Tyr Phe Pro Lys Thr Arg Leu Ile His Lys Asn Pro
 130 135 140
 Ala Leu Thr His Ser Gln Leu Val Leu His His Ile Thr Asn Tyr Leu
 145 150 155 160
 Lys Gln Asp Leu Trp Lys Asn Val Leu Phe Gln Glu Gln Phe His Leu
 165 170 175
 Leu Ala Val Arg Tyr Asn Val Thr Ser Lys His Thr Ser Ser Leu Val
 180 185 190
 Asp Lys Leu Leu Ala Ser Tyr Thr Gln Pro Ile Ser Ser Tyr Phe Ser
 195 200 205
 Ser Arg Val Glu Arg Leu Glu Gln Ile Ser Leu Trp His Gln Gln Ile
 210 215 220
 Tyr Asn Ser Leu Leu Glu Ile Pro Lys Gln Val Phe Leu Asp Gln Leu
 225 230 235 240
 Thr Ala His Ile Ser Gly Phe Lys Lys Gln Pro Phe Ser Ile Leu Asp
 245 250 255
 Asp Leu His His Phe Val Asp Leu Leu Tyr Thr Ser Glu Thr His Ser
 260 265 270
 Ser Leu Phe Ser Phe Phe Lys Ile Ala Glu Thr Phe Asn Phe Lys His
 275 280 285
 Arg Leu Ala Arg Tyr Lys Pro Cys Ala Ala Phe Thr Val Leu Glu Asn
 290 295 300
 Met Ser Trp Val Glu Arg Thr Leu Glu Phe Cys Asn Leu Asp Arg Ile
 305 310 315 320
 Phe Asn Thr Leu Leu Val Asp Leu Gln Glu Tyr Leu Lys Gln Asn Tyr
 325 330 335
 Thr Pro Trp Leu Ser Pro Asp Glu Ser Val Phe Ala Leu Glu Lys Leu
 340 345 350
 Leu Ser Ser Ser Glu Ala Gln Pro Val Val Gln Ala Leu Arg Glu Gln
 355 360 365
 Tyr Gln Leu Val Leu Ile Asp Glu Phe Gln Asp Thr Asp Lys Gln Gln
 370 375 380
 Trp Ser Ile Phe Ser Asn Leu Phe Ile Ser Pro Lys Phe Thr Gly Ser
 385 390 395 400
 Leu Phe Leu Ile Gly Asp Pro Lys Gln Ser Ile Tyr Glu Trp Arg Ser
 405 410 415
 Ala Asp Leu Pro Thr Tyr Leu Thr Ala Lys Ser Ser Phe Ser Glu Asp
 420 425 430
 Lys Gln Leu Gln Leu Val Asn
 435

<210>787

<211>489

<212>PRT

<213>Chlamydia pneumoniae

<400>787

Leu Met Asn Phe Lys Ile Gln Thr Ser Asn Asn Gly Ala Ser Phe Arg
 1 5 10 15
 Ile Ser Leu Phe Leu Arg Asn Leu Gln Asp Arg Tyr Phe Leu Ser Glu

20 25 30
 Thr Pro Ser Asn Leu Phe Met Asn Gly Glu Val Arg Ile Phe Leu Pro
 35 40 45
 Ile Leu Gln Pro Asn Leu Arg Phe Gln Lys Thr Ser Asn Tyr Ser Leu
 50 55 60
 Ser Ile Asn Tyr Arg Ser Thr Pro Lys Leu Met Glu Ala Ile Asn Gln
 65 70 75 80
 Ile Phe Gly Lys Ile Ser Pro Phe Leu Glu Ile Pro Gly Tyr Leu Pro
 85 90 95
 Ile Glu Tyr His Ala Leu Asn Pro Gln Ser Ser Glu Thr Phe Glu Asn
 100 105 110
 Pro Pro His Ala Pro Ile His Phe Phe Phe Tyr Glu Thr Ile Lys Asp
 115 120 125
 Gln Ala Leu Trp Ile Phe Ser Glu Ala Leu Arg Leu Gln Lys Glu Gln
 130 135 140
 Lys Ile Pro Leu Gly Asn Met Val Val Leu Val Ser Asp Ser Asn Gln
 145 150 155 160
 Ala Phe Glu Leu Ile Ser Tyr Ala Thr Ile Pro Val Ser Phe Ser Lys
 165 170 175
 Asn Lys Ser Ile Phe His Leu Thr Glu Thr His Ile Leu Thr Thr Ala
 180 185 190
 Leu Leu Glu Ala Ile Leu His Pro Glu Asn Tyr Glu Lys Ile Ser Lys
 195 200 205
 Ile Leu Phe Ser Ser Leu Phe Gly Leu Ser Leu Asp Glu Val Thr Thr
 210 215 220
 Lys Lys Glu Asp Phe Thr Ile Tyr Phe Gln Ser Leu His Ser Tyr Ile
 225 230 235 240
 Ser His His Gly Leu Leu Ala Thr Phe Tyr Arg Val Met Thr Thr Gln
 245 250 255
 Gly Asn Val Leu Phe Ser Ser Pro Arg Gly Asp Leu Ile Phe Gln Glu
 260 265 270
 Met Glu Lys Leu Cys Gly Tyr Leu Asp Thr Ile Ser Ser Tyr Pro Tyr
 275 280 285
 His Gln Leu Leu His Leu Lys Asn Phe Ser Glu Thr Gly Arg Trp Glu
 290 295 300
 Glu Glu Leu Ala Ile Ser Ser Tyr Ser Glu Asp Leu Glu Thr Leu Lys
 305 310 315 320
 Ile Thr Thr Ile His Ser Ser Lys Gly Leu Glu Tyr Asp Ile Val Phe
 325 330 335
 Cys Pro Gly Ile Glu Lys Ser Lys Lys Asn Lys Ser Ser Ser Glu Leu
 340 345 350
 Leu Arg Glu Met Tyr Val Ala Cys Thr Arg Ala Lys Lys Gln Leu Tyr
 355 360 365
 Leu Pro Ile Ser Thr Gln Pro Pro Ser Leu Gln Arg Ser Ser Ala Leu
 370 375 380
 Thr Asn Tyr Val Lys Leu Glu Gly Thr Gln Ser Ser Ala Tyr Asp Leu
 385 390 395 400
 Ala Ile His Leu His Gln Glu His Pro Asp Leu Phe Ser Tyr Ser Leu
 405 410 415
 Pro Lys Asp His Gly His Ala Thr Thr Val Leu Asn Leu Pro Leu Leu
 420 425 430
 Glu Thr Phe Ala Leu Lys Val Thr Pro Pro Lys Thr Ile Phe Ser Phe
 435 440 445
 Ser Ser Thr Lys Phe Leu Leu Asp Thr His Lys Asp Ser Gln Ser Ile
 450 455 460
 Pro Tyr Ser Asn Ser Arg Phe Gln Asn Asn Ser Phe Leu Trp Glu Lys
 465 470 475 480
 Lys Gln Glu Phe Leu Tyr Thr Lys Phe
 485

<210>788

<211>260

<212>PRT

<213>Chlamydia pneumoniae

<400>788

Gly Pro Trp Thr Cys Tyr His Ser Val Glu Ser Ala Thr Phe Arg Asp
 1 5 10 15
 Val Arg Ser Lys Ser Asp Thr Pro Glu Asn Tyr Phe Phe Leu Leu Ile
 20 25 30
 Tyr Lys Ile Pro Ile Gly His Ser Gln Arg Leu Ala Ile Asp Pro Ile
 35 40 45
 Phe Gln Leu Pro Ile Ser Lys Gln Gln Leu Pro Leu Gly Glu Lys Thr
 50 55 60
 Gly Ile Leu Ile His Lys Ile Leu Glu Ser Ile Gln Phe Ser Leu Leu
 65 70 75 80
 Gln Asp Thr Glu Tyr Leu Met Ser Thr Ile Met Arg Phe Ile Lys His
 85 90 95
 Thr His Leu Glu Gly Phe Glu Glu Thr Ile Leu Lys Leu Leu Ser Lys
 100 105 110
 Thr Phe Phe Ser Pro Leu Thr Phe Ser Ser Gln Thr Phe Ser Leu Ser
 115 120 125
 Gln Val Leu Pro Asn Lys Ile Phe Arg Glu Thr Ser Phe Leu Phe Leu
 130 135 140
 Glu Asn Gln Glu Leu Trp Gln Gly Val Ile Asp Leu Phe Phe Glu His
 145 150 155 160
 Glu Gly Lys Tyr Tyr Ile Ile Asp Trp Lys Thr Ser Phe Leu Gly Glu
 165 170 175
 Thr Asn Ser Asp Tyr Ser Lys Ser Asn Leu Ser Ile Tyr Ile Lys Gln
 180 185 190
 Glu Lys Leu Asp Tyr Gln Gly Arg Ile Tyr Val Lys Ala Val Arg Lys
 195 200 205
 Phe Leu Asn Gln Phe Glu Ile Asp Asp Asp Val Glu Leu Gly Val Ile
 210 215 220
 Phe Ile Arg Gly Ile Asp Thr Gln Gly Asn Gly Phe Phe Ala Leu Asn
 225 230 235 240
 Ser Ser Glu Asp Ile Pro Asn Phe Asn Pro Lys Ala Ile Gln Lys Cys
 245 250 255
 Gln Ala Tyr His
 260

<210>789

<211>344

<212>PRT

<213>Chlamydia pneumoniae

<400>789

Cys Lys Val Leu Phe Lys Leu Met Ser Tyr Ser Leu Arg Asn Lys Lys
 1 5 10 15
 Thr Lys Ile Cys Val Tyr Ile Ile Ile Ala Leu Gly Ile Leu Ser Phe
 20 25 30
 Arg Ser Ile Pro Gln Glu Val Tyr Asp Lys Ile Arg Ser Ser Phe Val
 35 40 45
 Ser Leu His Val Lys Phe Phe Pro Lys Ile Lys Gln Ala Pro Ser Ser
 50 55 60
 His Leu Ala Asn Leu Glu Leu Glu Asn Leu Val Leu Lys Glu Arg Val
 65 70 75 80
 Ala Ser Leu Glu Glu Lys Leu Lys Leu Tyr Glu Val Ser Asn His Thr
 85 90 95
 Pro Pro Leu Phe Pro Glu Ile Leu Thr Pro Tyr Phe His Lys Leu Val
 100 105 110
 Glu Gly Lys Val Val Tyr Arg Asp Tyr Thr His Trp Ser Ser Cys
 115 120 125
 Trp Val Asn Val Gly Lys Thr His Gly Ile Lys Lys Asn Ser Pro Val
 130 135 140
 Leu Ser Gly Asn Val Leu Val Gly Leu Val Asp Tyr Val Gly Glu His
 145 150 155 160
 Gln Ser Arg Ile Arg Leu Ile Thr Asp Val Gly Met Lys Pro Ser Val
 165 170 175
 Val Ala Met Arg Gly Asp Ile Gln Ser Trp Trp Ile Lys His Ser Leu
 180 185 190
 Arg Glu Leu Ile Arg Gln Val Glu Gln Ile Ser His Ala Tyr Ile Leu

195 200 205
 Glu Lys Asp Lys Tyr Glu Lys Ile Ser Gln Leu Gln Glu Leu Asp Ser
 210 215 220
 Leu Ile Gln Gly Glu Gly Glu Asn Gln Ala Leu Leu Arg Gly Ile Leu
 225 230 235 240
 Ser Gly Val Gly Gly Ala Leu Trp Lys Glu Gly Ser Leu Cys Leu Glu
 245 250 255
 Gly Glu Gly Phe Tyr Phe Ser Glu Gly Lys Thr Leu Leu Pro Gly Asp
 260 265 270
 Ile Leu Val Thr Thr Gly Leu Asp Gly Val Phe Pro Pro Gly Leu Leu
 275 280 285
 Val Ala Arg Val Thr Lys Val Lys Ala Pro Arg Asp Gly Ala Cys Thr
 290 295 300
 Phe Lys Ile Glu Ala Gln Ser Leu Glu Glu Lys Leu Met Glu Leu Asp
 305 310 315 320
 Gln Leu Phe Ile Leu Pro Pro Leu Glu Phe Asn Pro Asn Asp Arg Pro
 325 330 335
 Asp Ile Phe Gly Leu Leu Trp Asp
 340

<210>790

<211>395

<212>PRT

<213>Chlamydia pneumoniae

<400>790

Met Ser Phe Phe Asn His Ile Pro Thr Phe Ser Pro Asp Ala Ile Leu
 1 5 10 15
 Gly Leu Gln Asn Val Phe Phe Ala Asp Lys Arg Pro Glu Lys Val Asn
 20 25 30
 Leu Val Ile Gly Val Tyr Glu His Pro Gln Lys Arg Tyr Gly Gly Leu
 35 40 45
 Ser Cys Ile Arg Lys Ala Gln Thr Val Ile Leu Glu Glu Gln Asn
 50 55 60
 Lys Ser Tyr Leu Pro Ile Ser Gly Leu Gln Ile Phe Leu Asp Glu Met
 65 70 75 80
 Arg Glu Leu Val Phe Gly Ala Val Asp Pro Ser Ala Ile Val Gly Phe
 85 90 95
 Gln Ser Leu Gly Gly Thr Gly Ala Leu His Leu Gly Ala Arg Leu Leu
 100 105 110
 Ser Val Ala Lys Gly Ser Gly Lys Val Tyr Val Pro Glu Gln Thr Trp
 115 120 125
 Ser Asn His Ile Arg Ile Phe Ser Gln Glu Gly Leu Glu Val Ile Arg
 130 135 140
 Tyr Pro Tyr Tyr Ser Lys Glu Gln Lys Gln Leu Leu Phe Glu Pro Leu
 145 150 155 160
 Ile Ala Phe Leu Lys Glu Val Glu Lys Asn Ser Val Ile Leu Leu His
 165 170 175
 Gly Cys Cys His Asn Pro Thr Gly Val Asp Phe Thr Glu Asp Met Trp
 180 185 190
 Lys Glu Leu Ala Ile Leu Met Lys Glu Arg Glu Leu Ile Pro Phe Phe
 195 200 205
 Asp Thr Ala Tyr Gln Gly Phe Ala His Gly Ile Glu Leu Asp Arg Lys
 210 215 220
 Pro Ile Glu Ile Phe Ile Ser Glu Gly Asn Thr Val Leu Val Ala Ala
 225 230 235 240
 Ser Ser Ser Lys Asn Phe Ala Leu Tyr Gly Glu Arg Val Gly Tyr Phe
 245 250 255
 Ala Val His Ser Thr Phe Thr Asp Glu Leu Val Lys Ile His Ser Phe
 260 265 270
 Leu Glu Glu Lys Ile Arg Gly Glu Tyr Ser Ser Pro Gln Arg Trp Gly
 275 280 285
 Val Glu Ile Val Ser Thr Ile Leu Ser Asn Pro Tyr Leu Lys Glu Glu
 290 295 300
 Trp Gln Ser Glu Leu Asn Phe Ile Arg Glu Ser Leu Gly Lys Met Arg
 305 310 315 320

Thr Arg Phe Val Gln Ala Leu Arg Lys Val Ala Gly His Thr Phe Asp
 325 330 335
 Phe Leu Leu Ser Gln His Gly Phe Phe Ala Tyr Pro Gly Phe Ser Asp
 340 345 350
 Lys Gln Val Leu Phe Leu Arg Glu Gln His Ala Val Tyr Thr Thr Ala
 355 360 365
 Gly Gly Arg Met Asn Leu Asn Gly Ile Thr Glu Lys Asn Ile Asp His
 370 375 380
 Val Val Gln Ser Phe Ile Gln Ala Tyr Glu Leu
 385 390 395

<210>791

<211>733

<212>PRT

<213>Chlamydia pneumoniae

<400>791

Glu Tyr Ile Phe Arg Leu Lys Thr Gly Asp Ile Val Asp Tyr Leu Glu
 1 5 10 15
 Lys Leu Gln Val Leu Ile Glu Glu Gly Gln Ser Ala Asn Phe Leu Ser
 20 25 30
 Leu Trp Glu Glu Tyr Cys Phe Asn Asp Val Val Arg Gly Arg Glu Leu
 35 40 45
 Val Glu Ile Leu Glu Lys Val Lys Ser Ser Ser Leu Ala Ser Leu Phe
 50 55 60
 Gly Lys Ile Val Asp Thr Val Val Pro Leu Trp Glu Lys Ile Pro Glu
 65 70 75 80
 Gly Lys Asp Lys Asp Arg Val Leu Gln Leu Ile Leu Asp Leu Gln Thr
 85 90 95
 Ser Asn Ser Gln Met Phe Phe Asp Ile Ala Thr Glu Tyr Val Asn Lys
 100 105 110
 Lys Tyr Ser Gly Glu Glu Asn Phe Asn Glu Ala Leu Arg Val Val Gly
 115 120 125
 Leu Arg Asp Gly Arg Asp Phe Gln Phe Ser Leu Ser Arg Phe Asp Phe
 130 135 140
 Leu Met His Met His Lys Gly Asn Phe Val Phe His Gln Gly Gly Trp
 145 150 155 160
 Gly Val Gly Glu Val Met Gly Val Ser Phe Leu Gln Gln Lys Val Leu
 165 170 175
 Ile Glu Phe Glu Gly Ile Met Ser Ala Lys Asp Ile Ser Phe Glu Thr
 180 185 190
 Ala Phe Lys Ser Leu Thr Pro Leu Ser Gly Asp His Phe Leu Ser Arg
 195 200 205
 Arg Phe Gly Asp Pro Asp Gly Phe Glu Ala Phe Ala Lys Glu Asn Pro
 210 215 220
 Ile Glu Val Val Glu Ile Leu Leu Arg Asp Leu Gly Pro Lys Thr Ala
 225 230 235 240
 Lys Glu Ile Lys Asp Glu Leu Val Asp Leu Val Ile Pro Glu Ala Asp
 245 250 255
 Trp Asn Arg Trp Trp Gln Ser Ala Lys Thr Lys Ile Lys Lys Gly Thr
 260 265 270
 Arg Ile Ile Ser Pro Asp Asn Pro Lys Glu Pro Tyr Val Leu Ser Asp
 275 280 285
 Ala Gly Cys Ser His Met Gly Gln Leu Glu Arg Lys Leu Gly Leu Ser
 290 295 300
 Leu Asn Ser Ala Glu Lys Ile Ser Leu Ile Tyr His Phe Ile Arg Asp
 305 310 315 320
 Leu His Ser Glu Leu Lys Asn Ile Glu Ile Arg Lys Ser Leu Val Lys
 325 330 335
 Ala Leu Gln Asp Leu Asp Val Glu Glu Gly Asn Lys Ser Leu Ile Leu
 340 345 350
 Gln Arg Glu Leu Leu Leu Ser Glu Tyr Leu Gly Ile Lys Asp Ala Ser
 355 360 365
 Ile Asp Lys Glu Tyr Ile Thr Ser Leu Ser Glu Asp Asp Thr Ser Arg
 370 375 380
 Leu Leu Glu Asn Met Pro Ile Val Ala Leu Gln Lys Ser Phe Leu Ser

385 390 395 400
 Leu Val Arg Lys Tyr Ser Ser Phe Trp Gln Gln Val Phe Met Gln Ile
 405 410 415
 Leu Leu Tyr Thr Thr Ser Pro Thr Met Arg Asp Phe Val Tyr Lys Thr
 420 425 430
 Ile Lys Asn Asp Pro Ser Ser Val Glu Val Leu Lys Lys Arg Leu Leu
 435 440 445
 Asp Ser Ala His Gln Pro Met Met Phe Pro Glu Leu Phe Val Trp Phe
 450 455 460
 Phe Leu Lys Leu Gly Asn His Glu Asp Gly Leu Phe Asp Pro Glu Asp
 465 470 475 480
 Lys Glu Val Leu Arg Leu Phe Leu Glu Ser Ala Leu Asn Phe Met Tyr
 485 490 495
 Gln Val Ala Ser Thr Pro His Lys Glu Leu Gly Lys Lys Leu His His
 500 505 510
 Tyr Leu Val Gly Gln Arg Tyr Leu Ala Val Arg Gln Met Ile Glu Gly
 515 520 525
 Ala Ser Leu Pro Phe Leu Lys Glu Leu Leu Leu Leu Ser Thr Lys Cys
 530 535 540
 Pro Gln Phe Ser Ser Ser Asp Leu Asn Val Leu Gln Ser Leu Ala Glu
 545 550 555 560
 Val Val Gln Pro Thr Leu Lys Lys His Lys Ser Asn Val Glu Glu Glu
 565 570 575
 Asn Val Leu Trp Ser Thr Ser Glu Ser Phe Ser Arg Met Lys Ala Lys
 580 585 590
 Leu Gln Ser Leu Val Gly Lys Glu Met Val Asp Asn Ala Lys Glu Ile
 595 600 605
 Glu Asp Ala Arg Ser Leu Gly Asp Leu Arg Glu Asn Ser Glu Tyr Lys
 610 615 620
 Phe Ala Leu Glu Lys Arg Ala Arg Leu Gln Glu Glu Ile Arg Val Leu
 625 630 635 640
 Ser Glu Glu Ile Asn Arg Ala Arg Ile Leu Thr Lys Asp Leu Val Phe
 645 650 655
 Thr Asp Lys Val Gly Val Gly Cys Lys Val Thr Leu Lys Gly Asp Ala
 660 665 670
 Gly Glu Val Val Glu Tyr Thr Ile Leu Gly Pro Trp Asp Ala Asp Pro
 675 680 685
 Asp Ser Cys Ile Leu Ser Leu Gln Ser Lys Leu Ala Gln Asn Met Leu
 690 695 700
 Gly Lys Lys Leu Asn Asp Val Val Ile Leu Gln Gly Lys Glu Tyr Lys
 705 710 715 720
 Ile Ser Arg Ile Gln Ser Ile Trp Glu Glu His Gly Ala
 725 730

<210>792

<211>149

<212>PRT

<213>Chlamydia pneumoniae

<400>792

Thr Lys Met Met Val Ile Val Met Asn Ser Lys Ser Ala Gln Lys Ile
 1 5 10 15
 Ile Asp Ser Ile Lys Gln Ile Leu Thr Ile Tyr Asn Ile Asp Phe Asp
 20 25 30
 Pro Ser Phe Gly Ser Ser Leu Ser Ser Asp Ser Asp Ala Asp Tyr Glu
 35 40 45
 Tyr Leu Ile Thr Lys Thr Gln Glu Lys Ile Gln Glu Leu Asp Lys Arg
 50 55 60
 Ala Gln Glu Ile Leu Thr Gln Thr Gly Met Ser Lys Glu Gln Met Glu
 65 70 75 80
 Val Phe Ala Asn Asn Pro Asp Asn Phe Ser Pro Glu Glu Trp Leu Ala
 85 90 95
 Leu Glu Lys Val Arg Ser Ser Cys Asp Glu Tyr Arg Lys Glu Thr Glu
 100 105 110
 Asn Leu Ile Asn Glu Ile Thr Leu Asp Leu His Pro Thr Lys Glu Ser
 115 120 125

Lys Arg Pro Lys Gln Lys Leu Ser Ser Thr Lys Lys Asn Lys Lys Lys
 130 135 140
 Asn Trp Ile Pro Leu
 145
 <210>793
 <211>469
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>793
 Ile Phe Met Lys Ile Thr Val Asn Arg Gly Leu Asp Leu Ser Leu Gln
 1 5 10 15
 Gly Ser Pro Lys Glu Ser Gly Phe Tyr Asn Lys Ile Asp Pro Glu Phe
 20 25 30
 Val Ser Ile Asp Leu Arg Pro Phe Gln Pro Leu Ser Leu Lys Leu Lys
 35 40 45
 Val Glu Gln Gly Asp Ala Val Cys Ser Gly Ala Pro Ile Ala Glu Tyr
 50 55 60
 Lys His Phe Pro Asn Thr Tyr Ile Thr Ser His Val Ser Gly Val Val
 65 70 75 80
 Thr Ala Ile Arg Arg Gly Asn Lys Arg Ser Leu Leu Asp Val Ile Ile
 85 90 95
 Lys Lys Thr Pro Gly Pro Thr Ser Thr Glu Tyr Thr Tyr Asp Leu Gln
 100 105 110
 Thr Leu Ser Arg Ser Asp Leu Ser Glu Ile Phe Lys Glu Asn Gly Leu
 115 120 125
 Phe Ala Leu Ile Lys Gln Arg Pro Phe Asp Ile Pro Ala Ile Pro Thr
 130 135 140
 Gln Thr Pro Arg Asp Val Phe Ile Asn Leu Ala Asp Asn Arg Pro Phe
 145 150 155 160
 Thr Pro Ser Pro Glu Lys His Leu Ala Leu Phe Ser Ser Arg Glu Glu
 165 170 175
 Gly Phe Tyr Val Phe Val Val Gly Val Arg Ala Ile Ala Lys Leu Phe
 180 185 190
 Gly Leu Arg Pro His Ile Val Phe Arg Asp Arg Leu Thr Leu Pro Thr
 195 200 205
 Gln Glu Leu Lys Thr Ile Ala His Leu His Thr Val Ser Gly Pro Phe
 210 215 220
 Pro Ser Gly Ser Pro Ser Ile His Ile His Ser Val Ala Pro Ile Thr
 225 230 235 240
 Asn Glu Lys Glu Val Val Phe Thr Leu Ser Phe Gln Asp Val Leu Thr
 245 250 255
 Ile Gly His Leu Phe Leu Lys Gly Arg Ile Leu His Glu Gln Val Thr
 260 265 270
 Ala Leu Ala Gly Thr Ala Leu Lys Ser Ser Leu Arg Arg Tyr Val Ile
 275 280 285
 Thr Thr Lys Gly Ala Ser Phe Ser Ser Leu Ile Asn Leu Asn Asp Ile
 290 295 300
 Ser Asp Asn Asp Thr Leu Ile Ser Gly Asp Pro Leu Thr Gly Arg Leu
 305 310 315 320
 Cys Lys Lys Glu Glu Glu Pro Phe Leu Gly Phe Arg Asp His Ser Ile
 325 330 335
 Ser Val Leu His Asn Pro Thr Lys Arg Glu Leu Phe Ser Phe Leu Arg
 340 345 350
 Ile Gly Phe Asn Lys Pro Thr Phe Thr Lys Thr Tyr Leu Ser Gly Phe
 355 360 365
 Phe Lys Lys Lys Arg Thr Tyr Thr Asn Pro Asp Thr Asn Leu His Gly
 370 375 380
 Glu Thr Arg Pro Ile Ile Asp Thr Asp Ile Tyr Asp Lys Val Met Pro
 385 390 395 400
 Met Arg Ile Pro Val Val Pro Leu Ile Lys Ala Val Ile Thr Lys Asn
 405 410 415
 Phe Asp Leu Ala Asn Glu Leu Gly Phe Leu Glu Val Cys Gly Glu Asp
 420 425 430
 Phe Ala Leu Pro Thr Leu Ile Asp Pro Ser Lys Thr Glu Met Leu Thr

435 440 445
 Ile Val Lys Glu Ser Leu Ile Glu Tyr Ala Lys Glu Ser Gly Ile Leu
 450 455 460
 Thr Pro His Gln Asp
 465
 <210>794
 <211>313
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>794
 Glu Met Ser Ser Leu Thr Leu Ser Arg Arg Pro Arg Arg Asn Arg Lys
 1 5 10 15
 Thr Ala Ala Ile Arg Asp Leu Leu Ala Glu Thr His Leu Ser Pro Lys
 20 25 30
 Asp Leu Ile Ala Pro Phe Phe Val Lys Tyr Gly Asn Asn Ile Lys Glu
 35 40 45
 Glu Ile Pro Ser Leu Pro Gly Val Phe Arg Trp Ser Leu Asp Leu Leu
 50 55 60
 Leu Lys Glu Ile Glu Arg Leu Cys Thr Tyr Gly Leu Arg Ala Val Met
 65 70 75 80
 Leu Phe Pro Ile Ile Pro Asp Asp Leu Lys Asp Ala Tyr Gly Ser Tyr
 85 90 95
 Ser Ser Asn Pro Lys Asn Ile Leu Cys His Ser Ile His Glu Ile Lys
 100 105 110
 Asn Ala Phe Pro His Leu Cys Leu Ile Ser Asp Ile Ala Leu Asp Pro
 115 120 125
 Tyr Thr Thr His Gly His Asp Gly Ile Phe Leu Asn Gly Glu Val Leu
 130 135 140
 Asn Asp Glu Ser Val Arg Ile Phe Gly Asn Ile Ala Thr Leu His Ala
 145 150 155 160
 Glu Met Gly Ala Asp Ile Val Ala Pro Ser Asp Met Met Asp Gly Arg
 165 170 175
 Ile Gly Tyr Ile Arg Ser Lys Leu Asp Gln Ser Gly Tyr Ser Lys Thr
 180 185 190
 Ser Ile Met Ser Tyr Ser Val Lys Tyr Ala Ser Cys Leu Tyr Ser Pro
 195 200 205
 Phe Arg Asp Ala Leu Ser Ser His Val Thr Ser Gly Asp Lys Lys Gln
 210 215 220
 Tyr Gln Met Asn Pro Lys Asn Val Leu Glu Ala Leu Leu Glu Ser Ser
 225 230 235 240
 Leu Asp Glu Glu Glu Gly Ala Asp Ile Leu Met Val Lys Pro Ala Gly
 245 250 255
 Leu Tyr Leu Asp Val Ile Tyr Arg Ile Arg Gln Asn Thr Cys Leu Pro
 260 265 270
 Leu Ala Ala Tyr Gln Val Ser Gly Glu Tyr Ala Met Ile Leu Ser Ala
 275 280 285
 Phe Gln Gln Gly Trp Leu Asp Lys Glu Thr Leu Phe His Glu Ser Leu
 290 295 300
 Ile Ala Ile Lys Arg Leu Ala Gln Ile
 305 310

<210>795

<211>128

<212>PRT

<213>Chlamydia pneumoniae

<400>795

Phe Ser Gly Arg Cys Pro Phe Ser Phe Glu Val Phe Met Leu Gly Lys
 1 5 10 15
 Glu Glu Glu Phe Thr Cys Lys Gln Lys Gln Cys Leu Ser His Phe Val
 20 25 30
 Thr Asn Leu Thr Ser Asp Val Phe Ala Leu Lys Asn Leu Pro Glu Val
 35 40 45
 Val Lys Gly Ala Leu Phe Ser Lys Tyr Ser Arg Ser Val Leu Gly Leu
 50 55 60
 Arg Ala Leu Leu Leu Lys Glu Phe Leu Ser Asn Glu Glu Asp Gly Asp

65	70	75	80
Val Cys Asp Glu Ala Tyr Asp Phe Glu Thr Asp Val Gln Lys Ala Ala			
	85	90	95
Asp Phe Tyr Gln Arg Val Leu Asp Asn Phe Gly Asp Asp Ser Val Gly			
	100	105	110
Glu Leu Gly Gly Ala Pro Gly Tyr Gly Lys Cys Leu Tyr Phe Gly Cys			
	115	120	125
<210>796			
<211>431			
<212>PRT			
<213>Chlamydia pneumoniae			
<400>796			
Glu Ser Leu Ala Glu His Leu Ala Met Glu Asn Val Ser Ile Leu Ala			
1	5	10	15
Ala Lys Val Leu Glu Asp Ala Arg Ile Gly Gly Ser Pro Leu Glu Lys			
	20	25	30
Ser Thr Arg Tyr Val Tyr Phe Asp Gln Lys Val Arg Gly Glu Tyr Leu			
	35	40	45
Tyr Tyr Arg Asp Pro Ile Leu Met Thr Ser Ala Phe Lys Asp Met Phe			
	50	55	60
Leu Gly Thr Cys Asp Phe Leu Phe Asp Thr Tyr Ser Ala Leu Ile Pro			
	65	70	75
Gln Val Arg Ala Tyr Phe Glu Lys Leu Tyr Pro Lys Asp Ser Lys Thr			
	85	90	95
Pro Ala Ser Ala Tyr Ala Thr Ser Leu Arg Ala Lys Val Leu Asp Cys			
	100	105	110
Ile Arg Gly Leu Leu Pro Ala Ala Thr Leu Thr Asn Leu Gly Phe Phe			
	115	120	125
Gly Asn Gly Arg Phe Trp Gln Asn Leu Ile His Lys Leu Gln Gly His			
	130	135	140
Asn Leu Ala Glu Leu Arg Arg Leu Gly Asp Glu Ser Leu Thr Glu Leu			
	145	150	155
Met Lys Val Ile Pro Ser Phe Val Ser Arg Ala Glu Pro His His His			
	165	170	175
His His Gln Ala Met Met Gln Tyr Arg Arg Ala Leu Lys Glu Gln Leu			
	180	185	190
Lys Gly Leu Ala Glu Gln Ala Thr Phe Ser Glu Glu Met Ser Ser Ser			
	195	200	205
Pro Ser Val Gln Leu Val Tyr Gly Asp Pro Asp Gly Ile Tyr Lys Val			
	210	215	220
Ala Ala Gly Phe Leu Phe Pro Tyr Ser Asn Arg Ser Leu Thr Asp Leu			
	225	230	235
Ile Asp Tyr Cys Lys Lys Met Pro His Glu Asp Leu Val Gln Ile Leu			
	245	250	255
Glu Ser Ser Val Ser Ala Arg Glu Asn Arg Arg His Lys Ser Pro Arg			
	260	265	270
Gly Leu Glu Cys Val Glu Phe Gly Phe Asp Ile Leu Ala Asp Phe Gly			
	275	280	285
Ala Tyr Arg Asp Leu Gln Arg His Arg Thr Leu Thr Gln Glu Arg Gln			
	290	295	300
Leu Leu Ser Thr His His Gly Tyr Asn Phe Pro Val Glu Leu Leu Asp			
	305	310	315
Thr Pro Met Glu Lys Ser Tyr Arg Glu Ala Met Glu Arg Ala Asn Glu			
	325	330	335
Thr Tyr Asn Glu Ile Val Gln Glu Phe Pro Glu Glu Ala Gln Tyr Met			
	340	345	350
Val Pro Met Ala Tyr Asn Ile Arg Trp Phe Phe His Val Asn Ala Arg			
	355	360	365
Ala Leu Gln Trp Ile Cys Glu Leu Arg Ser Gln Pro Gln Gly His Gln			
	370	375	380
Asn Tyr Arg Thr Ile Ala Thr Gly Leu Val Arg Glu Val Val Lys Phe			
	385	390	395
Asn Pro Met Tyr Glu Leu Phe Phe Lys Phe Val Asp Tyr Ser Asp Ile			
	405	410	415

WO 99/27105

Asp Leu Gly Arg Leu Asn Gln Glu Met Arg Lys Glu Pro Thr Thr
 420 425 430

<210>797

<211>292

<212>PRT

<213>Chlamydia pneumoniae

<400>797

Gly Thr Leu Val Leu His Ala Leu Asp Thr Tyr Arg Pro Ser Ile Glu
 1 5 10 15
 Ser Ala Ile Glu Lys Ala Leu Glu Gly Phe Gly Pro Ile Gly His Pro
 20 25 30
 Ile Arg Ser Pro Val Glu Tyr Ala Leu Gln Gly Gly Gly Lys Arg Leu
 35 40 45
 Arg Pro Gly Leu Val Cys Met Met Ala Gln Gly Leu Gly Leu Asn His
 50 55 60
 Asp Val Met Asp Ser Ala Leu Ala Val Glu Phe Val His Thr Ser Thr
 65 70 75 80
 Leu Ile Ala Asp Asp Leu Pro Cys Met Asp Asn Asp Asp Glu Arg Arg
 85 90 95
 Gly Arg Pro Thr Val His Lys Ala Phe Asp Glu Ala Thr Ala Leu Leu
 100 105 110
 Ala Ser Tyr Ala Leu Ile Pro Ala Ala Tyr Ser His Leu Arg Leu Asn
 115 120 125
 Ala Lys Lys Leu Lys Glu Gln Gly Cys Asp Pro Arg Glu Ile Asp Ile
 130 135 140
 Ala Tyr Asn Ile Ile Gly Asp Ile Thr Asp Lys Asn Ile Gly Cys Ser
 145 150 155 160
 Gly Val Leu Gly Gly Gln Tyr Asp Asp Met Phe Phe Ser Asn Arg Gly
 165 170 175
 Gln Glu His Val Gln Ser Ile Met Ile Lys Lys Thr Gly Ser Leu Phe
 180 185 190
 Glu Ile Ala Cys Ile Ser Gly Trp Leu Phe Gly Gly Gly Asp Pro Gln
 195 200 205
 Phe Ala Pro Ile Ile Thr Ser Phe Ser Asn Asn Phe Gly Leu Leu Phe
 210 215 220
 Gln Ile Lys Asp Asp Phe Ser Asp Leu Gln Lys Asp Ser Gln Gln Ile
 225 230 235 240
 Gly Leu Asn Tyr Ala Leu Leu Phe Gly Glu Lys Ala Ala Leu Glu Leu
 245 250 255
 Leu Ala Arg Ser Gln Asn Asn Cys Leu Glu Leu Leu Asp Arg Leu Ser
 260 265 270
 Ala Gly Gly Leu Lys Asn Ser Ser Glu Phe Glu Thr Ile Ile Ser Ser
 275 280 285
 Leu Gly Ser Phe
 290

<210>798

<211>208

<212>PRT

<213>Chlamydia pneumoniae

<400>798

Met Thr Tyr Leu Ala Ser Ser Ile Phe Ser Pro Glu Asp Phe Leu Tyr
 1 5 10 15
 Pro Glu Ile Ile Ser Lys Ala His Tyr Thr Trp Asp Ile Leu Asp Leu
 20 25 30
 Met Asp Gln Met Leu Glu Asn His Val Phe Ser Gly Ile His Gly Thr
 35 40 45
 Val Glu Ser Gly Val Thr Leu Lys Asn Ile Glu Lys Ile Glu Ile Ala
 50 55 60
 Glu Asp Ala Tyr Val Glu Ser Gly Ala Tyr Ile Val Gly Pro Cys Ile
 65 70 75 80
 Leu Gly Ser Gln Thr Glu Val Arg His Gly Ala Tyr Leu Arg Gly Asn
 85 90 95
 Val Ile Thr Gly Ser Arg Cys Val Val Gly His Cys Thr Glu Ile Lys
 100 105 110

Asn Ser Tyr Leu Gly His His Thr Lys Ala Ala His Phe Ala Tyr Leu
 115 120 125
 Gly Asp Ser Val Leu Ser Ser Glu Val Asn Leu Gly Ala Gly Val Arg
 130 135 140
 Cys Ala Asn Phe Arg Leu Asp Gly Arg Asn Ile Tyr Val Arg Ser Thr
 145 150 155 160
 Ser Asp Lys Ser Lys Lys Ile Asp Thr Gly Arg Arg Lys Leu Gly Ala
 165 170 175
 Phe Leu Gly Lys Gly Val Ala Ile Gly Cys Asn Val Val Ile Asn Pro
 180 185 190
 Gly Gln His Ile Leu Pro His Thr Arg Ile Arg Pro Gly Gln Val Ile
 195 200 205

<210>799

<211>241

<212>PRT

<213>Chlamydia pneumoniae

<400>799

Asn Leu Phe Cys Phe His Met Ile Gly Asp Lys Ile Ile Leu Phe Val
 1 5 10 15
 Thr Glu Asp Leu Ser Leu Ser Ser Gln Leu Lys Asp Leu Ala Ser Gln
 20 25 30
 Arg Ser Asp Tyr Gln Ile Leu Val Ser Pro Val Phe Pro Thr Ser Phe
 35 40 45
 Glu Ser Val Ala Ile Phe Cys Glu Tyr Leu Leu Leu Pro Glu Gln Ile
 50 55 60
 Phe Ser Pro Gly Ile Phe Pro Glu Glu Asp Leu Ile Val Leu Phe Asp
 65 70 75 80
 Thr Phe Gln Glu Glu Ala Ile Thr Lys Val Leu Asn Gln Gly Ala Thr
 85 90 95
 Gly Tyr Leu Leu Arg Pro Ile Thr Ala Lys Val Leu Asp Ala Val Ile
 100 105 110
 Arg Ala Phe Leu Arg Gln His Glu Val Leu Glu His Ser Ile Pro Asp
 115 120 125
 Thr Met Thr Phe Gly Asp His Thr Phe Arg Val Leu Asn Leu Val Ile
 130 135 140
 Glu Ser Pro Glu Gly Ser Val Tyr Leu Thr Pro Ser Glu Ala Gly Ile
 145 150 155 160
 Leu Lys Lys Leu Leu Ile Asn Arg Gly His Leu Cys Leu Arg Lys Asn
 165 170 175
 Leu Leu Ala Glu Ile Lys Gly Asn Thr Lys Glu Ile Ile Ala Arg Asn
 180 185 190
 Val Asp Val His Ile Ala Ser Leu Arg Lys Lys Leu Gly Pro Tyr Gly
 195 200 205
 Ser Lys Ile Val Thr Ile Arg Gly Val Gly Tyr Leu Phe Ser Asp Ala
 210 215 220
 Asp Ser Ile Pro Leu Gln Asn His Asp Asn Thr Ala His Pro Ile Glu
 225 230 235 240
 Glu

<210>800

<211>609

<212>PRT

<213>Chlamydia pneumoniae

<400>800

Met Phe Arg Cys Ile Leu Phe Gly Ile Phe Leu Leu Thr Cys Phe Ser
 1 5 10 15
 Ser Gly Gly Val Leu Tyr Tyr Leu Phe Cys Ser His Asp Phe Ser Ile
 20 25 30
 Gly Pro Lys Glu Lys Ser Arg Ser Val Trp Ile Glu Glu Glu Lys Glu
 35 40 45
 Phe Thr Asp Ser Val Leu His His Leu Pro Ser Gln His Gln His Leu
 50 55 60
 His Ile Leu Cys Phe Gln Gly Phe Leu Leu Gln Lys Gln Gln Lys Phe
 65 70 75 80

WO 99/27105

Ser Gln Ala Glu Lys Ile Phe Ser Lys Val Tyr Asp Glu Ala Gln Asp 95
 Gly Pro Phe Leu Phe Lys Glu Glu Ile Leu Gly Ser Arg Leu Ile Asn 110
 Ser Phe Phe Leu Glu Lys Thr Asp Val Met Glu Thr Ile Leu Cys Leu 125
 Leu Asn Gln Arg Cys Pro Asn Ser Pro Tyr Tyr His Leu Phe Lys Ala 140
 Leu Val Cys Tyr Lys Gln Lys Leu Tyr Arg Glu Val Ile Glu Gln Leu 160
 Ala Tyr Trp Gln Glu Lys Thr Arg Ala Leu Ala Pro Leu Leu Asn 175
 Ile Ser Ile Glu Gln Leu Leu Thr Asp Phe Leu Leu Asp Tyr Ile Ser 190
 Ala His Ser Leu Ile Glu Gln Lys Met Phe Pro Glu Gly Arg Val Ile 205
 Leu Asn Arg Asn Ile Asn Arg Leu Leu Lys His Glu Cys Glu Trp Asn 220
 Ala Lys Thr Tyr Asp Arg Ile Ala Ile Leu Leu Ser Arg Ser Tyr Phe 240
 Leu Glu Leu Val Glu Ser Lys Ser Ala Asp Ile Tyr Phe Asp Tyr Tyr 255
 Glu Met Val Leu Phe Tyr Leu Lys Lys Ile Tyr Ile Leu Glu Gln Cys 270
 Pro Tyr Ala Glu Leu Leu Pro Glu Glu Glu Leu Val Ser Leu Ile Met 285
 Glu His Val Phe Ile Leu Pro Lys Asp Lys Leu Tyr Pro Leu Ile Gln 300
 Leu Leu Glu Met Trp Gln Lys His Tyr Val His Pro Asn Ser Ser Leu 320
 Val Val Gln Ile Leu Val Asp Arg Phe Ser Thr His Met Glu Gly Ala 335
 Ile Arg Phe Cys Glu Ala Leu Val Ser Phe Ser Gly Leu Glu Glu Leu 350
 His Gln Gln Ile Ile Thr Thr Phe Glu Glu Leu Leu Ser Asn Lys Val 365
 Gln Gln Ile Lys Thr Glu Glu Ala Lys Gln Cys Val Ala Leu Leu His 380
 Ile Leu Asp Pro Ser Ile Ser Ile Ser Glu Lys Leu Ala Leu Ser Ser 400
 Asp Thr Leu Gln Asn Ile Val Ser Gly Asp Glu Gln His Thr Lys 415
 Leu Arg Asn Tyr Leu Asp Leu Trp Glu Ala Ile Gln Ser Tyr Asp Ile 430
 Asp Arg Gln Gln Leu Val His His Leu Val Tyr Gly Ala Lys Asp Leu 445
 Trp Lys Lys Gly Gly Ser Asp Glu Lys Ala Leu Asn Leu Leu Gln Leu 460
 Val Leu Arg Phe Thr Ser Tyr Asp Ile Glu Cys Glu Ser Val Val Phe 480
 Leu Phe Ile Lys Gln Ala Tyr Lys Gln Ala Leu Ser Ser His Ala Ile 495
 Ala Arg Leu Leu Lys Leu Glu Lys Phe Ile Ser Glu Ala Asn Ile Pro 510
 Ser Ile Val Ile Ser Glu Ala Glu Lys Ala Asn Phe Leu Ala Asp Ala 525
 Glu Tyr Leu Phe Ala His Glu Asp Tyr Asp Lys Cys Tyr Leu Tyr Ser 540
 Met Trp Leu Thr Lys Val Ala Pro Ser Pro Gln Ser Tyr Arg Leu Ala 560
 Gly Leu Cys Leu Met Glu Asn Lys Arg Tyr Asp Glu Ala Leu Glu Phe 575
 Leu Cys Met Leu Ser Pro Asn Asp Ser Ile Asn Asp Tyr Lys Thr Gln 590

Lys Ala Leu Ala Phe Cys Gln Lys His Gln Ser Lys Asp Arg Ala Ala
 595 600 605

Ser

<210>801

<211>295

<212>PRT

<213>Chlamydia pneumoniae

<400>801

Gly	Trp	Ala	Leu	His	Thr	Glu	Phe	Ala	Pro	Phe	Leu	Glu	Asp	Leu	Val
1				5					10					15	
His	Gln	Gln	Val	Ile	Ser	Pro	Leu	Asp	Ile	Ala	Phe	Ala	Ser	Lys	His
			20					25					30		
Ile	Ser	Ser	Asp	Phe	Glu	Glu	Ser	Phe	Val	Phe	Leu	Ala	Val	Ser	Ser
		35					40					45			
Ala	Leu	Trp	Arg	Tyr	Gly	His	Pro	Phe	Leu	Ser	Leu	Glu	Glu	Asn	Arg
	50					55					60				
Ile	Arg	Pro	Ser	Leu	Gly	Gly	Ile	Ser	Glu	Thr	Asp	Leu	Tyr	Arg	Gly
65					70				75					80	
Phe	His	Asn	Leu	Pro	Lys	Glu	Val	Arg	Asp	Lys	Leu	Phe	Val	Val	Val
			85						90					95	
Ser	Gly	Arg	Leu	Tyr	Leu	Arg	Ser	Leu	Tyr	Thr	Ile	Arg	Ser	Lys	Leu
			100					105						110	
Leu	Asp	Lys	Leu	Ser	Leu	Leu	Cys	Ser	Ala	Thr	Pro	Asn	Tyr	Phe	Pro
	115						120					125			
Pro	Ser	Ile	Asp	Ser	Ser	Ile	Leu	Ser	Glu	Glu	Gln	Asn	Phe	Ile	Phe
	130					135					140				
Asn	Lys	Ile	Thr	Gln	Gly	Cys	Phe	Ser	Ile	Val	Ser	Gly	Gly	Pro	Gly
145					150					155				160	
Thr	Gly	Lys	Thr	Phe	Leu	Ala	Ala	Gln	Leu	Ile	Leu	Ser	Leu	Val	Lys
				165					170					175	
Gln	Gln	Pro	Lys	Leu	Arg	Ile	Ala	Ile	Val	Ser	Pro	Thr	Gly	Lys	Ala
			180					185					190		
Thr	Ser	His	Ile	Arg	Gln	Ile	Leu	Met	Lys	Tyr	Asn	Ile	Phe	Asp	Asp
	195						200					205			
Met	Val	Leu	Met	Gln	Thr	Val	His	His	Phe	Leu	Gln	Glu	Tyr	Ala	Tyr
	210					215					220				
Arg	Arg	Tyr	Asn	Ser	Ile	Asp	Val	Leu	Leu	Val	Asp	Glu	Gly	Ser	Met
225					230					235				240	
Val	Thr	Phe	Asp	Leu	Leu	Tyr	Ser	Leu	Val	Gln	Thr	Leu	Gln	Gly	Tyr
			245						250					255	
Glu	Lys	Asp	Lys	Lys	Leu	Tyr	Thr	Ser	Ser	Leu	Ile	Ile	Leu	Gly	Asp
			260					265					270		
Thr	Asn	Gln	Leu	Pro	Pro	Ile	Gly	Ile	Gly	Val	Gly	Asn	Pro	Leu	Gln
		275					280						285		
Asp	Leu	Ile	Gly	Tyr	Phe	Pro									
	290					295									

<210>802

<211>205

<212>PRT

<213>Chlamydia pneumoniae

<400>802

Asp	Ile	Ser	His	Glu	Asn	Thr	Phe	Phe	Leu	Lys	Thr	Ser	His	Arg	Ala
1				5					10					15	
Lys	Thr	Gly	Val	Val	Asp	Gln	Leu	Thr	Gln	Ser	Val	Leu	Arg	Gly	Glu
			20					25					30		
Met	Ile	Ser	Phe	Ser	Pro	Leu	Pro	Ser	Ile	Ser	Ser	Ala	Ile	Glu	Val
		35				40						45			
Leu	Lys	Asn	Arg	Phe	Val	Lys	Ser	Leu	Arg	Gln	Ser	Glu	Ala	Arg	Leu
	50					55					60				
Cys	Val	Leu	Thr	Pro	Met	Arg	His	Gly	Pro	Trp	Gly	Val	Leu	Asn	Leu
65					70				75					80	
Asn	Thr	Met	Ile	His	Gln	Arg	Leu	Ala	Arg	Ser	Asp	Pro	Asp	Leu	Arg
				85					90					95	

Ile Pro Ile Met Val Thr Ser Arg Tyr Glu Thr Trp Gly Leu Phe Asn
 100 105 110
 Gly Asp Thr Gly Leu Leu Cys Leu Lys Thr Gln Lys Leu His Phe Pro
 115 120 125
 Gln His Glu Pro Ile Asp Ser Arg Ala Leu Ser Gln Tyr Val Tyr Asn
 130 135 140
 Tyr Val Met Ser Val His Lys Ser Gln Gly Ser Glu Tyr Asp Glu Val
 145 150 155 160
 Ile Val Ile Ile Pro Lys Gly Ser Glu Val Phe Gly Val Ser Ile Leu
 165 170 175
 Tyr Thr Ala Ile Thr Arg Ala Lys Tyr Arg Val Ser Val Trp Arg Asp
 180 185 190
 Pro Glu Thr Leu His Lys Thr Ile Lys Lys Ser Asn Tyr
 195 200 205

<210>803

<211>283

<212>PRT

<213>Chlamydia pneumoniae

<400>803

Ile Met Ala Thr Ala His Leu Gly Arg Gln Ala Leu Leu His Leu Arg
 1 5 10 15
 Ser Trp Thr Pro Ala Ile Arg Ala Ser Gly Asn Leu Phe Arg Gln Gln
 20 25 30
 Ser Met Ser Leu His Asn Asn Val Leu Phe Ala Gly Asp Ile Val Gly
 35 40 45
 Ala Ile Lys Asn Ser Thr Ala Ile Ser Arg His Ala Leu Gly Ser Ser
 50 55 60
 His Tyr Ala His Ala Ala Leu Gln Lys Thr Glu Gly Phe Leu Gly Ala
 65 70 75 80
 Ala Asp Gly Val Asn Thr Ala Val Ala Gly Ala Met Leu Trp Gly Gln
 85 90 95
 Leu Leu Asn Gly Ser Met Ile Phe Glu Thr Asp Glu Glu Thr Gly Glu
 100 105 110
 Leu Arg Arg Cys Asn Glu Ala Asp Ala Glu Gly Cys Met Thr Gln Lys
 115 120 125
 Leu Gln Arg Arg Ser Ala Leu Thr Ile Thr Gly Lys Val Ala Arg Leu
 130 135 140
 Ala Ser Lys Thr Leu Gly Thr Ala Thr Phe Leu His Glu Met Asp Val
 145 150 155 160
 Val Ser Leu Gly Ala Asn Ala Asn Lys Ile Gly Cys Lys Val Thr Ser
 165 170 175
 Cys Leu Asn Leu Val Ala Thr Gly Cys Ser Leu Thr Glu Ser Ser Ile
 180 185 190
 Ser Leu Tyr Arg Ile Leu Ser Thr Arg Pro Glu Thr Ile Ser Asp Pro
 195 200 205
 Glu Asn Arg Asn Lys Pro Ser Ala Glu Phe Ala Ala Arg Ser Lys Ala
 210 215 220
 Ile Arg Asn Ala Phe Ile Ala Trp Leu Gly Asp Val Val Asp Leu Val
 225 230 235 240
 Cys Asp Ala Leu Gly Thr Leu Ser Leu Phe Leu Pro Ala Ile Leu Gly
 245 250 255
 Val His Ala Val Leu Ile Met Ala Ile Leu Gly Leu Ile Ser Cys Val
 260 265 270
 Ile Asn Phe Val Lys Asp Tyr Ala Lys Ile Gly
 275 280

<210>804

<211>88

<212>PRT

<213>Chlamydia pneumoniae

<400>804

Tyr Thr Lys Lys Thr Ser Ala Glu Lys Arg Ile Leu Thr Ala Gln Lys
 1 5 10 15
 Arg Glu Leu Ile Asn His Ser Phe Lys Ser Lys Val Lys Thr Ile Val
 20 25 30

405

<210>806

<211>591

<212>PRT

<213>Chlamydia pneumoniae

<400>806

Leu Thr Lys Leu Ser Ser Lys Ala Arg Asn Pro Leu Val Leu Phe Gln
 1 5 10 15
 Val Arg Lys Leu Phe Met Asn Thr Gln Asn Ser Gln Ala Thr Glu Val
 20 25 30
 Ser Ser Glu Glu Glu Ser Gln Lys Lys Leu Glu Glu Leu Val Ala Leu
 35 40 45
 Ala Lys Glu Gln Gly Phe Ile Thr Tyr Glu Glu Ile Asn Glu Ile Leu
 50 55 60
 Pro Met Ser Phe Asp Thr Pro Glu Gln Ile Asp Gln Val Leu Ile Phe
 65 70 75 80
 Leu Thr Gly Met Asp Ile Gln Val Leu Asn Gln Ile Asp Val Glu Arg
 85 90 95
 Gln Lys Glu Lys Lys Lys Glu Ala Lys Glu Leu Glu Gly Leu Ala Arg
 100 105 110
 Arg Thr Glu Gly Thr Pro Asp Asp Pro Val Arg Met Tyr Leu Lys Glu
 115 120 125
 Met Gly Thr Val Pro Leu Leu Thr Arg Glu Glu Glu Val Glu Ile Ser
 130 135 140
 Lys Arg Ile Glu Lys Ala Gln Val Gln Ile Glu Arg Ile Ile Leu Arg
 145 150 155 160
 Phe Arg Tyr Ser Ala Lys Glu Ala Ile Ser Ile Ala His Tyr Leu Ile
 165 170 175
 Ser Gly Lys Glu Arg Phe Asp Lys Ile Ile Ser Glu Lys Glu Val Glu
 180 185 190
 Asp Lys Thr His Phe Leu Lys Leu Leu Pro Lys Leu Ile Thr Leu Leu
 195 200 205
 Lys Glu Glu Asp Thr Tyr Leu Glu Asn Leu Leu Leu Ser Leu Lys Gln
 210 215 220
 Pro Asp Leu Ser Lys Gln Glu Ala Ala Lys Leu Asn Asp Ser Leu Glu
 225 230 235 240
 Lys Cys Arg Ile Arg Thr Gln Ala Tyr Leu Arg Cys Phe His Cys Arg
 245 250 255
 His Asn Val Thr Glu Asp Phe Gly Glu Val Val Phe Lys Ala Tyr Asp
 260 265 270
 Ser Phe Leu His Leu Glu Gln Gln Ile Asn Asp Leu Lys Val Arg Ala
 275 280 285
 Glu Arg Asn Lys Phe Ala Ala Ala Lys Leu Ala Ala Lys Arg Lys
 290 295 300
 Leu Tyr Lys Arg Glu Val Ala Ala Gly Arg Thr Leu Glu Glu Phe Lys
 305 310 315 320
 Lys Asp Val Arg Met Leu Gln Arg Trp Met Asp Lys Ser Gln Glu Ala
 325 330 335
 Lys Lys Glu Met Val Glu Ser Asn Leu Arg Leu Val Ile Ser Ile Ala
 340 345 350
 Lys Lys Tyr Thr Asn Arg Gly Leu Ser Phe Leu Asp Leu Ile Gln Glu
 355 360 365
 Gly Asn Met Gly Leu Met Lys Ala Val Glu Lys Phe Glu Tyr Arg Arg
 370 375 380
 Gly Tyr Lys Phe Ser Thr Tyr Ala Thr Trp Trp Ile Arg Gln Ala Val
 385 390 395 400
 Thr Arg Ala Ile Ala Asp Gln Ala Arg Thr Ile Arg Ile Pro Val His
 405 410 415
 Met Ile Glu Thr Ile Asn Lys Val Leu Arg Gly Ala Lys Lys Leu Met
 420 425 430
 Met Glu Thr Gly Lys Glu Pro Thr Pro Glu Glu Leu Ala Glu Glu Leu
 435 440 445
 Gly Leu Thr Pro Asp Arg Val Arg Glu Ile Tyr Lys Ile Ala Gln His
 450 455 460

Pro Ile Ser Leu Gln Ala Glu Val Gly Glu Gly Ser Glu Ser Ser Phe
 465 470 475 480
 Gly Asp Phe Leu Glu Asp Thr Ala Val Glu Ser Pro Ala Glu Ala Thr
 485 490 495
 Gly Tyr Ser Met Leu Lys Asp Lys Met Lys Glu Val Leu Lys Thr Leu
 500 505 510
 Thr Asp Arg Glu Arg Phe Val Leu Ile His Arg Phe Gly Leu Leu Asp
 515 520 525
 Gly Lys Pro Lys Thr Leu Glu Glu Val Gly Ser Ala Phe Asn Val Thr
 530 535 540
 Arg Glu Arg Ile Arg Gln Ile Glu Ala Lys Ala Leu Arg Lys Met Arg
 545 550 555 560
 His Pro Ile Arg Ser Lys Gln Leu Arg Ala Phe Leu Asp Leu Leu Glu
 565 570 575
 Glu Glu Lys Thr Gly Thr Ser Lys Val Lys Ser Leu Lys Ser Lys
 580 585 590

<210>807

<211>142

<212>PRT

<213>Chlamydia pneumoniae

<400>807

Pro Cys Ile Lys Asn Ile Ala Leu Val Ile Ala Ile Glu Arg Tyr Gln
 1 5 10 15
 Leu Ile Ile Ser Lys Phe Arg Met Trp Leu Phe Leu Gly Cys Ser Val
 20 25 30
 Glu Glu Arg His Phe Lys Gln Pro Val Leu Ile Ser Val Thr Phe Ser
 35 40 45
 Tyr Asn Glu Val Pro Ser Ala Cys Leu Ser Asp Lys Leu Ser Asp Ala
 50 55 60
 Cys Cys Tyr Leu Glu Val Thr Ser Leu Ile Glu Glu Ile Ala Asn Thr
 65 70 75 80
 Lys Pro Tyr Ala Leu Ile Glu His Leu Ala Asn Glu Leu Phe Asp Ser
 85 90 95
 Leu Val Ile Ser Phe Gly Asp Lys Ala Ser Lys Ile Asp Leu Glu Val
 100 105 110
 Glu Lys Glu Arg Pro Pro Val Pro Asn Leu Leu Asn Pro Ile Lys Phe
 115 120 125
 Thr Ile Ser Lys Glu Leu Cys Pro Ser Pro Val Leu Ser Ala
 130 135 140

<210>808

<211>452

<212>PRT

<213>Chlamydia pneumoniae

<400>808

Arg Ala Met Ser Glu Pro Arg Phe Val Cys Leu Ser Leu Gly Ser Asn
 1 5 10 15
 Leu Gly Asn Arg Phe Lys Asn Leu Gln Ile Ala Arg Thr Leu Leu Gly
 20 25 30
 Glu Gln Ala Val Leu Gly Leu Arg Ser Ser Val Ile Leu Glu Thr Glu
 35 40 45
 Ala Leu Leu Leu Pro Gly Ser Pro Pro Glu Trp Asp Leu Pro Tyr Phe
 50 55 60
 Asn Ser Val Leu Val Gly Glu Thr Thr Leu Ser Leu Arg Glu Leu Leu
 65 70 75 80
 Val Thr Ile Lys Gln Ile Glu Lys Val Val Gly Arg Ala Glu Glu Ser
 85 90 95
 Pro Pro Trp Ser Pro Arg Thr Ile Asp Val Asp Ile Leu Leu Tyr Gly
 100 105 110
 Asp Glu Ser Phe Cys Cys Asp His Thr Glu Ile Thr Ile Pro Leu Ser
 115 120 125
 Asn Leu Leu Ser Arg Pro Phe Leu Ile Ala Leu Ile Ala Ser Leu Cys
 130 135 140
 Pro Tyr Arg Arg Phe Cys Thr Gln Gly Ser Pro Tyr His Asn Phe Thr
 145 150 155 160

Phe Gly Glu Leu Ala His His Leu Pro Ser Pro Pro Gly Met Ile Arg
 165 170 175
 Arg Ser Leu Ser Pro Asp Thr Met Leu Met Gly Val Val Asn Val Thr
 180 185 190
 Asn Asp Ser Met Ser Asp Gly Gly Met Phe Leu Asp Pro Glu Lys Ala
 195 200 205
 Val Ala Gln Ala Glu Lys Leu Phe Thr Glu Gly Ala Ala Val Ile Asp
 210 215 220
 Phe Gly Ala Gln Ala Thr Asn Pro Lys Val Lys Gln Phe Leu Ser Val
 225 230 235 240
 Asp Gln Glu Trp Glu Arg Leu Glu Pro Val Leu Arg Leu Leu Lys Glu
 245 250 255
 Thr Trp Ser Asn Arg Lys Gln Tyr Pro Ile Ile Ser Leu Asp Thr Phe
 260 265 270
 Tyr Pro Glu Ile Ile Leu Arg Ala Met Asp Ile Tyr Pro Ile Gln Trp
 275 280 285
 Ile Asn Asp Val Ser Gly Gly Ser Gln Ser Met Ala Glu Val Ala Arg
 290 295 300
 Asp Cys Glu Leu Ser Leu Val Met Asn His Ser Ser Ser Leu Pro Val
 305 310 315 320
 Asp Pro Lys Asn Ile Leu Ser Phe Ser Val Pro Ile Gly Glu Gln Leu
 325 330 335
 Leu Ser Trp Gly Glu Lys Gln Leu Lys Met Phe Ser Asp Val Gly Leu
 340 345 350
 Asn Ala Asn Gln Val Ile Phe Asp Pro Gly Ile Gly Phe Gly Lys Gly
 355 360 365
 Ala Ala Gln Ser Leu Ala Thr Leu Tyr Glu Ile Ala Lys Phe Lys Arg
 370 375 380
 Leu Gly Cys Pro Ile Leu Ile Gly His Ser Arg Lys Ser Phe Leu Ser
 385 390 395 400
 Leu Phe Gly Asn His Asp Pro Lys Asp Arg Asp Trp Glu Thr Val Gly
 405 410 415
 Leu Ser Ile Leu Leu Gln Gln Gln Gly Val Asp Tyr Leu Arg Val His
 420 425 430
 Asn Val Ala Ala His Gln Lys Ala Leu Ser Val Ala Ala Cys Glu Ala
 435 440 445
 Cys Ala Pro Ile
 450

<210>809

<211>186

<212>PRT

<213>Chlamydia pneumoniae

<400>809

Val Lys Pro Val His Pro Ser Asn Phe Glu Asn Pro Leu Gly Val Glu
 1 5 10 15
 Met Cys Lys Asn Arg Gly Val Arg Gly Ile Val Ala Cys Asp Pro Arg
 20 25 30
 Gly Val Ile Gly Leu Glu Gly Lys Leu Pro Trp His Tyr Pro Glu Asp
 35 40 45
 Leu Gln Phe Phe Ser Glu Thr Ile Gln Lys Phe Pro Ile Val Met Gly
 50 55 60
 Arg Lys Thr Trp Glu Thr Leu Pro Arg Lys Tyr Phe Val Asp Arg Ala
 65 70 75 80
 Val Val Val Phe Ser His Glu Lys Arg Gln Gly Val His Gly Glu Ile
 85 90 95
 Trp Val Thr Ser Leu Glu Glu Phe Leu Leu Asp Leu Ser Ser Pro
 100 105 110
 Thr Phe Leu Ile Gly Gly Gly Glu Leu Tyr Ser Leu Phe Leu Glu Asn
 115 120 125
 Gln Ile Val Arg Asp Phe Phe Ile Ser His Ile Lys Lys Glu Tyr Ala
 130 135 140
 Gly Asp Thr Phe Phe Pro Leu Ser Leu Leu Glu Thr Trp Thr Lys Thr
 145 150 155 160
 Val Leu Arg Asp Thr Gln Lys Ile Thr Thr Cys Tyr Tyr Glu Asn His

165 170 175
His Ser Gln Asn Thr Lys Asn Ile Ser Leu
180 185

<210>810
<211>264
<212>PRT
<213>Chlamydia pneumoniae
<400>810

Arg His Gly Pro Lys Leu Cys Leu Glu Ile Pro Lys Arg Ser Gln Arg
1 5 10 15
Val Thr Met Lys Ile Thr Thr Val Lys Thr Pro Lys Ile Tyr Pro Tyr
20 25 30
Asp Asp Leu Tyr Ser Ile Leu Glu Ser Ser Leu Pro Lys Leu Asn Glu
35 40 45
Arg Ser Ile Val Val Ile Thr Ser Lys Ile Val Ser Leu Cys Glu Gly
50 55 60
Ala Val Val Glu Leu Glu Lys Val Ser Lys Asp Glu Leu Ile Lys Gln
65 70 75 80
Glu Ala Asp Ala Tyr Val Phe Val Glu Lys Tyr Gly Ile Tyr Leu Thr
85 90 95
Lys Lys Trp Gly Ile Leu Ile Pro Ser Ala Gly Ile Asp Glu Ser Asn
100 105 110
Val Glu Gly Tyr Phe Val Leu Tyr Pro Arg Asp Val Leu Leu Ser Val
115 120 125
Asn Thr Leu Gly Asp Trp Leu Arg Asn Phe Tyr His Leu Glu His Cys
130 135 140
Gly Ile Ile Ile Ser Asp Ser His Thr Thr Pro Leu Arg Arg Gly Thr
145 150 155 160
Met Gly Leu Gly Leu Cys Trp Asn Gly Phe Phe Pro Leu Tyr Asn Tyr
165 170 175
Val Gly Lys Pro Asp Cys Phe Gly Arg Ala Leu Lys Met Thr Tyr Ser
180 185 190
Asn Leu Leu Asp Gly Leu Ser Ala Ala Ala Val Leu Cys Met Gly Glu
195 200 205
Gly Asp Glu Gln Thr Pro Ile Ala Ile Ile Glu Glu Ala Pro Lys Ile
210 215 220
Thr Phe His Ser Ser Pro Thr Thr Leu Gln Asp Met Ser Thr Leu Ala
225 230 235 240
Ile Ala Glu Asp Glu Asp Leu Tyr Gly Pro Leu Leu Gln Ser Met Ala
245 250 255
Trp Glu Thr Pro Ala Pro Thr Ser
260

<210>811
<211>226
<212>PRT
<213>Chlamydia pneumoniae
<400>811

Gly Ile Met Thr Ser Trp Ile Glu Leu Leu Asp Lys Gln Ile Glu Asp
1 5 10 15
Gln His Met Leu Lys His Glu Phe Tyr Gln Arg Trp Ser Glu Gly Lys
20 25 30
Leu Glu Lys Gln Gln Leu Gln Ala Tyr Ala Lys Asp Tyr Tyr Leu His
35 40 45
Ile Lys Ala Phe Pro Cys Tyr Leu Ser Ala Leu His Ala Arg Cys Asp
50 55 60
Asp Leu Gln Ile Arg Arg Gln Ile Leu Glu Asn Leu Met Asp Glu Glu
65 70 75 80
Ala Gly Asn Pro Asn His Ile Asp Leu Trp Arg Gln Phe Ala Leu Ser
85 90 95
Leu Gly Val Ser Glu Glu Glu Leu Ala Asn His Glu Phe Ser Gln Ala
100 105 110
Ala Gln Asp Met Val Ala Thr Phe Arg Arg Leu Cys Asp Met Pro Gln
115 120 125
Leu Ala Val Gly Leu Gly Ala Leu Tyr Thr Tyr Glu Ile Gln Ile Pro

WO 99/27105

130 135 140
 Gln Val Cys Val Glu Lys Ile Arg Gly Leu Lys Glu Tyr Phe Gly Val
 145 150 155 160
 Ser Ala Arg Gly Tyr Ala Tyr Phe Thr Val His Gln Glu Ala Asp Ile
 165 170 175
 Lys His Ala Ser Glu Glu Lys Glu Met Leu Gln Thr Leu Val Gly Arg
 180 185 190
 Glu Asn Pro Asp Ala Val Leu Gln Gly Ser Gln Glu Val Leu Asp Thr
 195 200 205
 Leu Trp Asn Phe Leu Ser Ser Phe Ile Asn Ser Thr Glu Pro Cys Ser
 210 215 220
 Cys Lys
 225
 <210>812
 <211>361
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>812
 Met Glu Thr Lys Arg Ser Ile Tyr Met Asn Leu Pro Asp Arg Lys Lys
 1 5 10 15
 Ala Leu Glu Ala Val Ala Tyr Ile Glu Lys Gln Phe Gly Ala Gly
 20 25 30
 Ser Ile Met Ser Leu Gly Arg His Ser Ala Thr His Glu Ile Ser Thr
 35 40 45
 Ile Lys Thr Gly Ala Leu Ser Leu Asp Leu Ala Leu Gly Ile His Gly
 50 55 60
 Val Pro Lys Gly Arg Val Ile Glu Ile Phe Gly Pro Glu Ser Ser Gly
 65 70 75 80
 Lys Thr Thr Leu Ala Thr His Ile Val Ala Asn Ala Gln Lys Met Gly
 85 90 95
 Gly Val Ala Ala Tyr Ile Asp Ala Glu His Ala Leu Asp Pro Ser Tyr
 100 105 110
 Ala Ser Leu Ile Gly Val Asn Ile Asp Asp Leu Met Ile Ser Gln Pro
 115 120 125
 Asp Cys Gly Glu Asp Ala Leu Ser Ile Ala Glu Leu Leu Ala Arg Ser
 130 135 140
 Gly Ala Val Asp Val Ile Val Ile Asp Ser Val Ala Ala Leu Val Pro
 145 150 155 160
 Lys Ser Glu Leu Glu Gly Asp Ile Gly Asp Val His Val Gly Leu Gln
 165 170 175
 Ala Arg Met Met Ser Gln Ala Leu Arg Lys Leu Thr Ala Thr Leu Ser
 180 185 190
 Arg Ser Gln Thr Cys Ala Val Phe Ile Asn Gln Ile Arg Glu Lys Ile
 195 200 205
 Gly Val Ser Phe Gly Asn Pro Glu Thr Thr Thr Gly Gly Arg Ala Leu
 210 215 220
 Lys Phe Tyr Ser Ser Ile Arg Leu Asp Ile Arg Arg Ile Gly Ser Ile
 225 230 235 240
 Lys Gly Ser Asp Asn Ser Asp Ile Gly Asn Arg Ile Lys Val Lys Val
 245 250 255
 Ala Lys Asn Lys Leu Ala Pro Pro Phe Arg Ile Ala Glu Phe Asp Ile
 260 265 270
 Leu Phe Asn Glu Gly Ile Ser Ser Ala Gly Cys Ile Leu Asp Leu Ala
 275 280 285
 Val Glu Tyr Asn Ile Ile Glu Lys Lys Gly Ser Trp Phe Asn Tyr Gln
 290 295 300
 Glu Lys Lys Leu Gly Gln Gly Arg Glu Phe Val Arg Glu Glu Leu Lys
 305 310 315 320
 Arg Asn Arg Lys Leu Phe Glu Glu Ile Glu Lys Arg Ile Tyr Asp Val
 325 330 335
 Ile Ala Ala Asn Lys Thr Pro Ser Val His Ala Asn Glu Thr Pro Gln
 340 345 350
 Glu Val Pro Ala Gln Thr Val Glu Ala
 355 360

<210>813

<211>180

<212>PRT

<213>Chlamydia pneumoniae

<400>813

Met Thr Asp Pro Lys Ile Glu Lys Ser Ala Leu Arg Lys Leu Phe Ile
1 5 10 15
Ser Ile Arg Arg Asp Leu Ser Glu Glu Arg Lys His Glu Ala Ser Ser
20 25 30
Ala Val Ala Ser Phe Val Arg Ser Phe Ser Lys Glu Ser Val Val Leu
35 40 45
Ser Phe Val Ser Phe Asn His Glu Ile Asp Met Gln Glu Ala Asn Arg
50 55 60
Ile Leu Ile Gln Lys Cys Thr Leu Ala Leu Pro Lys Ile Asp Gln Glu
65 70 75 80
Asn Leu Tyr Pro Val Leu Ile Pro Ser Ile Asp Asp Leu Ile Ser Val
85 90 95
Val His Pro Lys Asp Pro Phe Ser Lys Gln Thr Pro Ile Ser Ser Asp
100 105 110
Lys Ile Thr His Val Leu Val Pro Gly Leu Ala Phe Asp Gln Gln Gly
115 120 125
Tyr Arg Leu Gly Tyr Gly His Gly Phe Tyr Asp Arg Trp Leu Ala Gln
130 135 140
His Pro Tyr Pro Ser Ile Arg Thr Ile Gly Ile Gly Tyr Cys Glu Gln
145 150 155 160
Lys Ile Asp Arg Leu Pro Gln Glu Ser His Asp Ile Pro Leu Ser Gln
165 170 175
Ile Tyr Leu Cys
180

<210>814

<211>428

<212>PRT

<213>Chlamydia pneumoniae

<400>814

Met Asp Ile Lys Lys Leu Phe Cys Leu Phe Leu Cys Ser Ser Leu Ile
1 5 10 15
Ala Met Ser Pro Ile Tyr Gly Lys Thr Gly Asp Tyr Glu Lys Leu Thr
20 25 30
Leu Thr Gly Ile Asn Ile Ile Asp Arg Asn Gly Leu Ser Glu Thr Ile
35 40 45
Cys Ser Lys Glu Lys Leu Lys Lys Tyr Thr Lys Val Asp Phe Leu Ala
50 55 60
Pro Gln Pro Tyr Gln Lys Val Met Arg Met Tyr Lys Asn Lys Arg Gly
65 70 75 80
Asp Asn Val Ser Cys Leu Thr Ala Tyr His Thr Asn Gly Gln Ile Lys
85 90 95
Gln Tyr Leu Glu Cys Leu Asn Asn Arg Ala Tyr Gly Arg Tyr Arg Glu
100 105 110
Trp His Val Asn Gly Asn Ile Lys Ile Gln Ala Glu Val Ile Gly Gly
115 120 125
Ile Ala Asp Leu His Pro Ser Ala Glu Ser Gly Trp Leu Phe Asp Gln
130 135 140
Thr Thr Phe Ala Tyr Asn Asp Glu Gly Ile Leu Glu Ala Ala Ile Val
145 150 155 160
Tyr Glu Lys Gly Leu Leu Glu Gly Ser Ser Val Tyr Tyr His Thr Asn
165 170 175
Gly Asn Ile Trp Lys Glu Cys Pro Tyr His Lys Gly Val Pro Gln Gly
180 185 190
Lys Phe Leu Thr Tyr Thr Ser Ser Gly Lys Leu Leu Lys Glu Gln Asn
195 200 205
Tyr Gln Gln Gly Lys Arg His Gly Leu Ser Ile Arg Tyr Ser Glu Asp
210 215 220
Ser Glu Glu Asp Val Leu Ala Trp Glu Glu Tyr His Glu Gly Arg Leu
225 230 235 240

Leu Lys Ala Glu Tyr Leu Asp Pro Gln Thr His Glu Ile Tyr Ala Thr
 245 250 255
 Ile His Glu Gly Asn Gly Ile Gln Ala Ile Tyr Gly Lys Tyr Ala Val
 260 265 270
 Ile Glu Thr Arg Ala Phe Tyr Arg Gly Glu Pro Tyr Gly Lys Val Thr
 275 280 285
 Arg Phe Asp Asn Ser Gly Thr Gln Ile Val Gln Thr Tyr Asn Xaa Leu
 290 295 300
 Gln Gly Ala Lys His Gly Glu Glu Phe Ser Phe Ile Leu Arg Gln Gly
 305 310 315 320
 Asn Pro Ser Cys Phe Leu Asn Trp His Glu Gly Ile Leu Asn Gly Ile
 325 330 335
 Val Lys Thr Trp Tyr Pro Gly Gly Thr Leu Glu Ser Cys Lys Glu Leu
 340 345 350
 Val Asn Asn Lys Lys Ser Gly Leu Leu Thr Ile Tyr Tyr Pro Glu Gly
 355 360 365
 Gln Ile Met Ala Thr Glu Glu Tyr Asp Asn Asp Leu Leu Ile Lys Gly
 370 375 380
 Glu Tyr Phe Arg Pro Gly Asp Arg His Pro Tyr Ser Lys Ile Asp Arg
 385 390 395 400
 Gly Cys Gly Thr Ala Val Phe Phe Ser Ser Ala Gly Thr Ile Thr Lys
 405 410 415
 Lys Ile Pro Tyr Gln Asp Gly Lys Pro Leu Leu Asn
 420 425

<210>815

<211>151

<212>PRT

<213>Chlamydia pneumoniae

<400>815

Thr Thr Ile Tyr Ile Lys Leu Leu Gly Arg Leu Met Lys Lys Trp Ile
 1 5 10 15
 Ser Ile Leu Ile Leu Ser Phe Leu Ser Leu Ser Ile Leu Pro Val
 20 25 30
 Leu Ala Ile Thr Ile Asn His Val Lys Ile Ser Gln Arg Trp Ser Asp
 35 40 45
 Leu Asn Ser Gln Ile Leu Thr Leu Lys Val Ile Arg Asp His Glu Asp
 50 55 60
 Gln Val Ile Lys His Asn Ala Arg Ile Ser Lys Asp Arg Asn Asn Leu
 65 70 75 80
 Ser Ile Glu Ser Leu Asn Ala Ser Cys Lys Gln Leu Arg Pro Leu Ser
 85 90 95
 Lys Glu Arg Glu Arg Leu Asn Lys Leu Asn Ser Asn Ser Leu Leu Ala
 100 105 110
 Gln Ser Lys Glu Val Trp Glu Arg Lys Arg Ala Leu Glu Lys Ser Asn
 115 120 125
 His Gln Leu Val Trp Asn Cys Glu Gln Met His Asn Asp Phe Ala Phe
 130 135 140
 Cys Ala Ser Arg Ala Ser Tyr
 145 150

<210>816

<211>464

<212>PRT

<213>Chlamydia pneumoniae

<400>816

Ala Met Asn Phe Lys Leu Pro Val Tyr His Ile Gly Leu Thr Lys Ala
 1 5 10 15
 Glu Asn Asn Thr Ile Lys Ile Ala Ile Leu Gln Lys Thr Cys Lys Gly
 20 25 30
 Trp Ile Val Cys His Cys Glu Gln Ile Pro Glu Gly Lys Thr Trp Ser
 35 40 45
 Leu Pro Lys Lys Tyr Phe Ala Ala Pro Thr Thr Phe Ser Leu Gln Gly
 50 55 60
 Ser Asp Ile Leu Val Lys Ser Ser Ser Ser Ser Leu Lys Asn Arg Lys
 65 70 75 80

Asn	Ile	Leu	Lys	Val	Ala	Leu	Thr	Asn	Leu	Glu	Ala	Ser	Leu	Ala	Leu	85	90	95
Pro	Trp	Glu	Ser	Leu	Ile	Val	Gln	Pro	Gln	Leu	Gly	Lys	Pro	Thr	Asp	100	105	110
Arg	Gly	Glu	Thr	Pro	Leu	Thr	Leu	Trp	Ile	Ala	Gln	Lys	Asn	Thr	Leu	115	120	125
Lys	Lys	Glu	Leu	Ser	Phe	Leu	Ser	Gln	Ala	Gln	Ile	Phe	Pro	Asp	Lys	130	135	140
Leu	Ser	Cys	Arg	Ala	Ala	Asp	Ile	Phe	Phe	Leu	Ala	Glu	Gln	Ser	Pro	145	150	155
Leu	Lys	Ser	Leu	Pro	Ala	Tyr	Leu	Leu	Ile	Tyr	Gly	Gly	Ser	Glu	Glu	165	170	175
Val	Thr	Cys	Ile	Phe	Val	Lys	Asn	His	Ala	Ile	Ala	Val	Ala	Arg	Ser	180	185	190
Phe	Ser	Asn	His	Ser	Thr	Lys	Lys	Ser	Cys	Asp	Asp	Ile	His	Ala	Thr	195	200	205
Leu	Gln	Tyr	Ile	Gln	Glu	Thr	Phe	Pro	Gln	Thr	Val	Leu	Pro	Ala	Ile	210	215	220
His	Val	Ala	Gln	Ile	Ser	Pro	Asn	Leu	Gln	Xaa	Ile	Leu	Glu	Gln	Lys	225	230	235
Leu	Ser	Leu	Pro	Leu	Val	Val	Cys	Gln	Ser	Met	Thr	Tyr	Gly	Val	Glu	245	250	255
Asp	Glu	Asp	Trp	Glu	Ile	Tyr	Gly	Asp	Thr	Ile	Ala	Ala	Ala	His	His	260	265	270
Gly	Ala	Ser	Arg	Arg	Pro	Leu	Thr	Phe	Pro	Tyr	Asp	Ala	Thr	Ser	Val	275	280	285
Ser	Pro	Ala	Ala	Gln	Lys	His	Trp	Leu	Leu	Arg	Ser	Ser	Leu	Leu	Ile	290	295	300
Gly	Lys	Tyr	Ala	Leu	Met	Ala	Thr	Val	Val	Val	Ser	Leu	Gly	Ser	Val	305	310	315
Leu	Lys	Leu	Lys	Ser	Leu	Ser	Ser	Ser	Ala	Ser	Asn	His	Phe	Ala	Phe	325	330	335
Ala	Cys	Pro	Glu	Glu	Gly	Val	Leu	Pro	Arg	Ser	Leu	Lys	Ala	Ala	Glu	340	345	350
Lys	Thr	Val	Lys	Ala	Ile	Gly	Lys	Lys	Asn	Ser	Ala	Ser	Asn	Tyr	Pro	355	360	365
Leu	Leu	Pro	Thr	Ile	Pro	Thr	Ser	Glu	Gln	Thr	Leu	Lys	Phe	Leu	Leu	370	375	380
Ala	Leu	Gly	Lys	Ser	Ser	Pro	Ser	Ile	Lys	Phe	Ser	Tyr	Phe	Ser	Tyr	385	390	395
Thr	Met	Thr	Ser	Tyr	Pro	Ser	Lys	Asp	Asn	Pro	Ser	Leu	Pro	Tyr	Ser	405	410	415
Ala	Leu	Val	Glu	Val	Lys	Gly	Gln	Gly	Gln	Pro	Glu	Asp	Ile	Pro	Gln	420	425	430
Phe	Leu	Lys	Lys	Ile	Ser	Ser	His	Pro	Lys	Leu	Gln	His	Val	Ser	Glu	435	440	445
Ser	Leu	Glu	Asp	Gln	Arg	Ser	Phe	Lys	Leu	Gln	Phe	Thr	Leu	Ser	Ser	450	455	460

<210>817

<211>130

<212>PRT

<213>Chlamydia pneumoniae

<400>817

Met	Ala	Ala	Pro	Ile	Phe	Ile	Lys	Asn	Ile	Leu	Leu	Arg	Ser	Ser	Ile	1	5	10	15
Val	Tyr	Ala	Pro	Leu	Ala	Gly	Phe	Ser	Asp	Tyr	Pro	Tyr	Arg	Cys	Met	20	25	30	
Ser	Ala	Leu	Tyr	Gln	Pro	Gly	Leu	Met	Phe	Cys	Glu	Met	Val	Lys	Val	35	40	45	
Glu	Gly	Ile	Leu	Tyr	Ala	Pro	Glu	Arg	Thr	Ser	Lys	Leu	Leu	Asp	Tyr	50	55	60	
Asn	Glu	Asn	Met	Arg	Pro	Ile	Gly	Ala	Gln	Leu	Cys	Gly	Ser	Asn	Pro	65	70	75	80
Glu	Thr	Ser	Gly	Glu	Ala	Ala	Lys	Ile	Leu	Glu	Gly	Leu	Gly	Phe	Asp				

85 90 95
 Leu Ile Asp Leu Asn Cys Gly Cys Pro Thr Asp Lys Ile Thr Lys Asp
 100 105 110
 Gly Ser Gly Ser Gly Leu Phe Glu Asp Ala Arg Ala Tyr Trp Glu Asp
 115 120 125
 Phe Arg
 130
 <210>818
 <211>235
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>818
 Ile Val Asp Val Leu Gln Ile Lys Ser Pro Lys Met Ala Val Gly Gln
 1 5 10 15
 Val Phe Leu Lys Thr Pro Glu Leu Ile Gly Arg Ile Leu Asp Lys Ile
 20 25 30
 Ile Asn Ser Val Ser Ile Pro Val Thr Val Lys Ile Arg Ser Gly Trp
 35 40 45
 Asp Met Glu His Ile Asn Val Glu Asp Thr Val Arg Ile Ile Arg Asp
 50 55 60
 Ala Gly Ala Ser Ala Val Phe Val His Gly Arg Thr Arg Ala Gln Gly
 65 70 75 80
 Tyr His Gly Pro Ser Lys Gln Glu Tyr Ile Ser Arg Ala Lys Ala Ala
 85 90 95
 Ala Gly Lys Glu Phe Pro Val Phe Gly Asn Gly Asp Ile Phe Ser Pro
 100 105 110
 Glu Ala Ala Gln Ala Met Leu Thr Thr Gly Cys Asp Gly Val Leu Val
 115 120 125
 Ala Arg Gly Thr Leu Gly Ala Pro Trp Ile Gly Lys Gln Ile Gln Asp
 130 135 140
 Tyr Leu Thr Thr Gly Ser Tyr Glu Lys Ile Pro Phe Ile Lys Arg Lys
 145 150 155 160
 Ala Ala Phe Leu Glu His Met Arg Leu Val Glu Asp Tyr Tyr Gln Ser
 165 170 175
 Glu Thr Lys Phe Leu Ser Glu Thr Arg Lys Leu Cys Gly His Tyr Leu
 180 185 190
 Ile Ser Ala Ala Lys Val Arg Phe Leu Arg Ser Ser Leu Ala Lys Ala
 195 200 205
 Thr Ser Tyr Gln Glu Val Tyr Gln Leu Val Asn Asp Tyr Glu Glu Ala
 210 215 220
 Asp Asp Ser Ser Leu Glu Thr Phe Val Lys Cys
 225 230 235
 <210>819
 <211>827
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>819
 Met Lys Lys Ser Leu Ile Ile Val Glu Ser Pro Ala Lys Ile Lys Thr
 1 5 10 15
 Leu Gln Lys Leu Leu Gly Ser Glu Phe Val Phe Ala Ser Ser Ile Gly
 20 25 30
 His Ile Val Asp Leu Pro Ala Lys Glu Phe Gly Ile Asp Val Asp His
 35 40 45
 Asp Phe Glu Pro Gln Tyr Gln Val Leu Pro Asp Lys Gln Glu Val Ile
 50 55 60
 Asn His Ile Arg Lys Leu Ala Ala Lys Cys Glu Lys Val Tyr Leu Ser
 65 70 75 80
 Pro Asp Pro Asp Arg Glu Gly Glu Ala Ile Ala Trp His Ile Ala Asn
 85 90 95
 Gln Leu Pro Asp Ser Pro Leu Ile Gln Arg Val Ser Phe Asn Ala Ile
 100 105 110
 Thr Lys Asn Ala Val Thr Glu Ala Leu Lys His Pro Arg Thr Ile Asp
 115 120 125
 Met Ala Leu Val Asn Ala Gln Gln Ala Arg Arg Leu Leu Asp Arg Ile

130	Val Gly Tyr Lys Ile Ser	135	Pro Ile Leu Ser Arg	140	Lys Leu Gln Gln Arg
145	Ser Gly Ile Ser Ala Gly	150	Arg Val Gln Ser Val	155	Ala Leu Lys Leu Val
		165		170	
Val Asp Arg Glu Lys Ala Ile Asp		185	Ala Phe Val Pro Val		Glu Tyr Trp
		190			
Asn Leu Arg Val Leu Met Gln Asp		200	Pro Lys Thr Thr		Lys Thr Phe Trp
		205			
Ala His Leu Tyr Ala Val Gln Gly		215	Lys Lys Trp Glu		Lys Glu Ile Pro
		220			
Glu Gly Lys Thr Glu Asn Asp Val		230	Leu Leu Ile Asn		Ser Glu Glu Lys
		235			
Ala Arg His Tyr Ala Glu Leu Leu		245	Glu Lys Ser Ser		Tyr Thr Ile Thr
		250			
Arg Val Glu Ala Lys Ala Lys Arg		260	Arg Phe Ala Pro		Pro Pro Phe Ile
		265			
Thr Ser Thr Leu Gln Gln Glu Ala		275	Ser Arg His Phe		Arg Phe Ser Ala
		280			
Ser Arg Thr Met Ser Ile Ala Gln		290	Thr Leu Tyr Glu		Gly Val Asp Leu
		295			
Asp Ser Glu Asp Ser Thr Gly Leu		305	Ile Thr Tyr Met		Arg Thr Asp Ser
		310			
Val Arg Val Asp Pro Glu Ala Leu		325	Thr Thr Val Arg		Glu Tyr Ile Gln
		330			
Gln Thr Phe Gly Lys Glu Tyr Leu		340	Pro Glu Lys Ala		Asn Val Tyr Thr
		345			
Thr Lys Lys Met Thr Gln Asp Ala		355	His Glu Ala Ile		Arg Pro Thr Asp
		360			
Ile Asn Leu Thr Pro Asp Lys Leu		370	Lys Asn Lys Leu		Ser Asp Asp Gln
		375			
Phe Lys Val Tyr Asn Leu Ile Trp		385	Lys Arg Phe Val		Ala Ser Gln Ile
		390			
Thr Pro Ala Ile Tyr Asp Thr Leu		405	Ala Val Gln Ile		Thr Thr Asp Thr
		410			
Glu Ile Asp Leu Arg Ala Ser Gly		420	Ser Leu Leu Lys		Phe Lys Gly Phe
		425			
Leu Ala Val Tyr Glu Glu Lys Gln		435	Asp Asp Glu Asn		Asp Gln Glu Glu
		440			
Asp His Pro Leu Pro Pro Leu His		450	Ala Gln Asp Ala		Leu Ile Lys Glu
		455			
Glu Val Ser Gln Glu Gln Ala Phe		465	Thr Lys Pro Leu		Pro Arg Phe Thr
		470			
Glu Ala Ser Leu Val Lys Glu Leu		485	Glu Lys Ser Gly		Ile Gly Arg Pro
		490			
Ser Thr Tyr Ala Thr Ile Met Asn		500	Lys Ile Gln Ser		Arg Glu Tyr Thr
		505			
Thr Lys Glu Asn Gln Arg Leu Arg		515	Pro Thr Glu Leu		Gly Lys Ile Ile
		520			
Ser Gln Phe Leu Glu Thr Asn Phe		530	Pro Arg Ile Met		Asp Ile Gly Phe
		535			
Thr Ala Leu Met Glu Asp Glu Leu		545	Glu Leu Ile Ala		Asp Asn Lys Lys
		550			
Pro Trp Lys Leu Leu Leu Gln Glu		565	Phe Trp Thr Thr		Phe Leu Pro Val
		570			
Val Ile Thr Ala Glu Lys Glu Ala		580	Val Ile Pro Arg		Ile Leu Thr Asn
		585			
Ile Glu Cys Ser Lys Cys His Lys		595	Gly Lys Leu Val		Lys Ile Trp Ser
		600			
Lys Asn Ser Tyr Phe Tyr Gly Cys		610	Ser Glu Tyr Pro		Glu Cys Asp Tyr
		615			
Arg Thr Ser Glu Glu Glu Leu Ala		625	Phe Asn Lys Glu		Asp Tyr Ala Glu
		630			
Asp Thr Pro Trp Asp Ser Pro Cys		635	Pro Leu Cys Gly		Gly Val Met Lys

645 650 655
 Val Arg His Gly Arg Tyr Gly Thr Phe Leu Gly Cys Glu Lys Tyr Pro
 660 665 670
 Glu Cys Arg Gly Thr Ile Ser Ile His Lys Lys Gly Glu Glu Ile Glu
 675 680 685
 Gln Glu Glu Pro Ile Pro Cys Pro Ala Ile Gly Cys Asn Gly Lys Ile
 690 695 700
 Phe Lys Lys Arg Ser Arg Tyr Asn Lys Ile Phe Tyr Ser Cys Ser Glu
 705 710 715 720
 Tyr Pro Glu Cys Ser Val Ile Gly Asn Ser Ile Asp Ala Val Ile Thr
 725 730 735
 Lys Tyr Ser Gly Thr Glu Lys Ile Pro Tyr Lys Lys Lys Thr Pro Thr
 740 745 750
 Lys Lys Lys Ser Ser Ala Lys Thr Thr Lys Ala Ala Lys Thr Pro Ser
 755 760 765
 Lys Lys Gly Lys Ala Lys Ser Ser Val Lys Lys Ser Ser Glu Lys Lys
 770 775 780
 Thr Gly Pro Leu Phe Leu Pro Ser Pro Asp Leu Ala Lys Met Ile Gly
 785 790 795 800
 Asn Glu Xaa Arg Ile Ser Gly Arg Ser Asn Gln Lys Asn Leu Gly Leu
 805 810 815
 His Gln Gly Thr Ser Ile Thr Gly Thr Arg Lys
 820 825

<210>820

<211>270

<212>PRT

<213>Chlamydia pneumoniae

<400>820

Lys Pro Arg Thr Arg Asn Val Glu Lys Leu Glu Phe Val Thr Ser Leu
 1 5 10 15
 Ser Ser Pro Asp Asp Leu Ile Thr Phe Asn Lys Gln Gly Leu Ile
 20 25 30
 Ala Gly Pro Glu Glu Glu Lys Val Ala Phe Leu Val Arg Ser Asn Ala
 35 40 45
 Met Leu Asp Ala Gly Pro Glu Thr Pro Ala Ser Phe Pro Glu Ser Leu
 50 55 60
 Arg Glu Gln Phe Asp Ile Phe Pro Glu Tyr Val Glu Val Leu Tyr Ser
 65 70 75 80
 Asn Glu Gly Leu Asp Val Trp Glu Ala Gly Cys Thr Trp Ile Leu Asn
 85 90 95
 Asn Glu Val Thr Ile Gln Leu Arg Lys His His Arg Lys Ala Ser Arg
 100 105 110
 Trp Leu Gly Met Tyr Ser Arg Asp Glu Val Leu Ala His Glu Ala Val
 115 120 125
 His Ala Val Arg Met Lys Phe His Glu Pro Val Phe Glu Glu Val Leu
 130 135 140
 Ala Tyr Gln Thr Ser Arg Trp Gly Trp Arg Arg Phe Phe Gly Pro Leu
 145 150 155 160
 Phe Arg Ser Pro Gly Glu Ser Tyr Leu Leu Leu Phe Phe Thr Ile Leu
 165 170 175
 Gly Leu Gly Ile Ser Leu Trp Tyr Pro Ala Gly Ile Leu Ile Met Leu
 180 185 190
 Val Leu Pro Met Tyr Phe Leu Met Arg Leu Cys Met Ala Gln Ser Tyr
 195 200 205
 Leu Tyr Arg Ala Met Lys Lys Ile Arg Lys Met Leu Gly Val Pro Pro
 210 215 220
 Leu Trp Val Leu Leu Arg Leu Thr Asp Lys Glu Ile Lys Met Phe Ala
 225 230 235 240
 Lys Glu Pro Ile Pro Val Leu Glu His Tyr Ala Arg Lys Arg Lys Leu
 245 250 255
 Glu Asn Val Arg Trp Lys Gln Ile Tyr Gln Ser Tyr Phe Val
 260 265 270

<210>821

<211>456

<212>PRT

<213>Chlamydia pneumoniae

<400>821

Ile Phe Lys Gly Asn Ser Lys Arg Leu Tyr Asp Ser Ser Ala Leu Asp
1 5 10 15
Met Phe Gln Gln Lys Gln Lys Leu Ser Leu Lys Tyr Leu Pro Ser Leu
20 25 30
Arg Met Gln Gln Gly Leu Gln Met Leu Gln Ser Pro Leu Thr Glu Leu
35 40 45
Ser Ser Tyr Val Val Gln Glu Ile Ile Asp Asn Pro Phe Phe Asp Leu
50 55 60
Ser Ser Leu Glu Glu Glu Glu Trp Ser Pro Cys Tyr Arg Pro Thr Asn
65 70 75 80
Ser Thr Phe Ser Tyr Leu Asn Gln Thr Pro Gly Pro Gln Glu Ser Leu
85 90 95
Tyr Thr Arg Leu Leu Pro Gln Ile Glu Glu Ala Phe Ser Thr Ala Glu
100 105 110
Glu Arg Phe Ile Ala His Gln Ile Ala Gly Asn Leu Ser Asp Glu Gly
115 120 125
Leu Phe Leu Arg Asn Pro Glu Asp Phe Ala Gln Glu Leu Glu Leu Pro
130 135 140
Leu Glu Lys Ile His Lys Val Trp Asp Thr Ile Gln Asn Leu Ser Pro
145 150 155 160
Glu Gly Ile Ala Ser Pro Ser Leu Gln Ser Tyr Trp Met Lys Leu Leu
165 170 175
Arg Asn Ser Ser His Gln Gln Ala Tyr Ser Ile Val Arg Asp Cys Tyr
180 185 190
Pro Leu Met Thr Asn Cys Glu Phe Ala Pro Ile Met Lys Lys Phe Ser
195 200 205
Leu Ser Leu Ser Glu Leu Arg Asn Ile Leu Lys Lys Ala Leu Gly Ser
210 215 220
Ile Pro Trp Cys Pro Ala Ala Ala Cys Thr Val Lys Pro Met Val Ser
225 230 235 240
Thr Pro Leu Pro Asp Ile Tyr Leu Phe Tyr Ser Ser Gly Ser Trp Lys
245 250 255
Ile Glu Val Ser Thr Arg Gly Leu Pro Ser Ile Lys Leu Asn Lys Glu
260 265 270
Thr Phe His Phe Tyr Glu His Leu Pro Lys Glu Glu Gln Lys Asn Leu
275 280 285
Ser Gln Gln Ile Leu Ser Ala Lys Trp Leu Ile Lys Asn Leu Arg Lys
290 295 300
Arg Glu Gln Thr Leu Leu Gln Val Met Glu Thr Leu Leu Pro Lys Gln
305 310 315 320
Glu Asp Phe Leu Leu Gly Lys Ile Pro Ala Pro Tyr Pro Leu Gly Ile
325 330 335
Lys Asp Leu Ala Glu Asp Leu Ser Phe His Glu Ser Thr Ile Phe Arg
340 345 350
Ala Ile Glu Asn Lys Ala Val Ala Ala Pro Ile Gly Ile Phe Pro Leu
355 360 365
Lys His Leu Phe Pro Arg Gly Ile His Gln Asp Ser Ser His Ser Lys
370 375 380
Glu Asn Val Leu Gln Trp Ile Arg Gln Trp Ile Ala Thr Glu Gln Thr
385 390 395 400
Pro Leu Ser Asp Ser Val Ile Ser Asp Arg Ile Thr Ala Lys Gly Ile
405 410 415
Pro Cys Ala Arg Arg Thr Val Ala Lys Tyr Arg Ala Gln Leu Lys Ile
420 425 430
Leu Pro Ala Asn Lys Arg Lys Lys Leu Phe Tyr Ile Arg Ser Ser Asn
435 440 445
Ser His Phe Arg Asp Arg Gln Phe
450 455

<210>822

<211>644

<212>PRT

<213>Chlamydia pneumoniae

<400>822

Lys Leu Gly Leu Ile Met Thr Cys Ile Ser Glu Leu Asn Glu Ala Gln
 1 5 10 15
 Arg Lys Ala Val Thr Ala Pro Leu Asn Pro Val Leu Val Leu Ala Gly
 20 25 30
 Ala Gly Ala Gly Lys Thr Arg Val Val Thr Tyr Arg Ile Leu His Leu
 35 40 45
 Ile Asn Gln Gly Ile Ala Pro Arg Glu Ile Leu Ala Val Thr Phe Thr
 50 55 60
 Asn Lys Ala Ala Arg Glu Leu Lys Glu Arg Ile Val Asn Gln Cys Ala
 65 70 75 80
 Ser Thr Asn Glu Phe Asp Val Pro Met Val Cys Thr Phe His Ser Leu
 85 90 95
 Gly Val Phe Ile Leu Arg Arg Ser Ile Asn Leu Leu Asn Arg Glu Asn
 100 105 110
 Asn Phe Thr Ile Tyr Asp Gln Ser Asp Ala Glu Lys Leu Ile Lys His
 115 120 125
 Ala Leu Gln Gln His Asn Leu Lys Pro Asn Leu Ala Ser Lys Ile Gln
 130 135 140
 Ala His Val Ser Gln Ala Lys Asn Arg Leu Leu Phe Pro Glu Asp Leu
 145 150 155 160
 Asp Pro Asn Asp Tyr Ile Asp Pro Val Val Ser Ile Tyr Gln Glu Tyr
 165 170 175
 Gln Lys Lys Leu Ile Glu Ala Asn Ala Leu Asp Phe Asp Asp Leu Leu
 180 185 190
 Phe Leu Thr Val Arg Leu Leu Arg Glu Ser Pro Glu Ala Gln Glu Leu
 195 200 205
 Tyr Asn Gln Leu Trp Lys Ala Leu Leu Ile Asp Glu Tyr Gln Asp Thr
 210 215 220
 Asn His Ala Gln Tyr Thr Leu Met Gln Leu Leu Ser Lys Gln His Arg
 225 230 235 240
 Asn Val Phe Ala Val Gly Asp Pro Asp Gln Ser Ile Tyr Ser Trp Arg
 245 250 255
 Gly Ala Asn Ile His Asn Ile Leu Asn Phe Glu Asn Asp Tyr Pro Asn
 260 265 270
 Ala Lys Val Leu Cys Leu Glu Glu Asn Tyr Arg Ser Tyr Gly Asn Ile
 275 280 285
 Leu Asn Ala Ala Asn Ala Leu Ile Lys Asn Asn Ala Ser Arg Leu Glu
 290 295 300
 Lys Glu Leu Arg Ser Val Lys Gly Pro Gly Glu Lys Ile Arg Leu Phe
 305 310 315 320
 Leu Gly Ser Thr Asp Arg Glu Glu Ala Asp Phe Val Ala Ala Glu Ile
 325 330 335
 Leu Gln Leu His Arg Val Gly Asn Ile Lys Leu Arg Asp Ile Cys Ile
 340 345 350
 Phe Tyr Arg Thr Asn Ser Gln Ser Arg Thr Phe Glu Asp Ala Leu Leu
 355 360 365
 Arg Arg Arg Ile Pro Tyr Glu Ile Ile Gly Gly Leu Ser Phe Tyr Lys
 370 375 380
 Arg Lys Glu Ile Gln Asp Ile Leu Ala Phe Leu Arg Ile Phe Ile Ser
 385 390 395 400
 Lys Ser Asp Ile Val Ala Phe Asp Arg Thr Val Asn Leu Pro Lys Arg
 405 410 415
 Gly Ile Gly Ser Thr Thr Ile Phe Ala Leu Thr Gln Tyr Ala Ile Ala
 420 425 430
 Gln Gly Leu Pro Ile Leu Lys Ala Cys Gln Gln Ala Leu Asp Thr Lys
 435 440 445
 Asp Val Lys Leu Ser Lys Lys Gln Gln Glu Gly Leu Gln Glu Tyr Leu
 450 455 460
 Ala Leu Phe Pro Gln Ile Glu His Ala Tyr Asn Thr Leu Ser Leu Arg
 465 470 475 480
 Asp Phe Ile Glu Ser Val Val Arg Ile Thr Gly Tyr Leu Glu Ile Leu
 485 490 495

Lys Glu Asp Ala Asp Thr Phe Lys Asp Arg Lys Ser Asn Leu Glu Glu
 500 505 510
 Leu Tyr His Lys Ala Leu Glu Ser Glu Gln Gln Asn Pro Lys Thr His
 515 520 525
 Leu Glu Leu Phe Leu Asp Asp Leu Ala Leu Lys Gly Ser Asp Asp Asp
 530 535 540
 Leu Asn Leu Thr Ala Asp Arg Val Asn Leu Met Thr Leu His Asn Gly
 545 550 555 560
 Lys Gly Leu Glu Phe Arg Val Ser Phe Leu Val Gly Leu Glu Glu Gln
 565 570 575
 Leu Leu Pro His Ala Asn Ser Leu Gly Gly Thr Tyr Glu Asn Ile Glu
 580 585 590
 Glu Glu Arg Arg Leu Cys Tyr Val Gly Ile Thr Arg Ala Gln Asp Leu
 595 600 605
 Leu Tyr Leu Thr Ala Ala Gln Val Arg Ser Leu Trp Gly Thr Val Arg
 610 615 620
 Met Met Lys Pro Ser Arg Phe Leu Lys Glu Ile Pro Lys Asp Tyr Met
 625 630 635 640
 Ile Gln Val Arg

<210>823

<211>236

<212>PRT

<213>Chlamydia pneumoniae

<400>823

Met Gln Asn Ala Thr Ile Asp Gln Leu Pro Val Ser Trp Gln Glu Gln
 1 5 10 15
 Leu Pro Leu Cys Trp Arg Glu Gln Leu Lys Glu Glu Trp Ser Lys Pro
 20 25 30
 Tyr Met Gln Gln Leu Leu Ile Phe Leu Lys Gln Glu Tyr Lys Glu His
 35 40 45
 Thr Val Tyr Pro Glu Glu Asn Cys Val Phe Ser Ala Leu Arg Ser Thr
 50 55 60
 Pro Phe Asp Gln Val Arg Val Val Ile Leu Gly Gln Asp Pro Tyr Pro
 65 70 75 80
 Gly Lys Gly Gln Ala His Gly Leu Ser Phe Ser Val Pro Glu Gly Gln
 85 90 95
 Arg Leu Pro Pro Ser Leu Ile Asn Ile Phe Arg Glu Leu Lys Thr Asp
 100 105 110
 Leu Gly Ile Glu Asn His Lys Gly Cys Leu Gln Ser Trp Ala Asn Gln
 115 120 125
 Gly Ile Leu Leu Leu Asn Thr Val Leu Thr Val Arg Ala Gly Glu Pro
 130 135 140
 Phe Ser His Ala Gly Lys Gly Trp Glu Leu Phe Thr Asp Ala Ile Val
 145 150 155 160
 Thr Lys Leu Ile Gln Glu Arg Thr His Ile Ile Phe Val Leu Trp Gly
 165 170 175
 Ala Ala Ala Arg Lys Lys Cys Glu Leu Leu Phe Asn Ser Lys His Gln
 180 185 190
 His Ala Val Leu Ser Ser Pro His Pro Ser Pro Leu Ala Ala His Arg
 195 200 205
 Gly Phe Phe Gly Cys Ser His Phe Ser Lys Ile Asn Tyr Leu Leu Asn
 210 215 220
 Lys Leu Asn Lys Pro Met Ile Asn Trp Lys Leu Pro
 225 230 235

<210>824

<211>206

<212>PRT

<213>Chlamydia pneumoniae

<400>824

Met Lys Ile Val Ile Ala Ser Ser His Gly Tyr Lys Ile Arg Glu Thr
 1 5 10 15
 Lys Thr Phe Leu Lys Arg Leu Gly Asp Phe Asp Ile Phe Ser Leu Ser
 20 25 30

Asp Phe Pro Asp Tyr Lys Leu Pro Gln Glu Gln Glu Asp Ser Ile Thr
 35 40 45
 Ala Asn Ala Leu Thr Lys Gly Ile His Ala Ala Asn His Leu Gly Cys
 50 55 60
 Trp Val Ile Ala Asp Asp Thr Met Leu Arg Val Pro Ala Leu Asn Gly
 65 70 75 80
 Leu Pro Gly Pro Leu Ser Ala Asn Phe Ala Gly Val Gly Ala Tyr Asp
 85 90 95
 Lys Asp His Arg Lys Lys Leu Leu Asp Leu Met Ser Ser Leu Glu Ser
 100 105 110
 Leu Val Asp Arg Ser Ala Tyr Phe Glu Cys Cys Val Val Leu Val Ser
 115 120 125
 Pro Asn Gln Glu Ile Phe Lys Thr Tyr Gly Ile Cys Glu Gly Tyr Ile
 130 135 140
 Ser His Gln Glu Lys Gly Ser Ser Gly Phe Gly Tyr Asp Pro Ile Phe
 145 150 155 160
 Val Lys Tyr Asp Tyr Lys Gln Thr Phe Ala Glu Leu Ser Glu Asp Val
 165 170 175
 Lys Asn Gln Val Ser His Arg Ala Lys Ala Leu Gln Lys Leu Ala Pro
 180 185 190
 His Leu Gln Ser Leu Phe Glu Lys His Leu Leu Thr Arg Asp
 195 200 205

<210>825

<211>424

<212>PRT

<213>Chlamydia pneumoniae

<400>825

Leu Met Phe Phe Gln Phe Leu Ser Phe Thr Met Lys Lys Ile Phe Tyr
 1 5 10 15
 Ser Phe Val Leu Leu Ser Cys Ile Phe Pro Tyr Val Gly Cys Ala Gln
 20 25 30
 Val Phe Val Gly Leu Asp Arg Ile Phe Ser Glu Gly Glu Tyr Thr Arg
 35 40 45
 Cys Ile Gln Gly Lys Lys Ile Ala Leu Ile Ser His Ser Ala Ala Ile
 50 55 60
 Asn Ser Arg Gly Gln Asp Ala Leu Ser Val Phe Tyr Ser Arg Lys His
 65 70 75 80
 Asp Cys Thr Val Glu Ile Leu Cys Thr Leu Glu His Gly Tyr Tyr Gly
 85 90 95
 Ala Thr Pro Thr Glu Thr Val Gly Asn Gln Pro Ser Arg Tyr Pro Asn
 100 105 110
 Leu Arg Ser Val Ser Leu Tyr Gly Val Lys Glu Val Pro Lys Glu Val
 115 120 125
 Ala Glu His Cys Asp Val Phe Val Tyr Asp Val Gln Asp Ile Gly Val
 130 135 140
 Arg Ser Tyr Ser Phe Val Thr Val Leu Met Gln Ile Val Lys Ala Ser
 145 150 155 160
 Glu Arg Tyr Gly Lys Gln Leu Ile Val Leu Asp Arg Pro Asn Pro Met
 165 170 175
 Gly Gly Arg Ile Val Asp Gly Pro Leu Pro Asn Pro Thr Thr Ser Gly
 180 185 190
 Ser Leu Ala Ile Pro Tyr Cys Tyr Gly Met Thr Pro Gly Glu Leu Ala
 195 200 205
 Leu Phe Phe Lys Lys Thr Tyr Ala Pro Asn Ala Asn Val Val Val Ile
 210 215 220
 Pro Met Lys Gly Trp Asn Arg Ser Met Thr Phe Asp Glu Thr Gly Leu
 225 230 235 240
 Ile Trp Met Pro Thr Ser Pro Gln Met Pro Asp Pro Gln Ser Pro Phe
 245 250 255
 Phe Tyr Ala Ala Thr Gly Ile Leu Gly Ala Leu Ser Val Ala Ser Ile
 260 265 270
 Gly Val Gly Tyr Thr Leu Pro Phe Lys Val Leu Gly Ala Pro Trp Met
 275 280 285
 Asp Gly Glu Lys Val Ala Asp Glu Leu Asn Arg Met Lys Leu Pro Gly

290	295	300
Val Leu Phe Leu Pro Phe Phe Tyr Glu Pro Phe Phe Gly Lys Tyr Lys		
305	310	315
Met Glu Met Cys Ser Gly Val Leu Leu Val Leu Gln Asp Pro Lys Ile		320
	325	330
Phe Tyr Pro Val Glu Thr Gln Cys Thr Ile Trp Gly Val Leu Lys Ala		335
	340	345
Leu Tyr Pro Lys Gln Val Glu Gln Thr Leu Lys Ser Ile Glu Arg Ile		350
	355	360
Pro Ala Arg Arg Ser Ser Ile Cys Asn Leu Phe Gly Gly Asp Glu Phe		365
	370	375
Leu Ser Ile Ser His Lys Glu Arg Tyr Ile Val Trp Pro Leu Arg Arg		380
385	390	395
Leu Cys Lys Glu Ser Arg Glu Ser Phe His Gln Leu Arg Ser Ser Cys		400
	405	410
Leu Leu Ser Glu Tyr Ala Glu Ser		415
	420	

<210>826

<211>527

<212>PRT

<213>Chlamydia pneumoniae

<400>826

Arg Val Val Trp Val Phe Lys Ser Gln Phe Glu Gly Leu Ser Ala Leu		
1	5	10
Lys Arg Gly Val His Ala Leu Thr Lys Ala Val Thr Pro Ala Phe Gly		15
	20	25
Pro Arg Gly Tyr Asn Val Val Ile Lys Lys Gly Lys Ala Pro Ile Val		30
	35	40
Leu Thr Lys Asn Gly Ile Arg Ile Ala Lys Glu Ile Ile Leu Gln Asp		45
	50	55
Ala Phe Glu Ser Leu Gly Val Lys Leu Ala Lys Glu Ala Leu Leu Lys		60
65	70	75
Val Val Glu Gln Thr Gly Asp Gly Ser Thr Thr Ala Leu Val Val Ile		80
	85	90
Asp Ala Leu Phe Thr Gln Gly Leu Lys Gly Ile Ala Ala Gly Leu Asp		95
	100	105
Pro Gln Glu Ile Lys Ala Gly Ile Leu Leu Ser Val Glu Met Val Tyr		110
	115	120
Gln Gln Leu Gln Arg Gln Ala Ile Glu Leu Gln Ser Pro Lys Asp Val		125
	130	135
Leu His Val Ala Met Val Ala Ala Asn His Asp Val Thr Leu Gly Thr		140
145	150	155
Val Val Ala Thr Val Ile Ser Gln Ala Asp Leu Lys Gly Val Phe Ser		160
	165	170
Ser Lys Asp Ser Gly Ile Ser Lys Thr Arg Gly Leu Gly Lys Arg Val		175
	180	185
Lys Ser Gly Tyr Leu Ser Pro Tyr Phe Val Thr Arg Pro Glu Thr Xaa		190
	195	200
Asp Val Val Trp Glu Glu Ala Leu Val Leu Ile Leu Ser His Ser Leu		205
	210	215
Val Ser Leu Ser Glu Glu Leu Ile Arg Tyr Leu Glu Leu Ile Ser Glu		220
225	230	235
Gln Asn Thr His Pro Leu Val Ile Ile Ala Glu Asp Phe Asp Gln Asn		240
	245	250
Val Leu Arg Thr Leu Ile Leu Asn Lys Leu Arg Asn Gly Leu Pro Val		255
	260	265
Cys Ala Val Lys Ala Pro Gly Ser Arg Glu Leu Arg Gln Val Val Leu		270
	275	280
Glu Asp Leu Ala Ile Leu Thr Gly Ala Thr Leu Ile Gly Gln Glu Ser		285
	290	295
Glu Asn Cys Glu Ile Pro Val Ser Leu Asp Val Leu Gly Arg Val Lys		300
305	310	315
Gln Val Met Ile Thr Lys Glu Thr Phe Thr Phe Leu Glu Gly Gly Gly		320
	325	330
		335

Asp Ala Glu Ile Ile Gln Ala Arg Lys Gln Glu Leu Cys Leu Ala Ile
 340 345 350
 Ala Gly Ser Thr Ser Glu Ser Glu Cys Gln Glu Leu Glu Glu Arg Leu
 355 360 365
 Ala Ile Phe Ile Gly Ser Ile Pro Gln Val Gln Ile Thr Ala Asp Thr
 370 375 380
 Asp Thr Glu Gln Arg Glu Arg Gln Phe Gln Leu Glu Ser Ala Leu Arg
 385 390 395 400
 Ala Thr Lys Ala Ala Met Lys Gly Gly Ile Val Pro Gly Gly Gly Val
 405 410 415
 Ala Phe Leu Arg Ala Ala His Ala Ile Glu Val Pro Ala Asn Leu Ser
 420 425 430
 Ser Gly Met Thr Phe Gly Phe Glu Thr Leu Leu Gln Ala Val Arg Thr
 435 440 445
 Pro Leu Lys Val Leu Ala Gln Asn Cys Gly Arg Ser Ser Glu Glu Val
 450 455 460
 Ile His Thr Ile Leu Ser His Glu Asn Pro Arg Phe Gly Tyr Asn Gly
 465 470 475 480
 Met Thr Asp Thr Phe Glu Asp Leu Val Asp Ala Gly Ile Cys Asp Pro
 485 490 495
 Leu Ile Val Thr Thr Ser Ser Leu Lys Cys Ala Val Ser Val Ser Cys
 500 505 510
 Leu Leu Leu Thr Ser Ser Phe Phe Ile Ser Ser Arg Thr Lys Thr
 515 520 525

<210>827

<211>189

<212>PRT

<213>Chlamydia pneumoniae

<400>827

Ser Leu Val Arg Asn Asn Lys Arg Val Glu Glu Glu Val Phe Met Thr
 1 5 10 15
 Leu Ser Leu Val Gly Lys Glu Ala Pro Asp Phe Val Ala Gln Ala Val
 20 25 30
 Val Asn Gly Glu Thr Cys Thr Val Ser Leu Lys Asp Tyr Leu Gly Lys
 35 40 45
 Tyr Val Val Leu Phe Phe Tyr Pro Lys Asp Phe Thr Tyr Val Cys Pro
 50 55 60
 Thr Glu Leu His Ala Phe Gln Asp Ala Leu Gly Glu Phe His Thr Arg
 65 70 75 80
 Gly Ala Glu Val Ile Gly Cys Ser Val Asp Asp Ile Ala Thr His Gln
 85 90 95
 Gln Trp Leu Ala Thr Lys Lys Lys Gln Gly Gly Ile Glu Gly Ile Thr
 100 105 110
 Tyr Pro Leu Leu Ser Asp Glu Asp Lys Val Ile Ser Arg Ser Tyr His
 115 120 125
 Val Leu Lys Pro Glu Glu Glu Leu Ser Phe Arg Gly Val Phe Leu Ile
 130 135 140
 Asp Lys Gly Glu Ile Ile Arg His Leu Val Val Asn Asp Leu Pro Leu
 145 150 155 160
 Gly Arg Ser Ile Glu Glu Glu Leu Arg Thr Leu Asp Ala Leu Ile Phe
 165 170 175
 Phe Glu Thr Asn Gly Leu Val Cys Pro Ala Lys Leu Ala
 180 185

<210>828

<211>136

<212>PRT

<213>Chlamydia pneumoniae

<400>828

Arg Phe Asp Leu Ile Phe Gln Met Lys Phe Thr Val Ala Leu Phe Gly
 1 5 10 15
 Glu Ala Glu Lys Gly Ser Tyr Asp Thr Ala Tyr Phe Cys Arg Ser Leu
 20 25 30
 Val Asp Leu His Asn Tyr Leu Gly Asp Val Ser Ser Pro Gly Ile Thr
 35 40 45

Leu Ala Ile Lys Thr Leu Leu Ser Asp Tyr Asn Val Val Tyr Phe Arg
 50 55 60
 Val Arg Glu Glu Gly Tyr Cys Val Asp Ser Tyr Phe Phe Gly Leu His
 65 70 75 80
 Phe Leu Asn Thr Gln Thr Thr Leu Lys Asn Ile Ile Ala Ile Gly Leu
 85 90 95
 Pro Gly Val Gly Asn Gln His Ile Ile Glu Ala Ser Arg Ser Leu Cys
 100 105 110
 Gln Lys His Asn Ser Leu Leu Leu Phe Phe Asp His Asp Leu Tyr Asp
 115 120 125
 Leu Leu Thr Phe Asn Gln Pro Xaa
 130 135

<210>829

<211>205

<212>PRT

<213>Chlamydia pneumoniae

<400>829

Met His Ala Lys Leu Ser Phe Phe Ile Leu Leu Ser Leu Leu Phe Ser
 1 5 10 15
 Gly Ile Asp Cys Ser Arg Leu His Ala Ala Gly Arg Ser Pro Ser Leu
 20 25 30
 Gln Gly Val Leu Ala Glu Ile Glu Asp Ile Ser Ala Lys Leu Ala Ser
 35 40 45
 His Glu Val Glu Ile Val Met Leu Ser Glu Arg Leu Asp Glu Gln Asp
 50 55 60
 Ser Lys Phe Gln Lys Trp Thr Ala Ala Lys Pro Glu Thr Leu Ala Gln
 65 70 75 80
 Lys Ile Arg Glu Leu Glu Ser Asp Gln Lys Ala Leu Ala Lys Thr Leu
 85 90 95
 Ala Val Leu Thr Thr Ser Val Lys Asp Leu Gln Thr Asn Leu Gln Ser
 100 105 110
 Lys Leu Gln Glu Ile Gln Lys Asp His Arg Ala Leu Ala Gln Asp Leu
 115 120 125
 Arg Leu Val Arg Arg Ser Leu Leu Ala Leu Val Asp Ser Ser Ser Pro
 130 135 140
 Gly Ala Tyr Ala Asp Phe Ser Asp Pro Val Pro Glu Asn Ile Tyr Ile
 145 150 155 160
 Val Arg Glu Gly Asp Ser Leu Ser Lys Ile Ala Lys Lys Tyr Lys Leu
 165 170 175
 Ser Val Thr Glu Leu Lys Lys Ile Asn Lys Leu Asp Ser Asp Ala Ile
 180 185 190
 Tyr Ala Gly Gln Arg Leu Cys Leu Gln Arg Asn Lys Gln
 195 200 205

<210>830

<211>192

<212>PRT

<213>Chlamydia pneumoniae

<400>830

Met Asn Ile His Ser Leu Trp Lys Leu Cys Thr Leu Leu Ala Leu Leu
 1 5 10 15
 Ala Leu Pro Ala Cys Ser Leu Ser Pro Asn Tyr Gly Trp Glu Asp Ser
 20 25 30
 Cys Asn Thr Cys His His Thr Arg Lys Lys Pro Ser Ser Phe Gly
 35 40 45
 Phe Val Pro Leu Tyr Thr Glu Glu Asp Phe Asn Pro Asn Phe Thr Phe
 50 55 60
 Gly Glu Tyr Asp Ser Lys Glu Glu Lys Gln Tyr Lys Ser Ser Gln Val
 65 70 75 80
 Ala Ala Phe Arg Asn Ile Thr Phe Ala Thr Asp Ser Tyr Thr Ile Lys
 85 90 95
 Gly Glu Glu Asn Leu Ala Ile Leu Thr Asn Leu Val His Tyr Met Lys
 100 105 110
 Lys Asn Pro Lys Ala Thr Leu Tyr Ile Glu Gly His Thr Asp Glu Arg
 115 120 125

Gly Ala Ala Ser Tyr Asn Leu Ala Leu Gly Ala Arg Arg Ala Asn Ala
 130 135 140
 Ile Lys Glu His Leu Arg Lys Gln Gly Ile Ser Ala Asp Arg Leu Ser
 145 150 155 160
 Thr Ile Ser Tyr Gly Lys Glu His Pro Leu Asn Ser Gly His Asn Glu
 165 170 175
 Leu Ala Trp Gln Gln Asn Arg Arg Thr Glu Phe Lys Ile His Ala Arg
 180 185 190
 <210>831
 <211>431
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>831
 Met Leu Arg Gln Leu Cys Phe Gln Val Phe Phe Phe Cys Phe Ala Ser
 1 5 10 15
 Leu Val Tyr Ala Glu Glu Leu Glu Val Val Val Arg Ser Glu His Ile
 20 25 30
 Thr Leu Pro Ile Glu Val Ser Cys Gln Thr Asp Thr Lys Asp Pro Lys
 35 40 45
 Ile Gln Lys Tyr Leu Ser Ser Leu Thr Glu Ile Phe Cys Lys Asp Ile
 50 55 60
 Ala Leu Gly Asp Cys Leu Gln Pro Thr Ala Ala Ser Lys Glu Ser Ser
 65 70 75 80
 Ser Pro Leu Ala Ile Ser Leu Arg Leu His Val Pro Gln Leu Ser Val
 85 90 95
 Val Leu Leu Gln Ser Ser Lys Thr Pro Gln Thr Leu Cys Ser Phe Thr
 100 105 110
 Ile Ser Gln Asn Leu Ser Val Asp Arg Gln Lys Ile His His Ala Ala
 115 120 125
 Asp Thr Val His Tyr Ala Leu Thr Gly Ile Pro Gly Ile Ser Ala Gly
 130 135 140
 Lys Ile Val Phe Ala Leu Ser Ser Leu Gly Lys Asp Gln Lys Leu Lys
 145 150 155 160
 Gln Gly Glu Leu Trp Thr Thr Asp Tyr Asp Gly Lys Asn Leu Ala Pro
 165 170 175
 Leu Thr Thr Glu Cys Ser Leu Ser Ile Thr Pro Lys Trp Val Gly Val
 180 185 190
 Gly Ser Asn Phe Pro Tyr Leu Tyr Val Ser Tyr Lys Tyr Gly Val Pro
 195 200 205
 Lys Ile Phe Leu Gly Ser Leu Glu Asn Thr Glu Gly Lys Lys Val Leu
 210 215 220
 Pro Leu Lys Gly Asn Gln Leu Met Pro Thr Phe Ser Pro Arg Lys Lys
 225 230 235 240
 Leu Leu Ala Phe Val Ala Asp Thr Tyr Gly Asn Pro Asp Leu Phe Ile
 245 250 255
 Gln Pro Phe Ser Leu Thr Ser Gly Pro Met Gly Arg Pro Arg Arg Leu
 260 265 270
 Leu Asn Glu Asn Phe Gly Thr Gln Gly Asn Pro Ser Phe Asn Pro Glu
 275 280 285
 Gly Ser Gln Leu Val Phe Ile Ser Asn Lys Asp Gly Arg Pro Arg Leu
 290 295 300
 Tyr Ile Met Ser Leu Asp Pro Glu Pro Gln Ala Pro Arg Leu Leu Thr
 305 310 315 320
 Lys Lys Tyr Arg Asn Ser Ser Cys Pro Ala Trp Ser Pro Asp Gly Lys
 325 330 335
 Lys Ile Ala Phe Cys Ser Val Ile Lys Gly Val Arg Gln Ile Cys Ile
 340 345 350
 Tyr Asp Leu Ser Ser Gly Glu Asp Tyr Gln Leu Thr Thr Ser Pro Thr
 355 360 365
 Asn Lys Glu Ser Pro Ser Trp Ala Ile Asp Ser Arg His Leu Val Phe
 370 375 380
 Ser Ala Gly Asn Ala Glu Glu Ser Glu Leu Tyr Leu Ile Ser Leu Val
 385 390 395 400
 Thr Lys Lys Thr Asn Lys Ile Ala Ile Gly Val Gly Glu Lys Arg Phe

405 410 415
 Pro Ser Trp Gly Ala Phe Pro Gln Gln Pro Ile Lys Arg Thr Leu
 420 425 430
 <210>832
 <211>194
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>832
 Asn Asp Thr Pro Leu Cys Thr Thr Gln Pro Gln Lys Gln Ala Lys Cys
 1 5 10 15
 Ser Pro Pro Gln Glu Asn Val Gln Lys Ala Leu Gln Lys Pro Ile Pro
 20 25 30
 Lys Val Ile Lys Thr Glu Pro Pro Lys Pro Ser Pro Ala Pro Thr Val
 35 40 45
 Ala Lys Lys Thr Thr Ala Thr Glu Lys Pro Pro Pro Ser Thr Thr Lys
 50 55 60
 Lys Asn Thr Gln Leu Ser Lys Thr Gln Leu Gln Thr Leu Ser Glu Val
 65 70 75 80
 Ala Gln Ala Leu Ser Leu His Val Asp Lys Ile Glu Lys Ser Glu Thr
 85 90 95
 Ser Leu Lys Asn Ile Ser Trp Pro Ser Thr Ala Gln Leu Thr Met His
 100 105 110
 Ser Glu Leu Lys Ala Thr Gln Glu Asp Glu Leu Cys Glu Leu Phe Arg
 115 120 125
 Thr His Ile Ala Leu Pro Ser Lys Gly Tyr Val Arg Ile Lys Leu Val
 130 135 140
 Leu Ser Pro Asn Gly Glu Ile Gln Glu Cys Ser Phe Leu Ser Glu Val
 145 150 155 160
 Ser Ala Ala Asp Lys Gln Leu Leu Thr Gln Arg Ile His Ala Leu Pro
 165 170 175
 Phe Gln Lys Phe Leu Glu Lys Tyr Lys Val Ser Lys Asn Ile Ile Phe
 180 185 190
 Ser Tyr

<210>833
 <211>135
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>833
 Met Lys Tyr Arg Phe Thr Glu Glu Ile Glu Glu Glu Pro Leu Val Asn
 1 5 10 15
 Leu Thr Pro Leu Ile Asp Ile Val Phe Val Ile Leu Met Ala Phe Ile
 20 25 30
 Val Ala Val Pro Leu Ile Lys Leu Asp Ser Ile Ala Leu Ala Pro Gly
 35 40 45
 Thr Gln Glu Gln Glu Val Leu Ser Ser Glu Asn Asp Ser Ile Ala Val
 50 55 60
 Ile Lys Val Phe Ala Asp His Ser Leu Thr Leu Asn Glu His Pro Ile
 65 70 75 80
 Thr Leu Gln Glu Leu Thr Val Arg Leu Thr Leu Leu His Lys Ala Tyr
 85 90 95
 Pro Glu Lys Thr Pro Leu Leu Leu Gln Asp Gly Glu Thr Ser Phe Arg
 100 105 110
 Thr Tyr Gln Asn Val Lys Asn Ala Ile Glu Ala Ala Gly Phe His Glu
 115 120 125
 Leu His Val Ala Leu Gln Asn
 130 135

<210>834
 <211>232
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>834
 Met Val His Phe Ser His Asn Pro Ile Ile Gln Ala Tyr Thr Glu Ala
 1 5 10 15

Asp Phe Phe Gly Lys Ser Ile Phe Phe Cys Leu Leu Ile Leu Ser Val
 20 25 30
 Cys Thr Trp Thr Val Leu His Gln Lys Leu Ala Ile Gln Lys Asn Phe
 35 40 45
 Leu Lys Ala Gly Lys Ser Leu Lys Asp Phe Leu Ile Lys Asn Arg His
 50 55 60
 Ala Pro Leu Ser Leu Asp Ile His Pro Glu Leu Ser Pro Phe Ala Asp
 65 70 75 80
 Leu Tyr Phe Thr Ile Lys Arg Gly Thr Leu Glu Leu Leu Asp Lys Asn
 85 90 95
 Arg Gln Ser Ala Pro Asp Arg Gly Pro Ile Leu Ser Ser Glu Asp Ile
 100 105 110
 Gln Ser Leu Glu Thr Leu Leu Gly Ala Ile Met Pro Lys Tyr Lys Ala
 115 120 125
 Leu Leu His Lys Asn Ser Phe Ile Pro Ala Thr Thr Ile Ser Leu Ala
 130 135 140
 Pro Phe Leu Gly Leu Leu Gly Thr Val Trp Gly Ile Leu Val Ala Phe
 145 150 155 160
 Thr His Ile Ser Ser Gly Ser Ser Gly Asn Ser Ala Ile Met Glu Gly
 165 170 175
 Leu Ala Thr Ala Leu Gly Thr Thr Ile Ile Gly Leu Phe Val Ala Ile
 180 185 190
 Pro Ser Leu Ile Ala Phe Asn Tyr Leu Lys Ala His Ser Ser Glu Leu
 195 200 205
 Ile Ser Glu Ile Glu Gln Thr Ala Tyr Leu Leu Leu Asn Ser Ile Glu
 210 215 220
 Val Lys Tyr Arg Asn Thr Asn Leu
 225 230

<210>835

<211>135

<212>PRT

<213>Chlamydia pneumoniae

<400>835

Leu Lys Ala Ile Ser Glu Gly Ile Ala Thr Lys Ser Pro Ile Ile Val
 1 5 10 15
 Val Pro Arg Ala Val Ala Ser Pro Ser Ile Met Ala Glu Phe Pro Leu
 20 25 30
 Leu Pro Glu Leu Met Trp Val Lys Ala Thr Lys Ile Pro His Thr Val
 35 40 45
 Pro Lys Ser Pro Arg Lys Gly Ala Lys Leu Ile Val Val Ala Gly Ile
 50 55 60
 Lys Leu Phe Leu Cys Lys Arg Ala Leu Tyr Phe Gly Met Met Ala Pro
 65 70 75 80
 Arg Ser Val Ser Lys Asp Trp Ile Ser Ser Glu Glu Arg Met Gly Pro
 85 90 95
 Arg Ser Gly Ala Asp Cys Arg Phe Leu Ser Lys Ser Ser Lys Val Pro
 100 105 110
 Arg Phe Ile Val Lys Tyr Lys Ser Ala Lys Gly Leu Ser Ser Gly Trp
 115 120 125
 Ile Ser Arg Asp Arg Gly Ala
 130 135

<210>836

<211>676

<212>PRT

<213>Chlamydia pneumoniae

<400>836

Ile Ile Gln Val Gln Asn Ser Phe Leu Arg Val Ala Thr Ser Leu Asp
 1 5 10 15
 Tyr Arg His Ser Asp Trp Gly Ser Arg Phe Thr Ala Ser Lys Gly Ser
 20 25 30
 His Ile Tyr Trp Lys Asn Pro Gly Glu Ile Gly Ser Pro Leu Lys Ile
 35 40 45
 Ser Trp Gln Leu Pro Lys Gly Phe Val Val Glu Glu His Trp Pro
 50 55 60

Thr	Pro	Lys	Val	Phe	Glu	Glu	Glu	Gly	Thr	Thr	Phe	Phe	Gly	Tyr	Glu
65					70					75					80
Asp	Ser	Ala	Leu	Ile	Val	Ala	Asp	Val	Arg	Ala	Pro	Glu	Gly	Tyr	Thr
				85					90						95
Pro	Gly	Gln	Glu	Val	Glu	Leu	Arg	Ala	Gln	Val	Glu	Trp	Leu	Ala	Cys
			100					105					110		
Gly	Asp	Ser	Cys	Leu	Pro	Gly	Asn	Val	Asp	Leu	Lys	Leu	Thr	Leu	Pro
		115					120					125			
Tyr	Glu	Glu	Lys	Glu	Pro	Ser	Leu	Tyr	Pro	Asp	Thr	His	Ala	Glu	Phe
	130						135				140				
Thr	Lys	Thr	Leu	His	Ala	Gln	Pro	Arg	Val	Leu	Glu	Asn	Asp	His	Ser
145					150					155					160
Val	Gln	Val	Ala	Gln	Gly	Lys	Gly	Asn	Glu	Ile	Ile	Leu	Asn	Ile	Ser
				165					170					175	
Lys	Lys	Ile	Asn	Ala	Thr	Lys	Ala	Trp	Phe	Val	Ser	Glu	Lys	Ala	Asp
			180					185					190		
Lys	Leu	Phe	Ala	Tyr	Ala	Glu	Thr	Ser	Tyr	Ser	Gly	Gly	Thr	Gly	Thr
		195						200				205			
Ala	Trp	Arg	Leu	Lys	Val	Lys	Asn	Leu	Ser	Gly	Val	Gln	Lys	Asn	Glu
	210					215					220				
Lys	Leu	His	Gly	Ile	Leu	Leu	Leu	Ala	Asp	His	Thr	Gly	Arg	Pro	Val
225					230					235					240
Glu	Ser	Leu	Thr	Ile	His	Ser	Glu	Val	Leu	Gly	Gln	Thr	Gly	Ser	Ala
				245					250					255	
Val	Ala	Gly	Leu	Ser	Gln	Tyr	Ile	Thr	Ile	Leu	Ile	Met	Ala	Phe	Leu
			260					265					270		
Gly	Gly	Val	Leu	Leu	Asn	Ile	Met	Pro	Cys	Val	Leu	Pro	Leu	Val	Thr
		275					280					285			
Leu	Lys	Val	Tyr	Gly	Leu	Ile	Lys	Ser	Ala	Gly	Glu	His	Arg	Ser	Ser
	290					295					300				
Val	Ile	Ala	Asn	Gly	Leu	Trp	Phe	Thr	Leu	Gly	Val	Val	Gly	Cys	Phe
305					310					315					320
Trp	Gly	Leu	Ala	Gly	Val	Ala	Phe	Ile	Leu	Lys	Val	Leu	Gly	His	Asn
				325					330					335	
Ile	Gly	Trp	Gly	Phe	Gln	Leu	Gln	Glu	Pro	Met	Phe	Val	Ala	Thr	Leu
			340					345					350		
Ile	Ile	Val	Phe	Phe	Leu	Phe	Ala	Leu	Ser	Ser	Leu	Gly	Leu	Phe	Glu
		355					360					365			
Met	Gly	Thr	Met	Phe	Ala	Asn	Leu	Gly	Gly	Lys	Leu	Gln	Ser	Ser	Glu
	370					375					380				
Met	Lys	Ser	Ser	Asn	Asn	Lys	Ala	Val	Gly	Ala	Phe	Phe	Asn	Gly	Ile
385				390						395					400
Leu	Ala	Thr	Leu	Val	Thr	Thr	Pro	Cys	Thr	Gly	Pro	Phe	Leu	Gly	Ser
				405					410					415	
Val	Leu	Gly	Leu	Val	Met	Ser	Leu	Ser	Phe	Leu	Gln	Gln	Leu	Leu	Ile
			420					425					430		
Phe	Thr	Ala	Ile	Gly	Leu	Gly	Met	Ala	Ser	Pro	Tyr	Leu	Val	Phe	Ser
		435					440					445			
Val	Phe	Pro	Lys	Met	Leu	Ser	Val	Leu	Pro	Lys	Pro	Gly	Gly	Trp	Met
	450					455					460				
Ser	Thr	Phe	Lys	Gln	Leu	Thr	Gly	Phe	Met	Leu	Leu	Val	Thr	Val	Thr
465					470					475					480
Trp	Leu	Val	Trp	Ile	Phe	Gly	Ser	Glu	Thr	Ser	Thr	Thr	Ser	Val	Val
				485					490					495	
Val	Leu	Leu	Gly	Gly	Leu	Trp	Leu	Ala	Gly	Leu	Gly	Ala	Trp	Ile	Leu
			500					505					510		
Gly	Arg	Trp	Gly	Thr	Pro	Val	Ser	Pro	Lys	Lys	Gln	Arg	Val	Cys	Ala
		515					520					525			
Ser	Leu	Leu	Phe	Phe	Ala	Phe	Leu	Gly	Gly	Ala	Ile	Ser	Val	Ser	Gly
	530					535					540				
Leu	Ala	Ser	His	Tyr	Phe	Ala	Glu	Pro	Gln	Gln	Thr	Val	Ser	Val	Asn
545					550					555					560
Glu	Asp	Ser	Leu	Trp	Gln	Pro	Phe	Ser	Leu	Glu	Lys	Leu	Ala	Gln	Leu
				565					570					575	

Arg Ala Gln Gly Arg Pro Val Phe Val Asn Phe Thr Ala Lys Trp Cys
 580 585 590
 Leu Thr Cys Gln Met Asn Lys Pro Val Leu Tyr Gly Asp Ala Val Gln
 595 600 605
 Lys Met Phe Glu Thr His Gly Ile Val Thr Leu Glu Ala Asp Trp Thr
 610 615 620
 Arg Lys Asp Pro Gly Ile Thr Glu Glu Leu Ala Arg Leu Gly Arg Ala
 625 630 635 640
 Ser Val Pro Ser Tyr Val Tyr Tyr Pro Gly Asp Asn Ser Ala Pro Val
 645 650 655
 Val Leu Pro Xaa Lys Ile Thr Gln Asn Leu Leu Glu Asp Val Val Ser
 660 665 670
 Arg Phe Val Arg
 675

<210>837

<211>261

<212>PRT

<213>Chlamydia pneumoniae

<400>837

Val Asp Leu Ala Asp Ala His Val His Leu Ser Asp Asp Ala Phe Glu
 1 5 10 15
 Glu Asp Ile Asn Ser Val Leu Gln Arg Ala Gln Asp Ser Gly Val Ser
 20 25 30
 Leu Val Val Asn Val Thr Thr Thr Glu Lys Glu Leu Asn Arg Ser Phe
 35 40 45
 Ala Tyr Ala Glu Arg Phe Pro Lys Ile Arg Phe Cys His Val Gly Gly
 50 55 60
 Thr Pro Pro Gln Asp Val Asp Gln Asp Ile Glu Asp Tyr Arg Asn
 65 70 75 80
 Phe His Ala Ala Ala His Ser Lys Lys Leu Ala Ala Ile Gly Glu Val
 85 90 95
 Gly Leu Asp Tyr Cys Phe Ala Thr Glu Glu Gly Ile Ala Arg Gln Lys
 100 105 110
 Glu Val Leu Gln Arg Tyr Leu Ala Leu Ser Leu Glu Cys Glu Leu Pro
 115 120 125
 Leu Val Val His Cys Arg Gly Ala Phe Asn Asp Phe Phe Arg Met Leu
 130 135 140
 Asp Gln Tyr Tyr His Asn Asp Pro Arg Ser Arg Pro Gly Met Leu His
 145 150 155 160
 Cys Phe Thr Gly Thr Leu Glu Glu Ala Gln Glu Leu Ile Ser Arg Gly
 165 170 175
 Trp Phe Ile Ser Ile Ser Gly Ile Val Thr Phe Lys Asn Ala Gln Asp
 180 185 190
 Leu Arg Asp Leu Val Val Glu Leu Pro Leu Glu His Leu Leu Ile Glu
 195 200 205
 Thr Asp Ala Pro Phe Leu Ala Pro Val Pro Tyr Arg Gly Lys Lys Asn
 210 215 220
 Glu Pro Ala His Val Leu His Thr Ile Asn Ala Val Ala Asn Val Lys
 225 230 235 240
 Gly Met Phe Pro Gln Glu Leu Ala Ala Leu Ala Tyr Lys Asn Val Leu
 245 250 255
 Arg Phe Leu His Gly
 260

<210>838

<211>297

<212>PRT

<213>Chlamydia pneumoniae

<400>838

Met Ser Arg His Glu Ile Cys Pro Glu Val Ser His Lys Lys Gly Lys
 1 5 10 15
 Tyr Tyr Ser Thr Phe Ile Phe Arg Cys Ile His Ser Leu Ala Gly Ile
 20 25 30
 Ala Phe Thr Phe Phe Leu Cys Glu His Leu Phe Thr Asn Met Leu Ala
 35 40 45

Ser Ser Tyr Phe Ser Gln Gly Lys Gly Phe Val Ala Met Val Asn Gly
 50 55 60
 Phe His Lys Ile Pro Gly Leu Lys Ile Ile Glu Val Ala Gly Leu Val
 65 70 75 80
 Leu Pro Phe Leu Cys His Ala Ile Ile Gly Ile Val Tyr Leu Phe Gln
 85 90 95
 Gly Lys Ser Asn Cys Tyr Ser Gly Asp Gly Ser Arg Pro His Leu Arg
 100 105 110
 Tyr Ala Lys Asn Tyr Ser Tyr Thr Trp Gln Arg Trp Thr Ala Trp Ile
 115 120 125
 Leu Leu Phe Gly Ile Ala Phe His Val Val His Leu Arg Phe Ile Arg
 130 135 140
 Tyr Pro Val His Val Asp Ile His Gly Thr Thr Tyr Tyr Ala Val Asp
 145 150 155 160
 Ile Gln Pro Ser Arg Tyr Asp Val Ile Val Arg Gly Thr Lys Gly Phe
 165 170 175
 Leu Thr Leu Asn Leu Pro Asn Thr Glu Ala Ser Ser Ile Glu Val Ser
 180 185 190
 Arg His Asp Leu Gly Gly Ala Asp Ala Ala Leu Leu Ser Glu Arg Asn
 195 200 205
 Ser Tyr Leu Leu Thr Pro Ser Ala Gly Thr Ala Phe Leu Tyr Val Val
 210 215 220
 Arg Asp Ala Leu Gly Ser Leu Phe Ile Ala Leu Leu Tyr Thr Ile Leu
 225 230 235 240
 Val Ile Ala Ala Ala Phe His Gly Phe Asn Gly Leu Trp Thr Phe Cys
 245 250 255
 Cys Arg Trp Gly Val Val Val Ser Leu Arg Met Gln Gly Val Leu Arg
 260 265 270
 Ile Val Cys Tyr Leu Ala Met Ile Val Val Thr Phe Met Gly Val Ser
 275 280 285
 Ala Val Trp Asn Leu Tyr Ser Val Ala
 290 295

<210>839

<211>626

<212>PRT

<213>Chlamydia pneumoniae

<400>839

Met Asp Glu Asn Arg Lys Val Ile Val Val Gly Gly Gly Leu Ala Gly
 1 5 10 15
 Leu Ser Ala Ala Met Gln Leu Ala Asn Leu Gly Ile Ile Val Glu Leu
 20 25 30
 Val Ser Leu Thr Lys Val Lys Arg Ser His Ser Val Cys Ala Gln Gly
 35 40 45
 Gly Ile Asn Ala Ala Leu Asn Leu Lys Pro Glu Glu Glu Asp Ser Pro
 50 55 60
 Tyr Val His Ala Tyr Asp Thr Ile Lys Gly Gly Asp Phe Leu Ala Asp
 65 70 75 80
 Gln Pro Pro Val Leu Glu Met Cys Leu Ala Ala Pro Arg Ile Ile Lys
 85 90 95
 Met Leu Asp Asn Phe Gly Cys Pro Phe Asn Arg Gly Pro Ser Gly Asn
 100 105 110
 Leu Asp Val Arg Arg Phe Gly Gly Thr Leu Tyr His Arg Thr Val Phe
 115 120 125
 Cys Gly Ala Ser Thr Gly Gln Gln Leu Met Tyr Thr Leu Asp Glu Gln
 130 135 140
 Val Arg Arg Arg Glu His Ala Gly Arg Val Ile Lys Arg Glu Asn His
 145 150 155 160
 Glu Phe Val Arg Leu Val Thr Asp His Ser Gly Arg Ala Cys Gly Ile
 165 170 175
 Ile Leu Met Asn Leu Phe Asn Asn Arg Leu Glu Ile Leu Arg Gly Asp
 180 185 190
 Ala Val Ile Ile Ala Thr Gly Gly Pro Gly Val Ile Phe Lys Met Ser
 195 200 205
 Thr Asn Ser Thr Phe Cys Thr Gly Ala Ala Asn Gly Arg Leu Phe Leu

210 215 220
 Gln Gly Met Ala Tyr Ala Asn Pro Glu Phe Ile Gln Ile His Pro Thr
 225 230 235 240
 Ala Ile Pro Gly Arg Asp Lys Leu Arg Leu Ile Ser Glu Ser Val Arg
 245 250 255
 Gly Glu Gly Gly Arg Val Trp Val Pro Gly Asp Ser Ser Lys Arg Ile
 260 265 270
 Val Phe Pro Asp Gly Ser Glu Arg Pro Cys Gly Glu Thr Gly Ala Pro
 275 280 285
 Trp Tyr Phe Leu Glu Asp Met Tyr Pro Ala Tyr Gly Asn Leu Val Ser
 290 295 300
 Arg Asp Val Gly Ala Arg Ala Ile Leu Arg Val Cys Glu Ala Gly Leu
 305 310 315 320
 Gly Ile Asp Gly Arg Met Glu Ala Tyr Leu Asp Val Thr His Leu Pro
 325 330 335
 Glu Lys Thr Arg His Lys Leu Glu Val Val Leu Asp Ile Tyr Lys Lys
 340 345 350
 Phe Thr Gly Glu Asp Pro Asn Thr Val Pro Met Arg Ile Phe Pro Ala
 355 360 365
 Val His Tyr Ser Met Gly Gly Ala Trp Val Asp Trp Pro Ala Ala Asp
 370 375 380
 Asp Pro Asp Arg Asp Ser Arg Phe Arg Gln Met Thr Asn Ile Pro Gly
 385 390 395 400
 Cys Phe Asn Cys Gly Glu Ser Asp Phe Gln Tyr His Gly Ala Asn Arg
 405 410 415
 Leu Gly Ala Asn Ser Leu Leu Ser Cys Leu Phe Ala Gly Leu Val Ser
 420 425 430
 Gly Asp Glu Ala Ser Arg Phe Ile Glu Ala Phe Gly Ala Ser Gln Ala
 435 440 445
 Thr Ser Ser Asp Phe Asp Arg Ala Leu Gln Gln Glu Lys Glu Glu Asn
 450 455 460
 Ala Arg Leu Leu Ser Ala Ser Gly Lys Glu Asn Ile Phe Val Leu His
 465 470 475 480
 Glu Glu Ile Ala Lys Ile Met Val Arg Asn Val Thr Val Lys Arg Asn
 485 490 495
 Asn Arg Asp Leu Gln Glu Thr Met Asp Lys Leu Lys Glu Phe Arg Glu
 500 505 510
 Arg Leu Lys Asn Val Ser Val Leu Asp Ser Ser Pro Phe Ala Asn Lys
 515 520 525
 Ser Phe His Phe Val Arg Gln Met Gly Pro Met Leu Glu Leu Ala Leu
 530 535 540
 Ala Ile Thr Lys Gly Ala Leu Leu Arg Asn Glu Phe Arg Gly Ser His
 545 550 555 560
 Tyr Lys Pro Glu Phe Pro Glu Arg Asp Asp Glu His Trp Leu Lys Thr
 565 570 575
 Thr Val Ala Val Tyr Ala Pro Glu Glu Pro Glu Ile Ser Tyr Leu Pro
 580 585 590
 Val Asp Thr Arg His Val Ala Pro Thr Leu Arg Asp Tyr Thr Lys Ser
 595 600 605
 Ser Thr Gly Lys Ile Glu Leu Thr Asn Ile Pro Asp Asn Ile Arg Leu
 610 615 620
 Pro Ile
 625
 <210>840
 <211>270
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>840
 Leu Ile Ile Ser Val Tyr Pro Tyr Arg Lys Arg Glu Met Met Glu Asn
 1 5 10 15
 Leu Glu Thr Phe Ile Leu Lys Ile Tyr Arg Gly Val Pro Gly Lys Gln
 20 25 30
 Tyr Trp Glu Ser Phe Glu Leu Pro Leu His Pro Gly Glu Asn Val Ile
 35 40 45

Ser Ala Leu Met Glu Ile Glu Lys Arg Pro Val Asn Ile Leu Gly Glu
 50 55 60
 Lys Val Asn Pro Val Val Trp Glu Gln Gly Cys Leu Glu Glu Val Cys
 65 70 75 80
 Gly Ser Cys Ser Ile Leu Val Asn Gly Val Pro Arg Gln Ala Cys Thr
 85 90 95
 Ala Leu Ile Gln Glu Tyr Ile Asp Ala Thr Gln Ser Arg Glu Ile Val
 100 105 110
 Leu Ala Pro Leu Thr Lys Phe Pro Leu Ile Arg Asp Leu Ile Val Asp
 115 120 125
 Arg Ser Ile Met Phe Asp Asn Leu Glu Arg Ile Gln Gly Trp Val Ala
 130 135 140
 Ala Asp Ile Glu Gly Glu Thr Phe Gly Pro Gln Val Thr Gln Glu Gln
 145 150 155 160
 Gln Glu Leu Leu Tyr Ala Leu Ser Gln Cys Met Thr Cys Gly Cys Cys
 165 170 175
 Thr Glu Ala Cys Pro Gln Ile Asp Asn Lys Ser Asp Phe Ile Gly Pro
 180 185 190
 Ala Ala Ile Ser Gln Ala Arg Tyr Phe Asn Thr Tyr Pro Gly Asp Lys
 195 200 205
 Gln Ser Lys Lys Arg Trp Arg Ala Leu Met Gly Lys Gly Gly Ile Glu
 210 215 220
 Gly Cys Gly Gln Ala His Asn Cys Val Arg Val Cys Pro Lys Lys Leu
 225 230 235 240
 Pro Leu Thr Glu Ser Ile Ser Ala Val Gly Arg Glu Ile Ser Lys Phe
 245 250 255
 Ser Leu Arg Ser Leu Phe Ser Ala Leu Phe Lys Lys Lys Lys
 260 265 270

<210>841

<211>998

<212>PRT

<213>Chlamydia pneumoniae

<400>841

Thr Cys Leu Arg Ser Ser Arg Lys Ile Val Val Glu Asp Ile Ser Asp
 1 5 10 15
 Arg Asn Met Tyr Ser Cys Tyr Ser Lys Gly Ile Ser His Asn Tyr Leu
 20 25 30
 Leu His Pro Met Ser Arg Leu Asp Ile Phe Val Phe Asp Ser Leu Ile
 35 40 45
 Ala Asn Gln Asp Gln Asn Leu Glu Glu Ile Phe Cys Ser Glu Asp
 50 55 60
 Thr Val Leu Phe Lys Ala Tyr Arg Thr Thr Ala Leu Gln Ser Pro Leu
 65 70 75 80
 Ala Ala Lys Asn Leu Asn Ile Ala Arg Lys Val Ala Asn Tyr Ile Leu
 85 90 95
 Ala Asp Asn Gly Glu Ile Asp Thr Val Lys Leu Val Glu Ala Ile His
 100 105 110
 His Leu Ser Gln Cys Thr Tyr Pro Leu Gly Pro His Arg His Asn Glu
 115 120 125
 Ala Gln Asp Arg Glu His Leu Leu Lys Met Leu Lys Ala Leu Lys Glu
 130 135 140
 Asn Pro Lys Leu Lys Glu Ser Ile Lys Thr Leu Phe Val Pro Ser Tyr
 145 150 155 160
 Ser Thr Ile Gln Asn Leu Ile Arg His Thr Leu Ala Leu Asn Pro Gln
 165 170 175
 Thr Ile Leu Ser Thr Ile His Val Arg Gln Ala Ala Leu Thr Ala Leu
 180 185 190
 Phe Thr Tyr Leu Arg Gln Asp Val Gly Ser Cys Phe Ala Thr Ala Pro
 195 200 205
 Ala Ile Leu Ile His Gln Glu Tyr Pro Glu Arg Phe Leu Lys Asp Leu
 210 215 220
 Asn Asp Leu Ile Ser Ser Gly Lys Leu Ser Arg Ile Val Asn Gln Arg
 225 230 235 240
 Glu Ile Ala Val Pro Ile Asn Leu Ser Gly Cys Ile Gly Glu Leu Phe

245 250 255
 Lys Pro Leu Arg Ile Leu Asp Leu Tyr Pro Asp Pro Leu Val Lys Leu
 260 265 270
 Ser Ser Ser Pro Gly Leu Lys Lys Ala Phe Ser Ala Ala Asn Leu Ile
 275 280 285
 Glu Thr Leu Gly Asp Ser Glu Ala Gln Ile Gln Gln Leu Leu Ser His
 290 295 300
 Gln Tyr Leu Met Gln Lys Leu Gln Asn Val His Glu Thr Leu Thr Ala
 305 310 315 320
 Asn Asp Ile Ile Lys Ser Thr Leu Leu His Tyr Tyr Gln Leu Gln Glu
 325 330 335
 Ser Thr Val Arg Ala Ile Phe Phe Lys Glu Gly Leu Phe Ser Lys Glu
 340 345 350
 Gln Val Ala Phe Ser Thr Gln His Pro Arg Glu Leu Ser Glu Ile Gln
 355 360 365
 Arg Val Tyr His Tyr Leu His Ala Tyr Glu Glu Ala Lys Ser Ala Phe
 370 375 380
 Ile His Asp Thr Gln Asn Pro Leu Leu Lys Ala Trp Glu Tyr Thr Leu
 385 390 395 400
 Ala Thr Leu Ala Asp Ala Ser Gln Pro Thr Ile Ser Asn His Ile Arg
 405 410 415
 Leu Ala Leu Gly Trp Lys Ser Glu Asp Pro His Ser Leu Val Ser Leu
 420 425 430
 Val Thr His Phe Val Glu Glu Glu Val Glu Asn Ile Arg Ile Leu Val
 435 440 445
 Gln Gln Cys Glu Gln Thr Tyr His Glu Ala Arg Ser Gln Leu Glu Tyr
 450 455 460
 Ile Glu Gly Arg Met Arg Asn Pro Leu Asn Asn Gln Asp Ser Gln Ile
 465 470 475 480
 Leu Thr Met Asp His Met Arg Phe Arg Gln Glu Leu Asn Lys Ala Leu
 485 490 495
 Tyr Glu Trp Asp Ser Ala Gln Glu Lys Ala Lys Lys Phe Leu His Leu
 500 505 510
 Pro Glu Phe Leu Leu Ser Phe Tyr Thr Lys Gln Ile Pro Leu Tyr Phe
 515 520 525
 Arg Ser Ser Tyr Asp Ala Phe Ile Gln Glu Phe Ala His Leu Tyr Ala
 530 535 540
 Asn Ala Pro Ala Gly Phe Arg Ile Leu Phe Thr His Gly Arg Thr His
 545 550 555 560
 Pro Asn Thr Trp Ser Pro Ile Tyr Ser Ile Asn Glu Phe Ile Arg Phe
 565 570 575
 Leu Ser Glu Phe Phe Thr Ser Thr Glu Ser Glu Leu Leu Gly Lys His
 580 585 590
 Ala Val Ile Asn Leu Glu Lys Glu Thr Ser Arg Leu Val His Asn Ile
 595 600 605
 Thr Ala Met Leu His Thr Asp Val Phe Gln Glu Ala Leu Leu Thr Arg
 610 615 620
 Ile Leu Glu Ala Tyr Gln Leu Pro Val Pro Pro Ser Ile Leu Asn His
 625 630 635 640
 Leu Asp Gln Leu Ser Gln Thr Pro Trp Val Tyr Val Ser Gly Gly Thr
 645 650 655
 Val Asp Thr Leu Leu Leu Asp Tyr Phe Glu Ser Ser Glu Pro Leu Thr
 660 665 670
 Leu Thr Glu Lys His Pro Glu Asn Pro His Glu Leu Ala Ala Phe Tyr
 675 680 685
 Ala Asp Ala Leu Lys Asp Leu Pro Thr Gly Ile Lys Ser Tyr Leu Glu
 690 695 700
 Glu Gly Ser His Ser Leu Leu Ser Ser Ser Pro Thr His Val Phe Ser
 705 710 715 720
 Ile Ile Ala Gly Ser Pro Leu Phe Arg Glu Ala Trp Asp Asn Asp Trp
 725 730 735
 Tyr Ser Tyr Thr Trp Leu Arg Asp Val Trp Val Lys Gln His Gln Asp
 740 745 750
 Phe Leu Gln Asp Thr Ile Leu Pro Gln Leu Ser Ile Tyr Ala Phe Ile

755 760 765
 Glu Asn Phe Cys Asn Lys Tyr Ala Leu Gln His Val Val His Asp Phe
 770 775 780
 His Asp Phe Cys Ser Asp His Ser Leu Thr Leu Pro Glu Leu Tyr Asp
 785 790 795 800
 Lys Gly Ser Arg Phe Leu Ser Ser Leu Phe Thr Lys Asp Lys Thr Val
 805 810 815
 Ala Leu Ile Tyr Ile Arg Arg Leu Leu Tyr Leu Met Val Arg Glu Val
 820 825 830
 Pro Tyr Val Ser Glu Gln Gln Leu Pro Glu Val Leu Asp Asn Val Ser
 835 840 845
 Ser Tyr Leu Gly Ile Ser Ser Arg Ile Thr Tyr Glu Lys Phe Arg Ser
 850 855 860
 Leu Ile Glu Glu Thr Ile Pro Lys Met Thr Leu Leu Ser Ser Ala Asp
 865 870 875 880
 Leu Arg His Ile Tyr Lys Gly Leu Leu Met Gln Ser Tyr Gln Lys Ile
 885 890 895
 Tyr Thr Glu Glu Asp Thr Tyr Leu Arg Leu Thr Thr Ala Met Arg His
 900 905 910
 His Asn Leu Ala Tyr Pro Ala Pro Leu Leu Phe Ala Asp Ser Asn Trp
 915 920 925
 Pro Ser Ile Tyr Phe Gly Phe Ile Leu Asn Pro Gly Thr Thr Glu Ile
 930 935 940
 Asp Leu Trp Lys Phe Asn Tyr Ala Gly Leu Gln Gly Gln Pro Leu Asp
 945 950 955 960
 Asn Ile Gln Glu Leu Phe Ala Thr Ser Arg Pro Trp Thr Leu Tyr Ala
 965 970 975
 Asn Pro Ile Asp Tyr Gly Met Pro Pro Pro Gly Tyr Arg Ser Arg
 980 985 990
 Leu Pro Lys Glu Phe Phe
 995

<210>842

<211>616

<212>PRT

<213>Chlamydia pneumoniae

<400>842

Arg His His Leu Ile Asn Ile Lys Gly Ile Ser Ile Met Lys His Thr
 1 5 10 15
 Phe Thr Lys Arg Val Leu Phe Phe Phe Leu Val Ile Pro Ile Pro
 20 25 30
 Leu Leu Leu Asn Leu Met Val Val Gly Phe Phe Ser Phe Ser Ala Ala
 35 40 45
 Lys Ala Asn Leu Val Gln Val Leu His Thr Arg Ala Thr Asn Leu Ser
 50 55 60
 Ile Glu Phe Glu Lys Lys Leu Thr Ile His Lys Leu Phe Leu Asp Arg
 65 70 75 80
 Leu Ala Asn Thr Leu Ala Leu Lys Ser Tyr Ala Ser Pro Ser Ala Glu
 85 90 95
 Pro Tyr Ala Gln Ala Tyr Asn Glu Met Met Ala Leu Ser Asn Thr Asp
 100 105 110
 Phe Ser Leu Cys Leu Ile Asp Pro Phe Asp Gly Ser Val Arg Thr Lys
 115 120 125
 Asn Pro Gly Asp Pro Phe Ile Arg Tyr Leu Lys Gln His Pro Glu Met
 130 135 140
 Lys Lys Lys Leu Ser Ala Ala Val Gly Lys Ala Phe Leu Leu Thr Ile
 145 150 155 160
 Pro Gly Lys Pro Leu Leu His Tyr Leu Ile Leu Val Glu Asp Val Ala
 165 170 175
 Ser Trp Asp Ser Thr Thr Thr Ser Gly Leu Leu Val Ser Phe Tyr Pro
 180 185 190
 Met Ser Phe Leu Gln Lys Asp Leu Phe Gln Ser Leu His Ile Thr Lys
 195 200 205
 Gly Asn Ile Cys Leu Val Asn Lys Tyr Gly Glu Val Leu Phe Cys Ala
 210 215 220

Gln Asp Ser Glu Ser Ser Phe Val Phe Ser Leu Asp Leu Pro Asn Leu
 225 230 235 240
 Pro Gln Phe Gln Ala Arg Ser Pro Ser Ala Ile Glu Ile Glu Lys Ala
 245 250 255
 Ser Gly Ile Leu Gly Gly Glu Asn Leu Ile Thr Val Ser Ile Asn Lys
 260 265 270
 Lys Arg Tyr Leu Gly Leu Val Leu Asn Lys Ile Pro Ile Gln Gly Thr
 275 280 285
 Tyr Thr Leu Ser Leu Val Pro Val Ser Asp Leu Ile Gln Ser Ala Leu
 290 295 300
 Lys Val Pro Leu Asn Ile Cys Phe Phe Tyr Val Leu Ala Phe Leu Leu
 305 310 315 320
 Met Trp Trp Ile Phe Ser Lys Ile Asn Thr Lys Leu Asn Lys Pro Leu
 325 330 335
 Gln Glu Leu Thr Phe Cys Met Glu Ala Ala Trp Arg Gly Asn His Asn
 340 345 350
 Val Arg Phe Glu Pro Gln Pro Tyr Gly Tyr Glu Phe Asn Glu Leu Gly
 355 360 365
 Asn Ile Phe Asn Cys Thr Leu Leu Leu Leu Asn Ser Ile Glu Lys
 370 375 380
 Ala Asp Ile Asp Tyr His Ser Gly Glu Lys Leu Gln Lys Glu Leu Gly
 385 390 395 400
 Ile Leu Ser Ser Leu Gln Ser Ala Leu Leu Ser Pro Asp Phe Pro Thr
 405 410 415
 Phe Pro Lys Val Thr Phe Ser Ser Gln His Leu Arg Arg Arg Gln Leu
 420 425 430
 Ser Gly His Phe Asn Gly Trp Thr Val Gln Asp Gly Gly Asp Thr Leu
 435 440 445
 Leu Gly Ile Ile Gly Leu Ala Gly Asp Ile Gly Leu Pro Ser Tyr Leu
 450 455 460
 Tyr Ala Leu Ser Ala Arg Ser Leu Phe Leu Ala Tyr Ala Ser Ser Asp
 465 470 475 480
 Val Ser Leu Gln Lys Ile Ser Lys Asp Thr Ala Asp Ser Phe Ser Lys
 485 490 495
 Thr Thr Glu Gly Asn Glu Ala Val Val Ala Met Thr Phe Ile Lys Tyr
 500 505 510
 Val Glu Lys Asp Arg Ser Leu Glu Leu Leu Ser Leu Ser Glu Gly Ala
 515 520 525
 Pro Thr Met Phe Leu Gln Arg Gly Glu Ser Phe Val Arg Leu Pro Leu
 530 535 540
 Glu Thr His Gln Ala Leu Gln Pro Gly Asp Arg Leu Ile Cys Leu Thr
 545 550 555 560
 Gly Gly Glu Asp Ile Leu Lys Tyr Phe Ser Gln Leu Pro Ile Glu Glu
 565 570 575
 Leu Leu Lys Asp Pro Leu Asn Pro Leu Asn Thr Glu Asn Leu Ile Asp
 580 585 590
 Ser Leu Thr Met Met Leu Asn Asn Glu Thr Glu His Ser Ala Asp Gly
 595 600 605
 Thr Leu Thr Ile Leu Ser Phe Ser
 610 615

<210>843

<211>629

<212>PRT

<213>Chlamydia pneumoniae

<400>843

Asn Asn Arg Val Pro Phe Val Val Cys Cys Ala Val Ala Ile Ile Ala
 1 5 10 15
 Pro Leu Gly Ile Asn Ile Val Trp Leu Asn Leu Asp Gln Tyr Arg Thr
 20 25 30
 Ile Val Ser Ala Ile Ser Thr Ala Leu Lys Glu Asn Ala Ala Phe Lys
 35 40 45
 Ala Asn Thr Leu Thr Gln Ile Val Pro Leu Asn Val Asp Val Leu Ser
 50 55 60
 Leu Phe Ser Asp Val Leu Asp Leu Asp Ala Gly Ile Pro Glu Thr Pro

65	70	75	80
Asn Val Leu Leu Ser	Asn Glu Met Gln Lys	Val Phe Gln Gly Ile Tyr	
85	90	95	
Asn Glu Ile Ser Leu Ile	Lys Val Phe Pro Asn Gly Asp Lys Ile Val		
100	105	110	
Val Ala Ser Ser Ile Pro	Glu His Leu Gly Glu Asn Tyr Asn His Lys		
115	120	125	
Ile Asp Ile Pro Lys Asn	Thr Pro Phe Leu Ala Ala Leu Lys Gln Ser		
130	135	140	
Pro Lys Asn Gln Glu Val	Phe Ser Val Met Gln Ala Asn Val Phe Asp		
145	150	155	160
Ala Lys Thr Gln Glu Leu	Gln Gly Ile Leu Tyr Thr Thr Phe Ser Ala		
165	170	175	
Glu Ser Leu Leu Lys Asp	Leu Leu Ile Asn Lys Gln Ser Tyr Leu Thr		
180	185	190	
Val Lys Thr Ala Ile Leu	Ser Lys Tyr Gly Val Ile Leu Lys Ala Ser		
195	200	205	
Asp Pro Ala Leu His Leu	His Thr Val Tyr Pro Asp Met Thr Lys Glu		
210	215	220	
Lys Phe Cys Gln Val Phe	Leu Asn Asp Asp Pro Cys Pro Ile Asp Ser		
225	230	235	240
Glu Leu Gly Pro Leu Thr	Leu Ser Pro Leu Asp Ile Gly Glu Asn Phe		
245	250	255	
Tyr Ser Phe Lys Ile Lys	Asp Thr Glu Ile Trp Gly Cys Ile Glu Asn		
260	265	270	
Val Pro Ser Ile Asp Ile	Ala Val Leu Ser Tyr Ala Lys Lys Glu Glu		
275	280	285	
Ser Phe Ala Pro Leu Trp	Arg Arg Ala Arg Met Tyr Thr Ala Tyr Phe		
290	295	300	
Phe Cys Ile Leu Leu Gly	Ser Leu Ile Ala Phe Ile Val Ala Arg Arg		
305	310	315	320
Leu Ser Leu Pro Ile Arg	Lys Leu Ala Thr Ala Met Ile Glu Ser Arg		
325	330	335	
Lys Asn Lys Asn Cys Leu	Tyr Thr Asp Asp Ser Leu Gly Phe Glu Ile		
340	345	350	
Asn Arg Leu Gly His Ile	Phe Asn Ala Met Val Glu Asn Leu His Lys		
355	360	365	
Gln Gln His Leu Ala Lys	Thr Asn Phe Glu Met Lys Glu Asn Ala Gln		
370	375	380	
Asn Ala Leu His Leu Gly	Glu Gln Ala Gln Gln Arg Leu Leu Pro Asn		
385	390	395	400
Thr Leu Pro Ser Tyr Pro	His Ile Glu Leu Ala Lys Ala Tyr Ile Pro		
405	410	415	
Ala Ile Thr Val Gly Gly	Asp Phe Phe Asp Val Phe Val Val Gly Glu		
420	425	430	
Gly Ser Lys Ala Arg Leu	Phe Leu Ile Val Ala Asp Ala Ser Gly Lys		
435	440	445	
Gly Val Asn Ala Cys Gly	Tyr Ser Leu Phe Leu Lys Asn Met Leu Arg		
450	455	460	
Thr Phe Leu Ser Arg Ser	Ser Ser Leu Gln Gln Ala Ile Gln Glu Thr		
465	470	475	480
Ser Arg Leu Phe Tyr Asn	Asn Thr Lys Asn Ser Gly Met Phe Val Thr		
485	490	495	
Leu Cys Val Tyr Cys Tyr	His Gln Thr Ser Asn Thr Met Glu Tyr Tyr		
500	505	510	
Ser Cys Gly His Pro Pro	Ala Cys Tyr Leu Asp Pro Asp Gly Glu Thr		
515	520	525	
Ser Trp Leu Phe His Pro	Gly Met Ala Leu Gly Phe Leu Pro Glu Val		
530	535	540	
Ala Asn Ile Thr Ser Lys	Leu Phe His Pro Lys Pro Gly Ser Leu Phe		
545	550	555	560
Val Leu Tyr Ser Asp Gly	Ile Thr Glu Ala His Asn Asn Asn Asn Asp		
565	570	575	
Met Phe Gly Glu Glu Arg	Leu Gln Ala Ala Ile Gln Gly Leu Thr Gly		

580 585 590
 Lys Ser Ala Ala Asp Ala Val His Arg Leu Met Leu Ser Val Lys Thr
 595 600 605
 Phe Val Gly Asn Ser His Gln His Asp Asp Ile Thr Leu Leu Ile Leu
 610 615 620
 Lys Val Leu Ala Ser
 625

<210>844

<211>195

<212>PRT

<213>Chlamydia pneumoniae

<400>844

Lys Ser Ser Lys His Arg Ser Phe Leu Leu Lys Lys Ser Gly Gly Asn
 1 5 10 15
 Gln Val Ser Leu Tyr Gln Lys Trp Trp Asn Ser Gln Leu Lys Lys Ser
 20 25 30
 Leu Cys Tyr Ser Thr Val Ala Ala Leu Ile Phe Met Ile Pro Ser Gln
 35 40 45
 Glu Ser Phe Ala Asp Ser Leu Ile Asp Leu Asn Leu Gly Leu Asp Pro
 50 55 60
 Ser Val Glu Cys Leu Ser Gly Asp Gly Ala Phe Ser Val Gly Tyr Phe
 65 70 75 80
 Thr Lys Ala Gly Ser Thr Pro Val Glu Tyr Gln Pro Phe Lys Tyr Asp
 85 90 95
 Val Ser Lys Lys Thr Phe Thr Ile Leu Ser Val Glu Thr Ala Asn Gln
 100 105 110
 Ser Gly Tyr Ala Tyr Gly Ile Ser Tyr Asp Gly Thr Ile Thr Val Gly
 115 120 125
 Thr Cys Ser Leu Gly Ala Gly Lys Tyr Asn Gly Ala Lys Trp Ser Ala
 130 135 140
 Asp Gly Thr Leu Thr Pro Leu Thr Gly Ile Thr Gly Gly Thr Ser His
 145 150 155 160
 Thr Glu Ala Arg Ala Ile Ser Lys Asp Thr Gln Val Ile Glu Gly Phe
 165 170 175
 Ser Tyr Asp Ala Ser Gly Gln Pro Lys Ala Val Gln Trp Ala Ser Gly
 180 185 190
 Gly Leu Gln
 195

<210>845

<211>115

<212>PRT

<213>Chlamydia pneumoniae

<400>845

Cys Phe Arg Ala Thr Gln Gly Cys Ala Val Gly Lys Arg Arg Xaa Thr
 1 5 10 15
 Val Thr Gln Leu Ala Asp Ile Ser Gly Gly Ser Arg Ser Ser Tyr Ala
 20 25 30
 Tyr Ala Ile Ser Asp Asp Gly Thr Ile Ile Val Gly Ser Met Glu Ser
 35 40 45
 Thr Ile Thr Arg Lys Thr Thr Ala Val Lys Trp Val Asn Asn Val Pro
 50 55 60
 Thr Tyr Leu Gly Thr Leu Gly Gly Asp Ala Ser Thr Gly Leu Tyr Ile
 65 70 75 80
 Ser Gly Asp Gly Thr Val Ile Val Gly Ala Ala Asn Thr Ala Thr Val
 85 90 95
 Thr Asn Gly Asn Gln Glu Ser His Ala Tyr Met Tyr Lys Asp Asn Gln
 100 105 110
 Met Lys Asp
 115

<210>846

<211>182

<212>PRT

<213>Chlamydia pneumoniae

<400>846

Gly Thr Leu Gly Gly Ala Asn Ser Ser Ala Thr Gly Val Ser Ser Asp
 1 5 10 15
 Gly Ser Val Ile Val Gly Gln Ala Gln Thr Ala Asp Lys Ser Val His
 20 25 30
 Ala Phe Gln Tyr Tyr Asn Gly Glu Met Lys Asp Leu Gly Thr Leu Gly
 35 40 45
 Gly Thr Ser Ser Thr Ala Lys Thr Val Ser Pro Asp Gly Lys Val Ile
 50 55 60
 Met Gly Arg Ser Gln Ile Ala Asp Gly Ser Trp His Ala Phe Met Cys
 65 70 75 80
 His Thr Asp Phe Ser Ser Asn Asn Val Leu Phe Asp Leu Asp Asn Thr
 85 90 95
 Tyr Lys Thr Leu Arg Glu Asn Gly Arg Gln Leu Asn Ser Ile Phe Asn
 100 105 110
 Leu Gln Asn Met Met Leu Gln Arg Ala Ser Asp His Glu Phe Thr Glu
 115 120 125
 Phe Gly Arg Ser Asn Ile Ala Leu Gly Ala Gly Leu Tyr Val Asn Ala
 130 135 140
 Leu Gln Asn Leu Pro Ser Xaa Leu Ala Ala Gln Tyr Phe Gly Ile Ala
 145 150 155 160
 Tyr Lys Ile Arg Pro Lys Tyr Arg Leu Gly Val Phe Leu Asp His Asn
 165 170 175
 Phe Ser Ser His Val Ser
 180

<210>847

<211>244

<212>PRT

<213>Chlamydia pneumoniae

<400>847

Gln His Asn Ile Leu Glu Ser His Thr Lys Tyr Val Leu Asn Ile Val
 1 5 10 15
 Trp Gly Cys Phe Trp Thr Ile Ile Ser Ala Pro Thr Phe Pro Asn Asn
 20 25 30
 Phe Asn Val Ser His Asn Arg Leu Trp Met Gly Ala Phe Ile Gly Trp
 35 40 45
 Gln Asp Ser Asp Ala Leu Gly Ser Ser Val Lys Val Ser Phe Gly Tyr
 50 55 60
 Gly Lys Gln Lys Ala Thr Ile Thr Arg Glu Gln Leu Glu Asn Thr Glu
 65 70 75 80
 Ala Gly Ser Gly Glu Ser His Phe Glu Gly Val Ala Ala Gln Ile Glu
 85 90 95
 Gly Arg Tyr Gly Lys Ser Leu Gly Gly His Val Arg Val Gln Pro Phe
 100 105 110
 Leu Gly Leu Gln Phe Val His Ile Thr Arg Lys Glu Tyr Thr Glu Asn
 115 120 125
 Ala Val Gln Phe Pro Val His Tyr Asp Pro Ile Asp Tyr Ser Thr Gly
 130 135 140
 Val Val Tyr Leu Gly Ile Gly Ser His Ile Ala Leu Val Asp Ser Leu
 145 150 155 160
 His Val Gly Thr Arg Met Gly Met Glu Gln Asn Phe Ala Ala His Thr
 165 170 175
 Asp Arg Phe Ser Gly Ser Ile Ala Ser Ile Gly Asn Phe Val Phe Glu
 180 185 190
 Lys Leu Asp Val Thr His Thr Arg Ala Phe Ala Glu Met Arg Val Asn
 195 200 205
 Tyr Glu Leu Pro Tyr Leu Gln Ser Leu Asn Leu Ile Leu Arg Val Asn
 210 215 220
 Gln Gln Pro Leu Gln Gly Val Met Gly Phe Ser Ser Asp Leu Arg Tyr
 225 230 235 240
 Ala Leu Gly Phe

<210>848

<211>687

<212>PRT

<213>Chlamydia pneumoniae

<400>848

Ser Glu Leu Tyr Ser Ser Tyr Leu Gln Pro Cys Leu Asn Met Ser Ile
 1 5 10 15
 Val Arg Asn Ser Ala Leu Pro Leu Pro Cys Leu Ser Arg Ser Glu Thr
 20 25 30
 Phe Lys Lys Val Arg Ser His Met Lys Phe Met Lys Val Leu Thr Pro
 35 40 45
 Trp Ile Tyr Arg Lys Asp Leu Trp Val Thr Ala Phe Leu Leu Thr Ala
 50 55 60
 Ile Pro Gly Ser Phe Ala His Thr Leu Val Asp Ile Ala Gly Glu Pro
 65 70 75 80
 Arg His Ala Ala Gln Ala Thr Gly Val Ser Gly Asp Gly Lys Ile Val
 85 90 95
 Ile Gly Met Lys Val Pro Asp Asp Pro Phe Ala Ile Thr Val Gly Phe
 100 105 110
 Gln Tyr Ile Asp Gly His Leu Gln Pro Leu Glu Ala Val Arg Pro Gln
 115 120 125
 Cys Ser Val Tyr Pro Asn Gly Ile Thr Pro Asp Gly Thr Val Ile Val
 130 135 140
 Gly Thr Asn Tyr Ala Ile Gly Met Gly Ser Val Ala Val Lys Trp Val
 145 150 155 160
 Asn Gly Lys Val Ser Glu Leu Pro Met Leu Pro Asp Thr Leu Asp Ser
 165 170 175
 Val Ala Ser Ala Val Ser Ala Asp Gly Arg Val Ile Gly Gly Asn Arg
 180 185 190
 Asn Ile Asn Leu Gly Ala Ser Val Ala Val Lys Trp Glu Asp Asp Val
 195 200 205
 Ile Thr Gln Leu Pro Ser Leu Pro Asp Ala Met Asn Ala Cys Val Asn
 210 215 220
 Gly Ile Ser Ser Asp Gly Ser Ile Ile Val Gly Thr Met Val Asp Val
 225 230 235 240
 Ser Trp Arg Asn Thr Ala Val Gln Trp Ile Gly Asp Gln Leu Ser Val
 245 250 255
 Ile Gly Thr Leu Gly Gly Thr Thr Ser Val Ala Ser Ala Ile Ser Thr
 260 265 270
 Asp Gly Thr Val Ile Val Gly Gly Ser Glu Asn Ala Asp Ser Gln Thr
 275 280 285
 His Ala Tyr Ala Tyr Lys Asn Gly Val Met Ser Asp Ile Gly Thr Leu
 290 295 300
 Gly Gly Phe Tyr Ser Leu Ala His Ala Val Ser Ser Asp Gly Ser Val
 305 310 315 320
 Ile Val Gly Val Ser Thr Asn Ser Glu His Arg Tyr His Ala Phe Gln
 325 330 335
 Tyr Ala Asp Gly Gln Met Val Asp Leu Gly Thr Leu Gly Gly Pro Glu
 340 345 350
 Ser Tyr Ala Gln Gly Val Ser Gly Asp Gly Lys Val Ile Val Gly Arg
 355 360 365
 Ala Gln Val Pro Ser Gly Asp Trp His Ala Phe Leu Cys Pro Phe Gln
 370 375 380
 Ala Pro Ser Pro Ala Pro Val His Gly Gly Ser Thr Val Val Thr Ser
 385 390 395 400
 Gln Asn Pro Arg Gly Met Val Asp Ile Asn Ala Thr Tyr Ser Ser Leu
 405 410 415
 Lys Asn Ser Gln Gln Gln Leu Gln Arg Leu Leu Ile Gln His Ser Ala
 420 425 430
 Lys Val Glu Ser Val Ser Ser Gly Ala Pro Ser Phe Thr Ser Val Lys
 435 440 445
 Gly Ala Ile Ser Lys Gln Ser Pro Ala Val Gln Asn Asp Val Gln Lys
 450 455 460
 Gly Thr Phe Leu Ser Tyr Arg Ser Gln Val His Gly Asn Val Gln Asn
 465 470 475 480
 Gln Gln Leu Leu Thr Gly Ala Phe Met Asp Trp Lys Leu Ala Ser Ala
 485 490 495

Pro Lys Cys Gly Phe Lys Val Ala Leu His Tyr Gly Ser Gln Asp Ala
500 505 510
Leu Val Glu Arg Ala Ala Leu Pro Tyr Thr Glu Gln Gly Leu Gly Ser
515 520 525
Ser Val Leu Ser Gly Phe Gly Gly Gln Val Gln Gly Arg Tyr Asp Phe
530 535 540
Asn Leu Gly Glu Thr Val Val Leu Gln Pro Phe Met Gly Ile Gln Val
545 550 555 560
Leu His Leu Ser Arg Glu Gly Tyr Ser Glu Lys Asn Val Arg Phe Pro
565 570 575
Val Ser Tyr Asp Ser Val Ala Tyr Ser Ala Ala Thr Ser Phe Met Gly
580 585 590
Ala His Val Phe Ala Ser Leu Ser Pro Lys Met Ser Thr Ala Ala Thr
595 600 605
Leu Gly Val Glu Arg Asp Leu Asn Ser His Ile Asp Glu Phe Lys Gly
610 615 620
Ser Val Ser Ala Met Gly Asn Phe Val Leu Glu Asn Ser Thr Val Ser
625 630 635 640
Val Leu Arg Pro Phe Ala Ser Leu Ala Met Tyr Tyr Asp Val Arg Gln
645 650 655
Gln Gln Leu Val Thr Leu Ser Val Val Met Asn Gln Gln Pro Leu Thr
660 665 670
Gly Thr Leu Ser Leu Val Ser Gln Ser Ser Tyr Asn Leu Ser Phe
675 680 685

<210>849

<211>228

<212>PRT

<213>Chlamydia pneumoniae

<400>849

Val Leu Ile Leu Thr Trp Ile Asn Val Leu Thr Lys Leu Gly Leu Asn
1 5 10 15
Met Ser Lys Lys Ile Lys Val Leu Gly His Leu Thr Leu Cys Thr Leu
20 25 30
Phe Arg Gly Val Leu Cys Ala Ala Ala Leu Ser Asn Ile Gly Tyr Ala
35 40 45
Ser Thr Ser Gln Glu Ser Pro Tyr Gln Lys Ser Ile Glu Asp Trp Lys
50 55 60
Gly Tyr Thr Phe Thr Asp Leu Glu Leu Leu Ser Lys Glu Gly Trp Ser
65 70 75 80
Glu Ala His Ala Ile Ser Gly Asn Gly Ser Arg Ile Val Gly Ala Ser
85 90 95
Gly Ala Gly Gln Gly Ser Val Thr Ala Val Ile Trp Glu Ser His Leu
100 105 110
Ile Lys His Leu Gly Thr Leu Gly Gly Glu Ala Ser Ser Ala Glu Gly
115 120 125
Ile Ser Asn Asp Gly Glu Val Val Val Gly Trp Ser Asp Thr Arg Glu
130 135 140
Gly Tyr Thr His Ala Phe Val Phe Asp Gly Arg Asp Met Lys Asp Leu
145 150 155 160
Gly Thr Leu Gly Ala Thr Tyr Ser Val Ala Arg Gly Val Ser Gly Asp
165 170 175
Gly Ser Ile Ile Val Gly Val Ser Ala Thr Ala Arg Gly Glu Asp Tyr
180 185 190
Gly Met Ala Ser Trp Cys Gln Val Gly Lys Arg Glu Asn Gln Thr Ile
195 200 205
Glu Val Val Ala Ser Arg Ser Leu Gly Leu Arg Arg Met Gln Ser Leu
210 215 220
Arg Met Val Arg
225

<210>850

<211>173

<212>PRT

<213>Chlamydia pneumoniae

<400>850

Ser Cys Cys Leu Lys Val Ser Gly Ser Glu Ala Asn Ala Ile Ser Glu
 1 5 10 15
 Asp Gly Thr Val Ile Val Gly Arg Gly Glu Ile Ser Arg Asn His Ile
 20 25 30
 Val Ala Val Lys Trp Asn Lys Asn Ala Val Tyr Ser Leu Gly Thr Leu
 35 40 45
 Gly Gly Ser Val Ala Ser Ala Glu Ala Ile Ser Ala Asn Gly Lys Val
 50 55 60
 Ile Val Gly Trp Ser Thr Thr Asn Asn Gly Glu Thr His Ala Phe Met
 65 70 75 80
 His Lys Asp Glu Thr Met His Asp Leu Gly Thr Leu Gly Gly Gly Phe
 85 90 95
 Ser Val Ala Thr Gly Val Ser Ala Asp Gly Arg Ala Ile Val Gly Phe
 100 105 110
 Ser Ala Val Lys Thr Gly Glu Ile His Ala Phe Tyr Tyr Ala Glu Gly
 115 120 125
 Glu Met Glu Asp Leu Thr Thr Leu Gly Gly Glu Glu Ala Arg Val Phe
 130 135 140
 Asp Ile Ser Ser Glu Gly Asn Asp Ile Ile Gly Ser Ile Lys Thr Asp
 145 150 155 160
 Ala Gly Ala Glu Arg Ala Tyr Leu Phe His Ile His Lys
 165 170

<210>851

<211>349

<212>PRT

<213>Chlamydia pneumoniae

<400>851

Val Val Phe Glu Ile Ile Phe Val Val Arg Val Pro Met Lys Lys Thr
 1 5 10 15
 Cys Cys Gln Asn Tyr Arg Ser Ile Gly Val Val Phe Ser Val Val Leu
 20 25 30
 Phe Val Leu Thr Thr Gln Thr Leu Phe Ala Gly His Phe Ile Asp Ile
 35 40 45
 Gly Thr Ser Gly Leu Tyr Ser Trp Ala Arg Gly Val Ser Gly Asp Gly
 50 55 60
 Arg Val Val Val Gly Tyr Glu Gly Gly Asn Ala Phe Lys Tyr Val Asp
 65 70 75 80
 Gly Glu Lys Phe Leu Leu Glu Gly Leu Val Pro Arg Ser Glu Ala Leu
 85 90 95
 Val Phe Lys Ala Ser Tyr Asp Gly Ser Val Ile Ile Gly Ile Ser Asp
 100 105 110
 Gln Asp Pro Ser Cys Arg Ala Val Lys Trp Val Asn Gly Ala Leu Val
 115 120 125
 Asp Leu Gly Ile Phe Ser Glu Gly Met Gln Ser Phe Ala Glu Gly Val
 130 135 140
 Ser Ser Asp Gly Lys Thr Ile Val Gly Cys Leu Tyr Ser Asp Asp Thr
 145 150 155 160
 Glu Thr Asn Phe Ala Val Lys Trp Asp Glu Thr Gly Met Val Val Leu
 165 170 175
 Pro Asn Leu Pro Glu Asp Arg His Ser Cys Ala Trp Asp Ala Ser Glu
 180 185 190
 Asp Gly Ser Val Ile Val Gly Asp Ala Met Gly Ser Glu Glu Ile Ala
 195 200 205
 Lys Ala Val Tyr Trp Lys Asp Gly Glu Gln His Leu Leu Ser Asn Ile
 210 215 220
 Pro Gly Ala Lys Arg Ser Ser Ala His Ala Val Ser Lys Asp Gly Ser
 225 230 235 240
 Phe Ile Val Gly Glu Phe Ile Ser Glu Glu Asn Glu Val His Ala Phe
 245 250 255
 Val Tyr His Asn Gly Val Ile Lys Asp Ile Gly Thr Leu Gly Gly Asp
 260 265 270
 Tyr Ser Val Ala Thr Gly Val Ser Arg Asp Gly Lys Val Ile Val Gly
 275 280 285
 His Ser Thr Arg Thr Asp Gly Glu Tyr Arg Ala Phe Lys Tyr Val Asp

290 295 300
 Gly Arg Met Ile Asp Leu Gly Thr Leu Gly Gly Ser Ala Ser Phe Ala
 305 310 315 320
 Phe Gly Val Ser Asp Asp Gly Lys Thr Ile Val Gly Lys Phe Glu Thr
 325 330 335
 Glu Leu Gly Glu Cys His Ala Phe Ile Tyr Leu Asp Asp
 340 345

<210>852

<211>354

<212>PRT

<213>Chlamydia pneumoniae

<400>852

Lys Arg Glu Glu Asn Met Ala Ala Ile Lys Gln Ile Leu Arg Ser Met
 1 5 10 15
 Leu Ser Gln Ser Ser Leu Trp Met Val Leu Phe Ser Leu Tyr Ser Leu
 20 25 30
 Ser Gly Tyr Cys Tyr Val Ile Thr Asp Lys Pro Glu Asp Asp Phe His
 35 40 45
 Ser Ser Ser Ala Val Lys Trp Asp His Trp Gly Lys Thr Thr Leu Ser
 50 55 60
 Arg Leu Ser Asn Lys Lys Ala Ser Ala Lys Ala Val Ser Gly Thr Gly
 65 70 75 80
 Ala Thr Thr Val Gly Phe Ile Lys Asp Thr Trp Ser Arg Thr Tyr Ala
 85 90 95
 Val Arg Trp Asn Tyr Trp Gly Thr Lys Glu Leu Pro Thr Ser Ser Trp
 100 105 110
 Val Lys Lys Ser Lys Ala Thr Gly Ile Ser Ser Asp Gly Ser Ile Ile
 115 120 125
 Ala Gly Ile Val Glu Asn Glu Leu Ser Gln Ser Phe Ala Val Thr Trp
 130 135 140
 Lys Asn Asn Glu Met Tyr Leu Leu Pro Ser Thr Trp Ala Val Gln Ser
 145 150 155 160
 Lys Ala Tyr Gly Ile Ser Ser Asp Gly Ser Val Ile Val Gly Ser Ala
 165 170 175
 Lys Asp Ala Trp Ser Arg Thr Phe Ala Val Lys Trp Thr Gly His Glu
 180 185 190
 Ala Gln Val Leu Pro Val Gly Trp Ala Val Lys Ser Val Ala Asn Ser
 195 200 205
 Val Ser Ala Asn Gly Ser Ile Val Gly Ser Val Gln Asp Ala Ser
 210 215 220
 Gly Ile Leu Tyr Ala Val Lys Trp Glu Gly Asn Thr Ile Thr His Leu
 225 230 235 240
 Gly Thr Leu Gly Gly Tyr Ser Ala Ile Ala Lys Ala Val Ser Asn Asn
 245 250 255
 Gly Lys Val Ile Val Gly Arg Ser Glu Thr Tyr Tyr Gly Glu Val His
 260 265 270
 Ala Phe Cys His Lys Asn Gly Val Met Ser Asp Leu Gly Thr Leu Gly
 275 280 285
 Gly Ser Tyr Ser Ala Ala Lys Gly Val Ser Ala Thr Gly Lys Val Ile
 290 295 300
 Val Gly Met Ser Thr Thr Ala Asn Gly Lys Leu His Ala Phe Lys Tyr
 305 310 315 320
 Val Gly Gly Arg Met Ile Asp Leu Gly Glu Tyr Ser Trp Lys Glu Ala
 325 330 335
 Cys Ala Asn Ala Val Ser Ile Asp Gly Glu Ile Ile Val Gly Val Gln
 340 345 350
 Ser Glu

<210>853

<211>452

<212>PRT

<213>Chlamydia pneumoniae

<400>853

Met Phe Glu Ala Val Ile Ala Asp Ile Gln Ala Arg Glu Ile Leu Asp

1 5 10 15
 Ser Arg Gly Tyr Pro Thr Leu His Val Lys Val Thr Thr Ser Thr Gly
 20 25 30
 Ser Val Gly Glu Ala Arg Val Pro Ser Gly Ala Ser Thr Gly Lys Lys
 35 40 45
 Glu Ala Leu Glu Phe Arg Asp Thr Asp Ser Pro Arg Tyr Gln Gly Lys
 50 55 60
 Gly Val Leu Gln Ala Val Lys Asn Val Lys Glu Ile Leu Phe Pro Leu
 65 70 75 80
 Val Lys Gly Cys Ser Val Tyr Glu Gln Ser Leu Ile Asp Ser Leu Met
 85 90 95
 Met Asp Ser Asp Gly Ser Pro Asn Lys Glu Thr Leu Gly Ala Asn Ala
 100 105 110
 Ile Leu Gly Val Ser Leu Ala Thr Ala His Ala Ala Ala Thr Leu
 115 120 125
 Arg Arg Pro Leu Tyr Arg Tyr Leu Gly Gly Cys Phe Ala Cys Ser Leu
 130 135 140
 Pro Cys Pro Met Met Asn Leu Ile Asn Gly Gly Met His Ala Asp Asn
 145 150 155 160
 Gly Leu Gly Phe Gln Glu Phe Met Ile Arg Pro Ile Gly Ala Ser Ser
 165 170 175
 Ile Lys Glu Ala Val Asn Met Gly Ala Asp Val Phe His Thr Leu Lys
 180 185 190
 Lys Leu Leu His Glu Arg Gly Leu Ser Thr Gly Val Gly Asp Glu Gly
 195 200 205
 Gly Phe Ala Pro Asn Leu Ala Ser Asn Glu Glu Ala Leu Glu Leu Leu
 210 215 220
 Leu Leu Ala Ile Glu Lys Ala Gly Phe Thr Pro Gly Lys Asp Ile Ser
 225 230 235 240
 Leu Ala Leu Asp Cys Ala Ala Ser Ser Phe Tyr Asn Val Lys Thr Gly
 245 250 255
 Thr Tyr Asp Gly Arg His Tyr Glu Glu Gln Ile Ala Ile Leu Ser Asn
 260 265 270
 Leu Cys Asp Arg Tyr Pro Ile Asp Ser Ile Glu Asp Gly Leu Ala Glu
 275 280 285
 Glu Asp Tyr Asp Gly Trp Ala Leu Leu Thr Glu Val Leu Gly Glu Lys
 290 295 300
 Val Gln Ile Val Gly Asp Asp Leu Phe Val Thr Asn Pro Glu Leu Ile
 305 310 315 320
 Leu Glu Gly Ile Ser Asn Gly Leu Ala Asn Ser Val Leu Ile Lys Pro
 325 330 335
 Asn Gln Ile Gly Thr Leu Thr Glu Thr Val Tyr Ala Ile Lys Leu Arg
 340 345 350
 Lys Trp Leu Ala Ile Leu Gln Leu Phe Leu Ile Ala Gln Glu Lys Leu
 355 360 365
 Arg Thr Leu Arg Leu Gln Ile Leu Leu Leu Pro Ser Thr Leu Val Lys
 370 375 380
 Ser Lys Gln Ala Leu Tyr His Val Leu Ser Val Leu Gln Asn Thr Ile
 385 390 395 400
 Asp Ser Trp Lys Leu Lys Lys Ser Leu Asp Pro Lys Gln Phe Ser Gln
 405 410 415
 Ile Leu Met Tyr Phe Leu Thr Arg Ile Leu Arg Asn Arg Gly Ile Phe
 420 425 430
 Ser Ile Ser Ile Leu Ser Pro Asn Gln Glu Tyr Ile Ala Asp Leu Trp
 435 440 445
 Ala Leu Ser Phe
 450

<210>854

<211>84

<212>PRT

<213>Chlamydia pneumoniae

<400>854

Asn Ser Val Cys Tyr Gln Val Ala Gln Met Ala Gly Tyr Thr Thr Ile
 1 5 10 15

Ile Ser His Arg Ser Gly Glu Thr Thr Asp Thr Thr Ile Ala Asp Leu
20 25 30
Ala Val Ala Phe Asn Ala Gly Gln Ile Lys Thr Gly Ser Leu Ser Arg
35 40 45
Ser Glu Arg Val Ala Lys Tyr Asn Arg Leu Met Glu Ile Glu Glu Glu
50 55 60
Leu Gly Ser Glu Ala Ile Phe Thr Asp Ser Asn Val Phe Ser Tyr Glu
65 70 75 80
Asp Ser Glu Glu

<210>855

<211>285

<212>PRT

<213>Chlamydia pneumoniae

<400>855

Pro Phe Glu Glu Ala Gln Lys Tyr Phe Arg Lys Val Ile Tyr Val Ser
1 5 10 15
Ala Thr Pro Gly Asp Thr Glu Val Gln Glu Ser Ser Gly His Ile Val
20 25 30
Gln Gln Ile Ile Arg Pro Thr Gly Ile Pro Asp Pro Met Pro Glu Ile
35 40 45
Arg Pro Ala Thr Gly Gln Val Asp Asp Leu Leu Glu Ile Arg Leu
50 55 60
Arg Leu Ser Gln Lys His Glu Lys Ile Leu Val Ile Ser Ile Thr Lys
65 70 75 80
Lys Leu Ala Glu Asp Met Ala Gly Phe Leu Ser Glu Leu Glu Ile Pro
85 90 95
Ala Ala Tyr Leu His Ser Gly Ile Glu Thr Ala Glu Arg Thr Gln Ile
100 105 110
Leu Thr Asp Leu Arg Ser Gly Val Ile Asp Val Leu Ile Gly Val Asn
115 120 125
Leu Leu Arg Glu Gly Leu Asp Leu Pro Glu Val Ser Leu Val Ala Ile
130 135 140
Leu Asp Ala Asp Lys Glu Gly Phe Leu Arg Ser Thr Ser Ser Leu Ile
145 150 155 160
Gln Phe Cys Gly Arg Ala Ala Arg Asn Ile Asn Gly Lys Val Ile Phe
165 170 175
Tyr Ala Asp Gln Lys Thr Arg Ser Ile Glu Glu Thr Leu Arg Glu Thr
180 185 190
Glu Arg Arg Arg Gln Ile Gln Leu Asp Tyr Asn Lys Glu His Asn Ile
195 200 205
Val Pro Lys Pro Ile Ile Lys Ala Ile Phe Ala Asn Pro Ile Leu Gln
210 215 220
Thr Ser Lys Asp Ser Glu Ser Pro Lys Glu Ser Gln Arg Pro Leu Ser
225 230 235 240
Lys Glu Asp Leu Glu Glu Gln Ile Lys Lys Tyr Glu Ala Leu Met Gln
245 250 255
Arg Ala Ala Lys Glu Phe Arg Phe Asn Glu Ala Ala Lys Tyr Arg Asp
260 265 270
Ala Met Gln Ala Cys Lys Glu Gln Leu Leu Tyr Leu Phe
275 280 285

<210>856

<211>372

<212>PRT

<213>Chlamydia pneumoniae

<400>856

Ile Ile Phe Thr Met Thr Phe Gln Leu His Ala Pro Phe Ala Pro Cys
1 5 10 15
Gly Asp Gln Pro Glu Ala Ile Ala Arg Leu Ser Ala Gly Val Arg Asn
20 25 30
Gln Val Lys Ser Gln Val Leu Leu Gly Thr Thr Gly Ser Gly Lys Thr
35 40 45
Phe Thr Ile Ala Asn Val Val Ala Asn Val Asn Leu Pro Thr Leu Val
50 55 60

Leu Ala His Asn Lys Thr Leu Ala Ala Gln Leu Tyr Gln Glu Phe Arg
 65 70 75 80
 Glu Phe Phe Pro Asn Asn Ala Val Glu Tyr Phe Ile Ser Tyr Tyr Asp
 85 90 95
 Tyr Tyr Gln Pro Glu Ala Tyr Ile Ala Arg Ser Asp Thr Tyr Ile Glu
 100 105 110
 Lys Ser Leu Leu Ile Asn Asp Glu Ile Asp Lys Leu Arg Leu Ser Ala
 115 120 125
 Thr Arg Ser Ile Leu Glu Arg Arg Asp Thr Leu Ile Val Ser Ser Val
 130 135 140
 Ser Cys Ile Tyr Gly Ile Gly Ser Pro Glu Asn Tyr Thr Ser Met Ala
 145 150 155 160
 Leu Val Leu Glu Val Gly Lys Glu Tyr Pro Arg Asn Ile Leu Thr Ala
 165 170 175
 Gln Leu Val Lys Met His Tyr Gln Ala Ser Pro Ile Pro Gln Arg Ser
 180 185 190
 Ala Phe Arg Glu Arg Gly Ser Val Ile Asp Ile Phe Pro Ala Tyr Glu
 195 200 205
 Ser Glu Leu Ala Leu Arg Leu Glu Phe Leu Asn Asp Thr Leu Thr Ser
 210 215 220
 Ile Glu Tyr Ser Asp Pro Leu Thr Met Ile Pro Lys Glu Ser Val Pro
 225 230 235 240
 Ser Ala Thr Leu Tyr Pro Gly Ser His Tyr Val Ile Pro Glu Ala Ile
 245 250 255
 Arg Glu Gln Ala Ile Arg Thr Ile Gln Glu Glu Leu Glu Glu Arg Met
 260 265 270
 Ala Phe Phe Asp Asp Arg Pro Ile Glu Lys Asp Arg Ile Phe His Arg
 275 280 285
 Thr Thr His Asp Ile Glu Met Ile Lys Glu Ile Gly Phe Cys Lys Gly
 290 295 300
 Ile Glu Asn Tyr Ser Arg His Phe Thr Gly Ala Pro Pro Gly Ala Pro
 305 310 315 320
 Pro Thr Cys Leu Leu Asp Tyr Phe Pro Glu Asp Phe Leu Leu Ile Ile
 325 330 335
 Asp Glu Ser His Gln Thr Leu Pro Gln Ile Arg Ala Met Tyr Arg Gly
 340 345 350
 Asp Gln Ser Arg Lys Gln Ser Leu Val Glu Tyr Gly Phe Arg Phe Pro
 355 360 365
 Ser Gly Leu Arg
 370

<210>857

<211>344

<212>PRT

<213>Chlamydia pneumoniae

<400>857

Met Asn Lys Lys Lys Arg Val Leu Thr Gly Asp Arg Pro Thr Gly Lys
 1 5 10 15
 Leu His Leu Gly His Trp Val Gly Ser Ile Lys Asn Arg Leu Glu Leu
 20 25 30
 Gln Asn Ser Pro Glu Tyr Asp Cys Phe Phe Ile Ile Ala Asp Leu His
 35 40 45
 Thr Leu Thr Thr Lys Ile Arg Lys Glu Glu Val Leu Asp Val Asp Asn
 50 55 60
 His Ile Tyr Glu Val Leu Ala Asp Trp Leu Ser Val Gly Ile Asp Pro
 65 70 75 80
 Thr Lys Ser Ile Ile Tyr Leu Gln Ser Ala Ile Pro Glu Ile Tyr Glu
 85 90 95
 Leu His Leu Leu Phe Ser Met Leu Ile Ser Ile Asn Arg Val Met Gly
 100 105 110
 Ile Pro Ser Leu Lys Asp Met Ala Arg Asn Ala Ser Ile Glu Glu Gly
 115 120 125
 Ser Leu Ser Tyr Gly Leu Ile Gly Tyr Pro Ile Leu Gln Ser Ala Asp
 130 135 140
 Ile Leu Leu Ala Lys Ala Gln Phe Val Pro Val Gly Lys Asp Asn Glu

145 150 155 160
Ala His Val Glu Leu Thr Arg Asp Ile Ala Arg Asn Phe Asn Arg Leu
165 170 175
Tyr Gly Gln Val Phe Pro Glu Pro Glu Val Leu Gln Gly Glu Leu Thr
180 185 190
Ser Leu Val Gly Ile Asp Gly Gln Gly Lys Met Ser Lys Ser Ala Asn
195 200 205
Asn Ala Ile Tyr Leu Ser Asp Ser Asp Ala Thr Ile Thr Glu Lys Val
210 215 220
Arg Lys Met Tyr Thr Asp Pro Asn Arg Ile Arg Ala Thr Thr Pro Gly
225 230 235 240
Arg Val Glu Gly Asn Pro Leu Phe Ile Tyr His Asp Ile Phe Asn Pro
245 250 255
His Lys Asp Glu Val Glu Glu Phe Lys Ala Arg Tyr Arg Gln Gly Cys
260 265 270
Ile Lys Asp Ile Glu Val Lys Ala Arg Leu Ala Glu Glu Leu Ile His
275 280 285
Phe Leu Lys Pro Ile Lys Glu Arg Arg Ser Glu Phe Leu Ser Lys Pro
290 295 300
Leu Ala Leu Gln Asn Val Leu Glu Asp Gly Thr His Lys Met Arg Glu
305 310 315 320
Val Ala Lys Val Thr Met Glu Glu Val His Asp Lys Phe Gly Phe Ser
325 330 335
His Lys Trp Arg Ser Leu Leu Lys
340

<210>858

<211>185

<212>PRT

<213>Chlamydia pneumoniae

<400>858

Phe Met Ala Ala Lys Thr Lys Thr Leu Glu Leu Glu Asp Asn Val Phe
1 5 10 15
Leu Leu Leu Glu Gly Asn Leu Lys Arg Ile Phe Ala Thr Pro Ile Gly
20 25 30
Tyr Thr Thr Phe Arg Glu Phe Gln Asn Val Val Phe Asn Cys Ala Asn
35 40 45
Gly Gln Gln Glu Ile Ala Asn Phe Phe Phe Glu Met Leu Ile Asn Gly
50 55 60
Lys Leu Thr Gln Glu Leu Ala Pro Gln Gln Lys Gln Ala Ala His Ser
65 70 75 80
Leu Ile Ala Glu Phe Met Met Pro Ile Arg Val Ala Lys Asp Ile His
85 90 95
Glu Arg Gly Glu Phe Ile Asn Phe Ile Thr Ser Asp Met Leu Thr Gln
100 105 110
Gln Glu Arg Cys Ile Phe Leu Asn Arg Leu Ala Arg Val Asp Gly Gln
115 120 125
Glu Phe Leu Leu Met Thr Asp Val Gln Asn Thr Cys His Leu Ile Arg
130 135 140
His Leu Leu Ala Arg Leu Leu Glu Ala Gln Lys Asn Pro Val Gly Glu
145 150 155 160
Lys Asn Leu Gln Glu Ile Gln Glu Glu Ile Thr Ser Leu Lys Asn His
165 170 175
Phe Asp Glu Leu Thr Lys Ala Leu Gln
180 185

<210>859

<211>250

<212>PRT

<213>Chlamydia pneumoniae

<400>859

Met Gly Asn Leu Lys Thr Leu Leu Glu Ser Arg Phe Lys Lys Asn Thr
1 5 10 15
Pro Thr Lys Met Glu Ala Leu Ala Arg Lys Arg Met Glu Gly Asp Pro
20 25 30
Ser Pro Leu Ala Val Arg Leu Ser Asn Pro Thr Leu Ser Ser Lys Glu

35 40 45
 Lys Glu Gln Leu Arg His Leu Leu Gln His Tyr Asn Phe Arg Glu Gln
 50 55 60
 Ile Glu Glu Pro Asp Leu Thr Gln Leu Cys Thr Leu Ser Ala Glu Val
 65 70 75 80
 Lys Gln Ile His His Gln Ser Val Leu Leu His Gly Glu Arg Ile Thr
 85 90 95
 Lys Val Arg Asp Leu Leu Lys Ser Tyr Arg Glu Gly Ala Phe Ser Ser
 100 105 110
 Trp Leu Leu Leu Thr Tyr Gly Asn Arg Gln Thr Pro Tyr Asn Phe Leu
 115 120 125
 Val Tyr Tyr Glu Leu Phe Thr Leu Leu Pro Glu Pro Leu Lys Ile Glu
 130 135 140
 Met Glu Lys Met Pro Arg Gln Ala Val Tyr Thr Leu Ala Ser Arg Gln
 145 150 155 160
 Gly Pro Gln Glu Lys Lys Glu Glu Ile Ile Arg Asn Tyr Arg Gly Glu
 165 170 175
 Arg Lys Ser Glu Leu Leu Asp Arg Ile Arg Lys Glu Phe Pro Leu Val
 180 185 190
 Glu Thr Asp Cys Arg Lys Thr Ser Pro Val Lys Gln Ala Leu Ala Met
 195 200 205
 Leu Thr Lys Gly Ser Gln Ile Leu Thr Lys Cys Thr Ser Leu Ser Ser
 210 215 220
 Asp Glu Gln Ile Ile Leu Glu Lys Leu Ile Lys Lys Leu Glu Lys Val
 225 230 235 240
 Lys Ser Asn Leu Phe Pro Asp Thr Lys Val
 245 250

<210>860

<211>255

<212>PRT

<213>Chlamydia pneumoniae

<400>860

Met Lys Thr Ile Ala Val Asn Ser Phe Lys Gly Gly Thr Ala Lys Thr
 1 5 10 15
 Ser Thr Thr Leu His Leu Gly Ala Ala Leu Ala Gln Tyr His Gln Ala
 20 25 30
 Arg Val Leu Leu Ile Asp Phe Asp Ala Gln Ala Asn Leu Thr Ser Gly
 35 40 45
 Leu Gly Leu Asp Pro Asp Cys Tyr Asp Ser Leu Ala Val Val Leu Gln
 50 55 60
 Gly Glu Lys Glu Ile Gln Glu Val Ile Arg Pro Ile Gln Asp Thr Gln
 65 70 75 80
 Leu Asp Leu Ile Pro Ala Asp Thr Trp Leu Glu Arg Ile Glu Val Ser
 85 90 95
 Gly Asn Leu Ala Ala Asp Arg Tyr Ser His Glu Arg Leu Lys Tyr Val
 100 105 110
 Leu Gly Ser Val Gln Asp Lys Tyr Asp Tyr Val Ile Ile Asp Thr Pro
 115 120 125
 Pro Ser Leu Cys Trp Leu Thr Glu Ser Ala Leu Ile Ala Ala Asp Tyr
 130 135 140
 Ala Leu Ile Cys Ala Thr Pro Glu Phe Tyr Ser Val Lys Gly Leu Glu
 145 150 155 160
 Arg Leu Ala Gly Phe Ile Gln Gly Ile Ser Ala Arg His Pro Leu Thr
 165 170 175
 Ile Leu Gly Val Ala Leu Ser Phe Trp Asn Cys Arg Gly Lys Asn Asn
 180 185 190
 Ser Ala Phe Ala Glu Leu Ile His Lys Thr Phe Pro Gly Lys Leu Leu
 195 200 205
 Asn Thr Lys Ile Arg Arg Asp Ile Thr Val Ser Glu Ala Ala Ile His
 210 215 220
 Gly Lys Pro Val Phe Ala Thr Ser Pro Ser Ala Arg Ala Ser Glu Asp
 225 230 235 240
 Tyr Phe Asn Leu Thr Lys Glu Leu Leu Ile Leu Leu Arg Asp Ile
 245 250 255

<210>861

<211>593

<212>PRT

<213>Chlamydia pneumoniae

<400>861

Arg Ser Phe His Pro Pro Lys Arg Arg Arg His Leu Ser Ile Ser Asp
 1 5 10 15
 Phe Arg Arg Ser Arg Arg Arg Glu Ile Phe Leu His Thr Ser Ala His
 20 25 30
 Leu Leu Ala Gln Ala Val Leu Arg Leu Trp Pro Asp Ala Ile Pro Thr
 35 40 45
 Ile Gly Pro Val Ile Asp His Gly Phe Tyr Tyr Asp Phe Ala Asn Leu
 50 55 60
 Ser Ile Ser Glu Ser Asp Phe Pro Leu Ile Glu Asp Thr Val Lys Gln
 65 70 75 80
 Ile Val Asp Glu Lys Leu Ala Ile Ser Arg Phe Thr Tyr Gly Asp Lys
 85 90 95
 Gln Gln Ala Leu Ala Gln Phe Pro Gln Asn Pro Phe Lys Thr Glu Leu
 100 105 110
 Ile Arg Glu Leu Pro Glu Asn Glu Glu Ile Ser Ala Tyr Ser Gln Gly
 115 120 125
 Glu Phe Phe Asp Leu Cys Arg Gly Pro His Leu Pro Ser Thr Ala His
 130 135 140
 Val Lys Ala Phe Lys Val Leu Arg Thr Ser Ala Ala Tyr Trp Arg Gly
 145 150 155 160
 Asp Pro Ser Arg Glu Ser Leu Val Arg Ile Tyr Gly Thr Ser Phe Pro
 165 170 175
 Thr Ser Lys Glu Leu Arg Ala His Leu Glu Gln Ile Glu Glu Ala Lys
 180 185 190
 Lys Arg Asp His Arg Val Leu Gly Ala Lys Leu Asp Leu Phe Ser Gln
 195 200 205
 Gln Glu Ser Ser Pro Gly Met Pro Phe Phe His Pro Arg Gly Met Ile
 210 215 220
 Val Trp Asp Ala Leu Ile Arg Tyr Trp Lys Gln Leu His Thr Ala Ala
 225 230 235 240
 Gly Tyr Lys Glu Ile Leu Thr Pro Gln Leu Met Asn Arg Gln Leu Trp
 245 250 255
 Glu Val Ser Gly His Trp Asp Asn Tyr Lys Ala Asn Met Tyr Thr Leu
 260 265 270
 Gln Ile Asp Asp Glu Asp Tyr Ala Ile Lys Pro Met Asn Cys Pro Gly
 275 280 285
 Cys Met Leu Tyr Tyr Lys Thr Arg Leu His Ser Tyr Lys Glu Phe Pro
 290 295 300
 Leu Arg Val Ala Glu Val Gly His Val His Arg Gln Glu Ala Ser Gly
 305 310 315 320
 Ala Leu Ser Gly Leu Met Arg Val Arg Ala Phe His Gln Asp Asp Ala
 325 330 335
 His Val Phe Leu Thr Pro Glu Gln Val Glu Glu Glu Thr Leu Asn Ile
 340 345 350
 Leu Gln Leu Val Ser Thr Leu Tyr Gly Thr Phe Gly Leu Glu Tyr His
 355 360 365
 Leu Glu Leu Ser Thr Arg Pro Glu Lys Asp Thr Ile Gly Asp Asp Ser
 370 375 380
 Leu Trp Glu Leu Ala Thr Asp Ala Leu Asn Arg Ala Leu Val Gln Ser
 385 390 395 400
 Gly Thr Pro Phe Ile Val Arg Pro Gly Glu Gly Ala Phe Tyr Gly Pro
 405 410 415
 Lys Ile Asp Ile His Val Lys Asp Ala Ile Gln Arg Thr Trp Gln Cys
 420 425 430
 Gly Thr Ile Gln Leu Asp Met Phe Leu Pro Glu Arg Phe Glu Leu Glu
 435 440 445
 Tyr Thr Thr Ala Gln Gly Thr Lys Ser Val Pro Val Met Leu His Arg
 450 455 460
 Ala Leu Phe Gly Ser Ile Glu Arg Phe Leu Gly Ile Leu Ile Glu Asn

465 470 475 480
 Phe Lys Gly Arg Phe Pro Leu Trp Leu Ser Pro Glu Gln Val Arg Ile
 485 490 495
 Ile Thr Val Ala Asp Arg His Ile Pro Arg Ala Lys Glu Leu Glu Glu
 500 505 510
 Ala Trp Lys Arg Leu Gly Leu Val Val Thr Leu Asp Asp Ser Ser Glu
 515 520 525
 Ser Val Ser Lys Lys Ile Arg Asn Ala Gln Asn Met Gln Val Asn Tyr
 530 535 540
 Met Ile Thr Leu Gly Asp His Glu Ile Asn Glu Asn Val Leu Ala Val
 545 550 555 560
 Arg Thr Arg Asp Asn Arg Val Ile Asn Asp Val Ser Val Glu Arg Phe
 565 570 575
 Leu Asn Thr Ile Leu Glu Glu Lys Asn Ser Leu Ser Leu Thr Ala Leu
 580 585 590
 Leu

<210>862

<211>90

<212>PRT

<213>Chlamydia pneumoniae

<400>862

Leu Thr Cys Met Phe Trp Ala Leu Arg Ile Phe Leu Leu Thr Asp Ser
 1 5 10 15
 Leu Glu Ser Ser Lys Val Thr Thr Lys Pro Lys Arg Phe His Ala Ser
 20 25 30
 Ser Ser Ser Phe Ala Leu Gly Ile Trp Arg Ser Ala Thr Val Met Ile
 35 40 45
 Arg Thr Cys Ser Gly Leu Asn His Lys Gly Asn Leu Pro Leu Lys Phe
 50 55 60
 Ser Ile Arg Ile Pro Lys Lys Arg Ser Ile Glu Pro Lys Arg Ala Arg
 65 70 75 80
 Cys Asn Ile Thr Gly Thr Leu Leu Val Pro
 85 90

<210>863

<211>90

<212>PRT

<213>Chlamydia pneumoniae

<400>863

Asn Ala Asn Asn Glu Ser Pro Pro Asn Met Glu Ala Trp Asn Lys Met
 1 5 10 15
 Ile Gln Val Thr Cys Asp Gln Lys Asn Tyr Glu Val Leu Glu Gly Thr
 20 25 30
 Thr Ala Ala Glu Leu Ala Lys Gln Leu Lys Asn Ser His Gln Phe Ile
 35 40 45
 Gly Val Leu Ile Asn Glu Arg Pro Arg Asp Leu Ser Thr His Leu Asn
 50 55 60
 Glu Gly Asp Thr Leu Val Phe Leu Thr Ser Glu Asp Pro Glu Asp Glu
 65 70 75 80
 Lys Phe Phe Phe Ile Leu Leu Pro Ile Phe
 85 90

<210>864

<211>310

<212>PRT

<213>Chlamydia pneumoniae

<400>864

Thr Leu Gln Thr Gly Leu His Met Ser Leu Phe Leu Val Phe Leu Thr
 1 5 10 15
 Ala Phe Ile Trp Ser Ser Ser Phe Ala Leu Ser Lys Leu Val Met Asn
 20 25 30
 Ala Ser Ala Pro Ile Phe Ala Thr Gly Ala Arg Met Val Ile Ala Gly
 35 40 45
 Ala Ile Leu Ala Leu Ala Ala Trp Phe Arg Gly Gly Phe Val Gly Ile
 50 55 60

Ser Lys Lys Ile Phe Leu Tyr Ile Val Leu Leu Ala Leu Thr Gly Phe
 65 70 75 80
 Tyr Leu Thr Asn Ile Phe Glu Phe Ile Gly Leu Gln Ser Leu Ser Ser
 85 90 95
 Ser Lys Thr Cys Phe Ile Tyr Gly Leu Ser Pro Leu Met Ser Ala Leu
 100 105 110
 Phe Ser Tyr Ile Gln Leu Lys Glu Lys Val Thr Leu Lys Lys Val Leu
 115 120 125
 Gly Leu Ser Leu Gly Leu Val Ser Tyr Ile Cys Tyr Leu Thr Phe Gly
 130 135 140
 Gly Gly Gly Asp Asp Ser Gln Pro Trp Thr Trp Gln Ile Gly Leu Pro
 145 150 155 160
 Glu Leu Leu Ile Leu Gly Ala Ala Ser Leu Ala Ser Phe Gly Trp Thr
 165 170 175
 Leu Leu Arg Gln Ile Glu Lys Gln Ser Thr Leu Ser Val Thr Ala Ile
 180 185 190
 Asn Ala Tyr Ala Met Leu Ile Ala Gly Met Leu Ser Ile Met His Ser
 195 200 205
 Ala Val Val Glu Pro Trp Arg Pro Leu Pro Val Gln Asp Ile Ser Gln
 210 215 220
 Phe Leu Tyr Ala Thr Leu Ala Leu Val Val Ile Ser Asn Leu Ile Cys
 225 230 235 240
 Tyr Asn Leu Tyr Ala Lys Leu Leu Arg Lys Tyr Ser Ser Thr Phe Leu
 245 250 255
 Ser Phe Cys Asn Leu Val Met Pro Leu Tyr Ser Gly Phe Tyr Gly Trp
 260 265 270
 Ile Leu Leu Gly Glu Lys Gly Val Ser Leu Gly Leu Val Leu Ala Val
 275 280 285
 Ala Phe Met Val Ala Gly Cys Arg Leu Ile Tyr His Glu Glu Phe Arg
 290 295 300
 Gln Gly Tyr Ile Val Ser
 305 310

<210>865

<211>118

<212>PRT

<213>Chlamydia pneumoniae

<400>865

Lys Ser Leu Gln Arg Tyr Glu Arg Ser Glu Thr Gln Gly Ala Arg Val
 1 5 10 15
 Ala Ser Phe Ala Gly Asn Ala Leu Ser Ser Ser Met Gln Met Ser Gln
 20 25 30
 Leu Met His Gly Leu Thr Ala Ala Val Glu Gly Leu Ser Ala Gly Gln
 35 40 45
 Thr Gly Ile Glu Val Ala His His Gln Arg Leu Ala Gly Gln Ala Glu
 50 55 60
 Ala Gln Ala Glu Val Leu Lys Gln Met Ser Ser Val Tyr Gly Gln Gln
 65 70 75 80
 Ala Gly Gln Ala Gly Gln Leu Gln Glu Gln Ala Met Gln Ser Phe Asn
 85 90 95
 Thr Ala Leu Gln Thr Leu Gln Asn Ile Ala Asp Ser Gln Thr Gln Thr
 100 105 110
 Thr Ser Ala Ile Phe Asn
 115

<210>866

<211>392

<212>PRT

<213>Chlamydia pneumoniae

<400>866

Leu Lys Lys Leu Pro Ser Trp Ala Leu Lys Ser Leu Lys Arg Met Pro
 1 5 10 15
 Gln Ser Ala Glu Pro Ser Trp Arg Ser Ile Lys Pro Ile Ile Phe Lys
 20 25 30
 Gly Ala Cys Ile Ala Met Thr Ser Gly Val Ser Gly Ser Ser Ser Gln
 35 40 45

Asp Pro Thr Leu Ala Ala Gln Leu Ala Gln Ser Ser Gln Lys Ala Gly
 50 55 60
 Asn Ala Gln Ser Gly His Asp Thr Lys Asn Val Thr Lys Gln Gly Ala
 65 70 75 80
 Gln Ala Glu Val Ala Ala Gly Gly Phe Glu Asp Leu Ile Gln Asp Ala
 85 90 95
 Ser Ala Gln Ser Thr Gly Lys Lys Glu Ala Thr Ser Ser Thr Thr Lys
 100 105 110
 Ser Ser Lys Gly Glu Lys Ser Glu Lys Ser Gly Lys Ser Lys Ser Ser
 115 120 125
 Thr Ser Val Ala Ser Ala Ser Lys Thr Ala Thr Ala Gln Ala Val Gln
 130 135 140
 Gly Pro Lys Gly Leu Arg Gln Asn Asn Tyr Asp Ser Pro Ser Leu Pro
 145 150 155 160
 Thr Pro Glu Ala Gln Thr Ile Asn Gly Ile Val Leu Lys Lys Gly Met
 165 170 175
 Gly Thr Leu Ala Leu Leu Gly Leu Val Met Thr Leu Met Ala Asn Ala
 180 185 190
 Ala Gly Glu Ser Trp Lys Ala Ser Phe Gln Ser Gln Asn Gln Ala Ile
 195 200 205
 Arg Ser Gln Val Glu Ser Ala Pro Ala Ile Gly Glu Ala Ile Lys Arg
 210 215 220
 Gln Ala Asn His Gln Ala Ser Ala Thr Glu Ala Gln Ala Lys Gln Ser
 225 230 235 240
 Leu Ile Ser Gly Ile Val Asn Ile Val Gly Phe Thr Val Ser Val Gly
 245 250 255
 Ala Gly Ile Phe Ser Ala Ala Lys Gly Ala Thr Ser Ala Leu Lys Ser
 260 265 270
 Ala Ser Phe Ala Lys Glu Thr Gly Ala Ser Ala Ala Gly Gly Ala Ala
 275 280 285
 Ser Lys Ala Leu Thr Ser Ala Ser Ser Ser Val Gln Gln Thr Met Ala
 290 295 300
 Ser Thr Ala Lys Ala Ala Thr Thr Ala Ala Ser Ser Ala Gly Ser Ala
 305 310 315 320
 Ala Thr Lys Ala Ala Ala Asn Leu Thr Asp Asp Met Ala Ala Ala Ala
 325 330 335
 Ser Lys Met Ala Ser Asp Gly Ala Ser Lys Ala Ser Gly Gly Leu Phe
 340 345 350
 Gly Glu Val Leu Asn Lys Pro Asn Trp Ser Glu Lys Val Ser Arg Gly
 355 360 365
 Met Asn Val Val Lys Leu Arg Glu Arg Val Leu His His Leu Gln Glu
 370 375 380
 Met Leu Phe Leu Pro Leu Cys Lys
 385 390

<210>867

<211>496

<212>PRT

<213>Chlamydia pneumoniae

<400>867

Asp Thr Asn Met Ser Ile Ser Ser Ser Ser Gly Pro Asp Asn Gln Lys
 1 5 10 15
 Asn Ile Met Ser Gln Val Leu Thr Ser Thr Pro Gln Gly Val Pro Gln
 20 25 30
 Gln Asp Lys Leu Ser Gly Asn Glu Thr Lys Gln Ile Gln Gln Thr Arg
 35 40 45
 Gln Gly Lys Asn Thr Glu Met Glu Ser Asp Ala Thr Ile Ala Gly Ala
 50 55 60
 Ser Gly Lys Asp Lys Thr Ser Ser Thr Thr Lys Thr Glu Thr Ala Pro
 65 70 75 80
 Gln Gln Gly Val Ala Ala Gly Lys Glu Ser Ser Glu Ser Gln Lys Ala
 85 90 95
 Gly Ala Asp Thr Gly Val Ser Gly Ala Ala Ala Thr Thr Ala Ser Asn
 100 105 110
 Thr Ala Thr Lys Ile Ala Met Gln Thr Ser Ile Glu Glu Ala Ser Lys

115	120	125
Ser Met Glu Ser Thr Leu Glu Ser Leu Gln Ser Leu Ser Ala Ala Gln		
130	135	140
Met Lys Glu Val Glu Ala Val Val Val Ala Ala Leu Ser Gly Lys Ser		
145	150	155
Ser Gly Ser Ala Lys Leu Glu Thr Pro Glu Leu Pro Lys Pro Gly Val		
165	170	175
Thr Pro Arg Ser Glu Val Ile Glu Ile Gly Leu Ala Leu Ala Lys Ala		
180	185	190
Ile Gln Thr Leu Gly Glu Ala Thr Lys Ser Ala Leu Ser Asn Tyr Ala		
195	200	205
Ser Thr Gln Ala Gln Ala Asp Gln Thr Asn Lys Leu Gly Leu Glu Lys		
210	215	220
Gln Ala Ile Lys Ile Asp Lys Glu Arg Glu Glu Tyr Gln Glu Met Lys		
225	230	235
Ala Ala Glu Gln Lys Ser Lys Asp Leu Glu Gly Thr Met Asp Thr Val		
245	250	255
Asn Thr Val Met Ile Ala Val Ser Val Ala Ile Thr Val Ile Ser Ile		
260	265	270
Val Ala Ala Ile Phe Thr Cys Gly Ala Gly Leu Ala Gly Leu Ala Ala		
275	280	285
Gly Ala Ala Val Gly Ala Ala Ala Ala Gly Gly Ala Ala Gly Ala Ala		
290	295	300
Ala Ala Thr Thr Val Ala Thr Gln Ile Thr Val Gln Ala Val Val Gln		
305	310	315
Ala Val Lys Gln Ala Val Ile Thr Ala Val Arg Gln Ala Ile Thr Ala		
325	330	335
Ala Ile Lys Ala Ala Val Lys Ser Gly Ile Lys Ala Phe Ile Lys Thr		
340	345	350
Leu Val Lys Ala Ile Ala Lys Ala Ile Ser Lys Gly Ile Ser Lys Val		
355	360	365
Phe Ala Lys Gly Thr Gln Met Ile Ala Lys Asn Phe Pro Lys Leu Ser		
370	375	380
Lys Val Ile Ser Ser Leu Thr Ser Lys Trp Val Thr Val Gly Val Gly		
385	390	395
Val Val Val Ala Ala Pro Ala Leu Gly Lys Gly Ile Met Gln Met Gln		
405	410	415
Leu Ser Glu Met Gln Gln Asn Val Ala Gln Phe Gln Lys Glu Val Gly		
420	425	430
Lys Leu Gln Ala Ala Ala Asp Met Ile Ser Met Phe Thr Gln Phe Trp		
435	440	445
Gln Gln Ala Ser Lys Ile Ala Ser Lys Gln Thr Gly Glu Ser Asn Glu		
450	455	460
Met Thr Gln Lys Ala Thr Lys Leu Gly Ala Gln Ile Leu Lys Ala Tyr		
465	470	475
Ala Ala Ile Ser Gly Ala Ile Val Ala Gln His Lys Thr Asn Asn Phe		
485	490	495

<210>868

<211>123

<212>PRT

<213>Chlamydia pneumoniae

<400>868

Gly Glu Ile Met Asn Lys Lys Pro Lys Lys Thr Lys Lys Ala Val Gln		
1	5	10
Ser Lys Ala Ala Pro Val Lys Arg Val Pro Glu Glu Ser Gln Glu Ala		
20	25	30
Ala Ile Gln Gln Leu Glu Leu Ala Val Ser Asp Leu Tyr Lys Glu Leu		
35	40	45
Pro Leu Ala Gln Thr Phe Ala Ser Leu Thr Asp Lys Asn Gln Ile Asn		
50	55	60
Ser Ile Ile Ala Ala Leu Ser Gly Thr Leu Glu Ser Leu His Leu Glu		
65	70	75
Glu Leu Thr Gln Gly Leu Phe Pro Ser Ala Gln Glu Asp Ala Asn Phe		
85	90	95

Ala Lys Glu Leu Ser Ser Val Val His Gly Leu Lys Asn Leu Thr Thr
 100 105 110
 Val Val Asn Lys Gln Met Val Lys Gly Ala Glu
 115 120

<210>869

<211>210

<212>PRT

<213>Chlamydia pneumoniae

<400>869

Lys Asn Ala Asn Arg Leu Ala Glu Leu Ala Ala Gln Lys Lys Ala Lys
 1 5 10 15
 Ala Asp Asp Leu Glu Gln Val His Pro Val Pro Thr Glu Glu Glu Ile
 20 25 30
 Lys Lys Ala Leu Gly Asn Ile Phe Glu Gly Leu Ser Asn Gly Leu Asp
 35 40 45
 Leu Gln Gln Ile Leu Gly Leu Ser Asp Tyr Leu Leu Glu Glu Ile Tyr
 50 55 60
 Thr Val Ala Tyr Thr Phe Tyr Ser Gln Gly Lys Tyr Asn Glu Ala Val
 65 70 75 80
 Gly Leu Phe Gln Leu Leu Ala Ala Ala Gln Pro Gln Asn Tyr Lys Tyr
 85 90 95
 Met Leu Gly Leu Ser Ser Cys Tyr His Gln Leu His Leu Tyr Asn Glu
 100 105 110
 Ala Ala Phe Gly Phe Phe Leu Ala Phe Asp Ala Gln Pro Asp Asn Pro
 115 120 125
 Ile Pro Pro Tyr Tyr Ile Ala Asp Ser Leu Leu Lys Leu Gln Gln Pro
 130 135 140
 Glu Glu Ser Asn Asn Phe Leu Asp Val Thr Met Asp Ile Cys Gly Asn
 145 150 155 160
 Asn Pro Glu Phe Lys Ile Leu Lys Glu Arg Cys Gln Ile Met Lys Gln
 165 170 175
 Ser Ile Glu Lys Gln Met Ala Gly Glu Thr Lys Lys Ala Pro Thr Lys
 180 185 190
 Lys Pro Ala Gly Lys Ser Lys Thr Thr Thr Asn Lys Lys Ser Gly Lys
 195 200 205

Lys Arg

210

<210>870

<211>580

<212>PRT

<213>Chlamydia pneumoniae

<400>870

Met Ser Thr Arg Arg Pro Ile Gln Leu Leu Asp Pro Leu Thr Ile Asn
 1 5 10 15
 Gln Ile Ala Ala Gly Glu Val Ile Glu Asn Ser Val Ser Val Val Lys
 20 25 30
 Glu Leu Ile Glu Asn Ser Leu Asp Ala Gly Ala Asp Glu Ile Glu Ile
 35 40 45
 Glu Thr Leu Gly Gly Gly Gln Gly Ala Ile Ile Ile Arg Asp Asn Gly
 50 55 60
 Cys Gly Phe Arg Ala Glu Asp Ile Pro Ile Ala Leu Gln Arg His Ala
 65 70 75 80
 Thr Ser Lys Ile Arg Glu Phe Ser Asp Ile Phe Ser Leu Asn Ser Phe
 85 90 95
 Gly Phe Arg Gly Glu Ala Leu Pro Ser Ile Ala Ser Ile Ser Lys Met
 100 105 110
 Glu Ile Gln Ser Ser Ile Glu Gly Asp Glu Gly Val Arg Thr Val Ile
 115 120 125
 His Gly Gly Asp Ile Val Ser Cys Glu Pro Cys Ala Arg Gln Leu Gly
 130 135 140
 Thr Thr Val Ile Val Asn Ser Leu Phe Tyr Asn Val Pro Val Arg Arg
 145 150 155 160
 Gly Phe Gln Lys Ser Met Gln Ser Asp Arg Leu Gly Ile Arg Lys Leu
 165 170 175

Ile Glu Asn Arg Ile Leu Ser Thr Ala Asn Ile Gly Trp Ser Trp Ile
180 185 190
Ser Glu Gly His His Glu Ile Gln Ile Ala Lys Gln Gln Gly Phe Gln
195 200 205
Glu Arg Val Ala Tyr Val Met Gly Asp His Phe Met Gln Asp Ala Leu
210 215 220
Thr Ile Asp Lys Glu Ala Asn Gly Val Arg Ile Val Gly Val Leu Gly
225 230 235 240
Ser Pro Ser Phe His Arg Pro Thr Arg Gln Gly Gln Lys Ile Phe Ile
245 250 255
Asn Asp Arg Pro Ile Glu Ser Leu Phe Ile Ser Lys Lys Val Gly Asp
260 265 270
Ala Tyr Ala Leu Leu Leu Pro Leu His Arg Tyr Pro Val Phe Val Leu
275 280 285
Lys Leu Tyr Leu Pro Ser Ser Trp Cys Asp Phe Asn Val His Pro Gln
290 295 300
Lys Ile Glu Ala Arg Ile Leu Lys Glu Glu Leu Val Gly Asp Cys Ile
305 310 315 320
Lys Glu Ala Ile Val Glu Thr Leu Ala Cys Pro Pro Gly Ile Leu Cys
325 330 335
Arg Thr His Gln Glu Ile Glu Glu Ser Asp Ser Val Pro Leu Pro Met
340 345 350
Phe Arg Met Leu Glu Thr Ser Asp Val Gln Glu Glu Glu Ser Val Glu
355 360 365
Phe Asp Gln Asn Leu Phe Ala Tyr Ser Ser Glu Asp Val Ser Leu Glu
370 375 380
Lys Gln Glu Tyr Thr Ser Arg Gly Pro Lys Ser Gln Met Asp Trp Ile
385 390 395 400
Tyr Ser Ser Asp Val Arg Phe Leu Thr Ser Leu Gly Arg Val Val Leu
405 410 415
Ala Glu Asp Leu Glu Gly Val His Ile Ile Phe Thr Ala Ala Ala Arg
420 425 430
Lys His Leu Phe Phe Leu Ser Leu Met Gln Glu Asn Ser Arg Met Tyr
435 440 445
Gln Ser Gln Ala Leu Leu Ile Pro Leu Arg Leu Gln Val Thr Pro Glu
450 455 460
Glu Ala Phe Phe Phe Ser His His Gly Arg Thr Leu Cys Asp Leu Gly
465 470 475 480
Ile Glu Ile Ser Gln Val Gly Pro Cys Val Phe Ser Ile Glu Ser Thr
485 490 495
Pro Thr Val Ile Gly Glu Glu Glu Leu Lys Glu Trp Leu Leu Leu Leu
500 505 510
Ala Ala Arg Gly Ser Thr Asp Ile Asn Ser Glu Ala Leu Thr Ala Leu
515 520 525
Met Lys Glu Thr Leu Thr Gln Ala Thr Phe Ser Lys His Gln His Val
530 535 540
Phe Asp Val Ser Trp Leu Lys Leu Leu Trp Ser Val Gly Lys Pro Glu
545 550 555 560
Lys Gly Phe Asp Gly Ala Arg Ile Arg Arg Leu Ile Leu Asp Ser Asp
565 570 575
Phe Met Glu Gly
580

<210>871

<211>355

<212>PRT

<213>Chlamydia pneumoniae

<400>871

Met Ser His Asp Arg Ile Leu Arg Ala Gln Arg Ala Leu Ser Glu His
1 5 10 15
Asn Leu Asp Ala Ile Leu Val Glu Lys Ser Glu Asp Leu Ala Tyr Phe
20 25 30
Leu His Asp Glu Ala Ile Ala Gly Ile Leu Leu Ile Gly Gln Gln Glu
35 40 45
Val Met Phe Phe Val Tyr Arg Met Asp Lys Asp Leu Tyr Ser His Ile

50 55 60
 Gln Arg Val Pro Leu Thr Phe Leu Thr Gln Asp Val Val Ala Asp Leu
 65 70 75 80
 Ser Leu Tyr Val Gln Lys Gln Arg Tyr Gln Lys Ile Gly Phe Asp Ser
 85 90 95
 Ala Ser Thr Val Tyr His Lys Phe Ala Gln Arg Gln Val Leu Pro Cys
 100 105 110
 Leu Trp Glu Pro Leu Glu Cys Phe Thr Glu Lys Ile Arg Ser Ile Lys
 115 120 125
 Ser Glu Glu Glu Ile Arg Arg Met Gln Glu Ala Ala Ala Leu Gly Ser
 130 135 140
 Ala Gly Tyr Asp Tyr Val Leu Thr Leu Leu Arg Glu Gly Ile Thr Glu
 145 150 155 160
 Lys Glu Val Val Arg Gln Leu Arg Ala Phe Trp Ala Glu Ala Gly Ala
 165 170 175
 Glu Gly Pro Ser Phe Pro Pro Ile Ile Ala Phe Gly Glu His Ser Ala
 180 185 190
 Phe Pro His Ser Ile Pro Thr Asp Arg Pro Leu Lys Lys Gly Asp Ile
 195 200 205
 Val Leu Ile Asp Ile Gly Val Leu Leu Asn Gly Tyr Cys Ser Asp Met
 210 215 220
 Thr Arg Met Thr Ala Leu Gly Thr Pro His Pro Lys Leu Leu Glu Ser
 225 230 235 240
 Tyr Pro Val Val Val Glu Ala Gln Lys Arg Ala Met Ala Leu Cys Lys
 245 250 255
 Glu Gly Val Leu Trp Gly Asp Ile Asp Ala Glu Ala Val Arg Val Leu
 260 265 270
 Arg Glu His His Leu Asp Thr Tyr Phe Ile His Gly Ile Gly His Gly
 275 280 285
 Val Gly Arg His Ile His Glu Tyr Pro Cys Ser Pro Arg Gly Ser Gln
 290 295 300
 Val Lys Leu Glu Ser Gly Met Thr Ile Thr Val Glu Pro Gly Val Tyr
 305 310 315 320
 Phe Pro Gly Ile Gly Gly Ile Arg Ile Glu Asp Thr Leu Cys Ile Asp
 325 330 335
 Lys Asn Lys Asn Phe Ser Leu Thr Ala Arg Pro Val Ile Ser Glu Leu
 340 345 350
 Val Cys Leu
 355

<210>872

<211>465

<212>PRT

<213>Chlamydia pneumoniae

<400>872

Phe Phe Leu Phe Phe Lys Leu Ser Tyr Asn Phe Ile Phe Asn Leu Pro
 1 5 10 15
 Leu Thr Met Tyr Gln Leu Leu Ser Ile Gly Tyr Ser Phe Val Ser Phe
 20 25 30
 Ile Ala Leu Leu Trp Met Leu Cys Tyr Ser Pro Asn Tyr Val Thr Asp
 35 40 45
 Leu Tyr Arg Ile Ser Leu Ser Ala Glu Glu Ser Leu Gly Gly Ile Arg
 50 55 60
 Ala Phe Pro Gln Ala Glu Ser Leu Leu Gly Gly Ala Cys Ala Leu Asn
 65 70 75 80
 Phe Pro Asp Leu Glu Arg Leu Pro Asp Leu Arg Lys Glu Leu Leu
 85 90 95
 Phe Leu Gly Ser Asn Asp Arg Pro Asp Ala Cys Gly Gly Lys Phe Ser
 100 105 110
 Leu Gln Leu Ala Ser Ser Lys Glu Cys Tyr Ile Ala Ala Leu Lys Glu
 115 120 125
 Arg Val Tyr Leu Asn Val Thr Asn Ser Ser Arg Gly Pro Val Tyr Ser
 130 135 140
 Phe Ser Pro Lys Gly Val Pro Thr Glu Leu Trp Ile Glu Cys Phe Ser
 145 150 155 160

Val Ser Val Asp Gly Arg Val Glu Val Lys Val Arg Leu Gln Gly Leu
 165 170 175
 His Lys Glu Leu Ile Ser Lys Pro Arg Asp Cys Glu Thr Leu Phe Leu
 180 185 190
 Asn Pro Pro Ala Asn Lys Leu Asp Cys Trp Glu Ile Ala Gly Phe Arg
 195 200 205
 Val Asp Ala Ser Phe Pro Val Lys Gln Lys Ile Arg Arg Ile Gly Val
 210 215 220
 Asp Lys Phe Leu Leu Met His Gly Gly Ala Glu Tyr Ala Asp Lys Ala
 225 230 235 240
 Thr Lys Glu Arg Val Asp Phe Val Ser Ser Asp Glu Glu Asn Tyr Ser
 245 250 255
 Arg Tyr Leu Ala Val Gly Asp Val Leu Leu Trp Asp Gly Asn Cys Trp
 260 265 270
 Gln Thr Cys Gly Glu Phe Gln Gly Ala Ser Ser Arg Ala Pro Leu Phe
 275 280 285
 Glu Val Lys Arg Ile Asp Asp Lys Val Met Ile Ala Asp Leu Trp Asn
 290 295 300
 Val Gly Gly Thr Gln Arg Gln Thr Ile Ser Leu Val Lys Gly Val Pro
 305 310 315 320
 Ser Pro Ile Glu Ile Asn Glu Val Ile Arg Glu Ile Glu Phe Thr Gly
 325 330 335
 Met Arg Ser Trp Ser Lys Pro Ile Val Leu Val Gly Gly Gln Arg Leu
 340 345 350
 Ile Leu Ser Pro Asp Asp Trp Ile Leu Arg Thr Ala Lys Gly Trp Glu
 355 360 365
 Lys Leu Ser Arg Ala Asp Gln Ile Gln Asp Tyr Val Thr Gly Lys Val
 370 375 380
 Thr Gly Pro Leu Leu Val Phe Glu Lys Leu Glu Lys Asp Leu Arg Gly
 385 390 395 400
 Phe Val Leu Arg Gly His Met Phe Asn Ala Gln Arg Thr Leu Val Glu
 405 410 415
 Thr Ile Ser Leu Pro Leu Lys Gln Gly Phe Glu Pro Ala Val Ala Ser
 420 425 430
 Gln Glu Val Ser Ser Asn Thr Arg Ser Ala Gln His Ile Gln Gly Arg
 435 440 445
 Pro Ile Val Gly Asp His Arg Trp Phe Phe Ser Val Ile Leu Tyr Cys
 450 455 460

Ile

465

<210>873

<211>123

<212>PRT

<213>Chlamydia pneumoniae

<400>873

Phe Ser Ser Ser Glu Glu Thr Lys Ser Thr Arg Ser Phe Val Ala Leu
 1 5 10 15
 Ser Ala Tyr Ser Ala Pro Pro Cys Ile Lys Arg Asn Leu Ser Thr Pro
 20 25 30
 Ile Arg Arg Ile Phe Cys Phe Thr Gly Lys Leu Ala Ser Thr Leu Asn
 35 40 45
 Pro Ala Ile Ser Gln Gln Ser Leu Leu Ala Gly Gly Phe Lys Asn
 50 55 60
 Lys Val Ser Gln Ser Arg Gly Phe Glu Ile Asn Ser Leu Cys Lys Pro
 65 70 75 80
 Trp Arg Arg Thr Leu Thr Ser Thr Leu Pro Ser Thr Leu Thr Glu Lys
 85 90 95
 His Ser Ile His Asn Ser Val Gly Thr Pro Leu Gly Leu Asn Glu Tyr
 100 105 110
 Thr Gly Pro Arg Glu Glu Leu Val Thr Phe Lys
 115 120

<210>874

<211>754

<212>PRT

<213>Chlamydia pneumoniae

<400>874

Met Val Phe Phe Arg Asn Ser Leu Leu His Leu Val Ala Leu Ser Gly
 1 5 10 15
 Met Leu Cys Cys Ser Ser Gly Val Ala Leu Thr Ile Ala Glu Lys Met
 20 25 30
 Ala Ser Leu Glu His Ser Gly Arg Gly Ala Asp Asp Tyr Glu Gly Met
 35 40 45
 Ala Ser Phe Asn Ala Asn Met Arg Glu Tyr Ser Leu Gln Leu Ser Lys
 50 55 60
 Leu Tyr Glu Glu Ala Arg Lys Leu Arg Ala Ser Gly Thr Glu Asp Glu
 65 70 75 80
 Ala Leu Trp Lys Asp Leu Ile Arg Arg Ile Gly Glu Val Arg Gly Tyr
 85 90 95
 Leu Arg Glu Ile Glu Glu Leu Trp Ala Ala Glu Ile Arg Glu Lys Gly
 100 105 110
 Gly Asn Leu Glu Asp Tyr Ala Leu Trp Asn His Pro Glu Thr Thr Ile
 115 120 125
 Tyr Asn Leu Val Thr Asp Tyr Gly Thr Glu Asp Ser Ile Tyr Leu Ile
 130 135 140
 Pro Gln Glu Ile Gly Ala Ile Lys Ile Ala Thr Leu Ser Lys Phe Val
 145 150 155 160
 Val Pro Lys Glu Ser Phe Glu Asp Cys Leu Thr Gln Ile Leu Ser Arg
 165 170 175
 Leu Gly Ile Gly Val Arg Gln Val Asn Ser Trp Ile Lys Glu Leu Tyr
 180 185 190
 Met Met Arg Lys Glu Gly Cys Ser Val Ala Gly Val Phe Ser Ser Arg
 195 200 205
 Lys Asp Leu Glu Ala Leu Pro Glu Thr Ala Tyr Ile Gly Phe Val Leu
 210 215 220
 Asn Ser Asn Val Asp Ala His Thr Asn Gln His Val Leu Lys Lys Phe
 225 230 235 240
 Ile Asn Pro Glu Thr Thr His Val Asp Val Ile Ala Gly Arg Val Trp
 245 250 255
 Ile Phe Gly Ser Ala Gly Glu Val Gly Glu Leu Leu Lys Ile Tyr Asn
 260 265 270
 Phe Val Gln Ser Glu Ser Ile Arg Gln Glu Tyr Arg Val Ile Pro Leu
 275 280 285
 Thr Lys Ile Asp Pro Gly Glu Met Ile Ser Ile Leu Asn Ala Ala Phe
 290 295 300
 Arg Glu Asp Leu Thr Lys Asp Val Ser Glu Glu Ser Leu Gly Leu Arg
 305 310 315 320
 Val Val Pro Leu Gln Tyr Gln Gly Arg Ser Leu Phe Leu Ser Gly Thr
 325 330 335
 Ala Ala Leu Val Gln Gln Ala Leu Thr Leu Ile Arg Glu Leu Glu Glu
 340 345 350
 Gly Ile Glu Asn Pro Thr Asp Lys Thr Val Phe Trp Tyr Asn Val Lys
 355 360 365
 His Ser Asp Pro Gln Glu Leu Ala Ala Leu Leu Ser Gln Val His Asp
 370 375 380
 Val Phe Ser Gly Glu Asn Lys Ala Ser Val Gly Ala Ala Asp Gly Cys
 385 390 395 400
 Gly Ser Gln Leu Asn Ala Ser Ile Gln Ile Asp Thr Thr Val Ser Ser
 405 410 415
 Ser Ala Lys Asp Gly Ser Val Lys Tyr Gly Asn Phe Ile Ala Asp Ser
 420 425 430
 Lys Thr Gly Thr Leu Ile Met Val Val Glu Lys Glu Val Leu Pro Arg
 435 440 445
 Ile Gln Met Leu Leu Lys Lys Leu Asp Val Pro Lys Lys Met Val Arg
 450 455 460
 Ile Glu Val Leu Leu Phe Glu Arg Lys Leu Ala His Glu Gln Lys Ser
 465 470 475 480
 Gly Leu Asn Leu Leu Arg Leu Gly Glu Glu Val Cys Lys Lys Gly Cys
 485 490 495

Ser Pro Ser Val Ser Trp Ala Gly Gly Thr Gly Ile Leu Glu Phe Leu
500 505 510
Phe Lys Gly Ser Thr Gly Ser Ser Ile Val Pro Gly Tyr Asp Leu Ala
515 520 525
Tyr Gln Phe Leu Met Ala Gln Glu Asp Val Arg Ile Asn Ala Ser Pro
530 535 540
Ser Val Val Thr Met Asn Gln Thr Pro Ala Arg Ile Ala Val Val Asp
545 550 555 560
Glu Met Ser Ile Ala Val Ser Ser Asp Lys Asp Lys Ala Gln Tyr Asn
565 570 575
Arg Ala Gln Tyr Gly Ile Met Ile Lys Met Leu Pro Val Ile Asn Val
580 585 590
Gly Glu Glu Asp Gly Lys Ser Tyr Ile Thr Leu Glu Thr Asp Ile Thr
595 600 605
Phe Asp Thr Thr Gly Lys Asn His Asp Asp Arg Pro Asp Val Thr Arg
610 615 620
Arg Asn Ile Thr Asn Lys Val Arg Ile Ala Asp Gly Glu Thr Val Ile
625 630 635 640
Ile Gly Gly Leu Arg Cys Lys Gln Met Ser Asp Ser His Asp Gly Ile
645 650 655
Pro Phe Leu Gly Asp Ile Pro Gly Ile Gly Lys Leu Phe Gly Met Ser
660 665 670
Ser Thr Ser Asp Ser Leu Thr Glu Met Phe Val Phe Ile Thr Pro Lys
675 680 685
Ile Leu Glu Asn Pro Val Glu Gln Gln Glu Arg Lys Glu Glu Ala Leu
690 695 700
Leu Ser Ser Arg Pro Gly Glu Arg Glu Glu Tyr Tyr Gln Ala Leu Ala
705 710 715 720
Ala Ser Glu Ala Ala Ala Arg Ala Ala His Lys Lys Leu Glu Met Phe
725 730 735
Pro Ala Ser Gly Val Ser Leu Ser Gln Val Glu Arg Gln Glu Tyr Asp
740 745 750
Gly Cys

<210>875

<211>453

<212>PRT

<213>Chlamydia pneumoniae

<400>875

Arg Gly Lys Asn Thr Met Ala Ala Ser Ile Leu Ser Gln Glu Leu Leu
1 5 10 15
Asp Ile Leu Pro Tyr Thr Phe Leu Lys Lys His Cys Leu Leu Pro Ile
20 25 30
Glu Glu Ser Ser Glu Ala Ile Thr Ile Ala His Ala Thr Ala Thr Ser
35 40 45
Val Ile Ala Gln Asp Glu Val Lys Leu Leu Ile Lys Lys Pro Val Arg
50 55 60
Phe Val Leu Lys Glu Glu Ser Glu Ile Leu Gln Arg Leu Gln Gln Leu
65 70 75 80
Tyr Ser Asn Arg Glu Gly Asn Val Ser Asp Met Leu Leu Thr Met Lys
85 90 95
Glu Glu Asp Gly Thr Thr Ile Ser Glu Glu Asp Leu Leu Glu Thr
100 105 110
Thr Asp Thr Ile Pro Val Val Arg Leu Leu Asn Trp Ile Leu Lys Glu
115 120 125
Ala Ile Glu Glu Arg Ala Ser Asp Ile His Phe Glu Pro Cys Glu Asp
130 135 140
Ser Met Arg Ile Arg Tyr Arg Ile Asp Gly Val Leu His Asp Arg His
145 150 155 160
Ser Pro Pro Ser His Leu Arg Ser Ala Leu Thr Thr Arg Leu Lys Val
165 170 175
Leu Ala Lys Met Asp Ile Ala Glu His Arg Leu Pro Gln Asp Gly Arg
180 185 190
Ile Lys Ile His Ile Gly Gly Gln Glu Val Asp Met Arg Val Ser Thr

195 200 205
 Val Pro Val Ile Tyr Gly Glu Arg Val Val Leu Arg Ile Leu Asp Lys
 210 215 220
 Arg Asn Val Ile Leu Asp Ile Ala Gly Leu His Met Pro Lys Gly Thr
 225 230 235 240
 Glu Ile Leu Phe Lys Asp Thr Ile Thr Ala Pro Glu Gly Ile Leu Leu
 245 250 255
 Val Thr Gly Pro Thr Gly Ser Gly Lys Thr Thr Thr Leu Tyr Ser Val
 260 265 270
 Leu Gln Glu Leu Lys Gly Pro Leu Thr Asn Ile Met Thr Ile Glu Asp
 275 280 285
 Pro Pro Glu Tyr Lys Leu Pro Gly Ile Ala Gln Ile Ala Val Lys Pro
 290 295 300
 Lys Ile Gly Leu Thr Phe Ala Arg Gly Leu Arg His Leu Leu Arg Gln
 305 310 315 320
 Asp Pro Asp Ile Leu Met Val Gly Glu Ile Arg Asp Gln Glu Thr Ala
 325 330 335
 Glu Ile Ala Ile Gln Ala Ala Leu Thr Gly His Leu Val Val Ser Thr
 340 345 350
 Leu His Thr Asn Asp Ala Ile Ser Ala Ile Pro Arg Leu Leu Asp Met
 355 360 365
 Gly Ile Glu Ser Tyr Leu Leu Ser Ala Thr Leu Val Gly Val Val Ala
 370 375 380
 Gln Arg Leu Val Arg Thr Ile Cys Pro Tyr Cys Lys Val Ala Tyr Thr
 385 390 395 400
 Pro Glu Asn Gln Glu Lys Ser Phe Leu Ala Ser Leu Gly Lys Asp Thr
 405 410 415
 Glu Met Pro Leu Tyr Arg Gly Gln Gly Cys Val His Cys Phe Val Pro
 420 425 430
 Asp Ile Lys Glu Asp Arg Glu Phe Thr Asn Phe Tyr Ala Arg Ile His
 435 440 445
 Tyr Phe Val Gln Lys
 450
 <210>876
 <211>394
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>876
 Gly Gly Arg Met Pro Arg Tyr Arg Tyr Thr Tyr Leu Asp Pro Lys Glu
 1 5 10 15
 Arg Arg Lys Arg Gly Tyr Leu Glu Ala Leu His Ile Gln Glu Ala Arg
 20 25 30
 Glu Lys Leu Ala Gln Glu Asn Ile Gln Val Leu Asp Ile Arg Glu Val
 35 40 45
 Ala Leu Arg Arg Met Ser Ile Lys Ser Thr Glu Leu Ile Val Phe Thr
 50 55 60
 Lys Gln Leu Leu Leu Leu Leu Arg Ser Gly Leu Pro Leu Tyr Glu Ser
 65 70 75 80
 Leu Val Ser Leu Arg Asp Gln Tyr His Glu Gln Lys Met Gly Leu Leu
 85 90 95
 Leu Thr Ser Phe Met Glu Thr Leu Arg Ser Gly Gly Ser Leu Ser Gln
 100 105 110
 Ala Met Ala Ala His Pro Asn Ile Phe Asp His Phe Tyr Cys Ser Gly
 115 120 125
 Val Ala Ala Gly Glu Ser Val Gly Asn Leu Glu Gly Cys Leu Gln Asn
 130 135 140
 Ile Ile Val Val Leu Glu Arg Ala Gln Ile Thr Lys Lys Met Val
 145 150 155 160
 Gly Ala Leu Ser Tyr Pro Cys Val Leu Leu Val Phe Ser Phe Ala Val
 165 170 175
 Met Leu Phe Phe Leu Leu Gly Val Ile Pro Ser Leu Lys Glu Thr Phe
 180 185 190
 Glu Asn Met Glu Val Lys Gly Leu Thr Lys Ile Val Phe Gly Val Ser
 195 200 205

Asp Cys Leu Ser Ala Tyr Arg Tyr Leu Phe Leu Gly Phe Ala Ser Ala
 210 215 220
 Leu Ile Thr Val Gly Ile Leu Met Arg His Arg Ile Pro Trp Lys Lys
 225 230 235 240
 Ile Leu Glu Lys Leu Leu Phe Ala Leu Pro Gly Thr Lys Lys Phe Val
 245 250 255
 Val Lys Val Ala Val Asn Arg Phe Cys Ser Val Ala Ser Ala Ile Leu
 260 265 270
 Lys Gly Gly Gly Thr Leu Ile Glu Gly Leu Asp Leu Gly Cys Asp Ala
 275 280 285
 Ile Pro Tyr Asp Arg Leu Lys Thr Asp Met Arg Asp Ile Val Gln Ala
 290 295 300
 Val Ile Gly Gly Gly Ser Leu Ser Gln Glu Leu Ala Gln Arg Ser Trp
 305 310 315 320
 Val Pro Lys Leu Ala Ile Gly Met Ile Ala Leu Gly Glu Glu Ser Gly
 325 330 335
 Asp Leu Ala Asp Val Leu Gly Tyr Val Ala His Ile Tyr Asn Glu Asp
 340 345 350
 Thr Gln Lys Thr Leu Ala Ser Ile Thr Ser Trp Cys Gln Pro Val Ile
 355 360 365
 Leu Ile Phe Leu Gly Gly Leu Ile Gly Val Ile Met Leu Ala Ile Leu
 370 375 380
 Ile Pro Leu Thr Ser Asn Ile Gln Thr Leu
 385 390

<210>877

<211>175

<212>PRT

<213>Chlamydia pneumoniae

<400>877

Gly Tyr Thr Lys Asn Val Gly Phe Asp Asn Val Val Val Ser Thr Arg
 1 5 10 15
 Asp Ser Asp Phe Ser Trp Trp Pro Asp Arg Cys Asp His Val Gly Asn
 20 25 30
 Ile Asp Pro Thr His Lys Gln Tyr Pro Asn Ile Ile Lys Cys Val Leu
 35 40 45
 Arg Gly Val Gly Met Lys Arg Gln Lys Arg Lys Gln Ser Ile Thr Leu
 50 55 60
 Ile Glu Met Met Val Val Ile Thr Leu Ile Gly Ile Ile Gly Gly Ala
 65 70 75 80
 Leu Ala Phe Asn Met Arg Gly Ser Ile His Lys Gly Lys Val Phe Gln
 85 90 95
 Ser Glu Gln Asn Cys Ala Lys Val Tyr Asp Ile Leu Met Met Glu Tyr
 100 105 110
 Ala Thr Gly Gly Ser Ser Leu Lys Glu Ile Ile Ala His Lys Glu Thr
 115 120 125
 Val Val Glu Glu Ala Ser Trp Cys Lys Glu Gly Arg Lys Leu Leu Lys
 130 135 140
 Asp Ala Trp Gly Glu Asp Leu Ile Val Gln Leu Asn Asp Lys Gly Asp
 145 150 155 160
 Asp Leu Val Ile Phe Ser Lys Arg Val Gln Ser Ser Asn Lys Lys
 165 170 175

<210>878

<211>149

<212>PRT

<213>Chlamydia pneumoniae

<400>878

Leu Leu Ser Asn Ile Met Gly Ser Arg Arg Lys Leu Lys Arg Ser Phe
 1 5 10 15
 Leu Leu Ile Glu Val Leu Met Ala Leu Ser Leu Val Cys Ala Val Leu
 20 25 30
 Leu Pro Cys Ile Arg Phe Tyr Tyr Ala Ile His Arg Ser Phe Glu Glu
 35 40 45
 Asp Ile Phe Asn Leu Gln Leu Pro Ala Leu Ile Asp His Cys Phe Leu
 50 55 60

Ser Val Glu Glu Lys Met Arg Gln Gln Met Ala Glu Gly Thr Val Leu
 65 70 75 80
 Thr Ser Gly Lys Gly Gln Thr Val Ser Leu Ala Tyr Thr Ser Gln Gly
 85 90 95
 Ile Gly Tyr Arg Ile Pro Tyr Gly Tyr Asn Val Asp Ile Arg Gln Glu
 100 105 110
 Val Arg Gly Asp Asn Leu Lys Met Lys Val Cys Leu Ala Asp Val Val
 115 120 125
 Val Glu Leu Phe Pro Asp Gln Lys Gln Ala Val Ser Val Gln Arg Cys
 130 135 140
 Leu Cys Val Thr Leu
 145

<210>879

<211>206

<212>PRT

<213>Chlamydia pneumoniae

<400>879

Asp Glu Ser Leu Pro Cys Arg Cys Cys Cys Gly Thr Phe Pro Arg Ser
 1 5 10 15
 Glu Thr Ser Ser Ile Arg Thr Glu Met Pro Met Cys Asn Ser Ile Ala
 20 25 30
 Met Lys Lys Gln Lys Arg Gly Phe Val Leu Met Glu Leu Leu Met Ser
 35 40 45
 Phe Thr Leu Ile Ala Leu Leu Leu Gly Thr Leu Gly Phe Trp Tyr Arg
 50 55 60
 Lys Ile Tyr Thr Val Gln Lys Gln Lys Glu Arg Ile Tyr Asn Phe Tyr
 65 70 75 80
 Ile Glu Glu Ser Arg Ala Tyr Lys Gln Leu Arg Thr Leu Phe Ser Met
 85 90 95
 Ser Leu Ser Ser Ser Tyr Glu Glu Pro Gly Ser Leu Phe Ser Leu Ile
 100 105 110
 Phe Asp Arg Gly Val Tyr Arg Asp Pro Lys Leu Ala Gly Ala Val Arg
 115 120 125
 Ala Ser Leu His His Asp Thr Lys Asp Gln Arg Leu Glu Leu Arg Ile
 130 135 140
 Cys Asn Ile Lys Asp Gln Ser Tyr Phe Glu Thr Gln Arg Leu Leu Ser
 145 150 155 160
 His Val Thr His Val Val Leu Ser Phe Gln Arg Asn Pro Asp Pro Glu
 165 170 175
 Lys Leu Pro Glu Thr Ile Ala Leu Thr Ile Thr Arg Glu Pro Lys Ala
 180 185 190
 Tyr Pro Pro Arg Thr Leu Thr Tyr Gln Phe Ala Val Gly Lys
 195 200 205

<210>880

<211>344

<212>PRT

<213>Chlamydia pneumoniae

<400>880

His Thr Asn Leu Arg Leu Gly Asn Lys Pro Met Gln Pro Phe Ile Phe
 1 5 10 15
 Thr Leu Leu Cys Leu Thr Ser Leu Val Ser Leu Val Ala Phe Asp Ala
 20 25 30
 Ala Asn Ala Arg Lys Arg Cys Ala Cys Ala Gln Thr Ile Glu Arg Gly
 35 40 45
 Glu Asn Phe Phe Ser Ile Lys Arg Ser Ala Cys Ala Glu Ile Glu Tyr
 50 55 60
 Gln Glu Lys Ser Arg His Ala Ser Ala Ile Glu Arg Ile Ser Lys Asp
 65 70 75 80
 Lys Gly Lys Val Thr Pro Lys Gln Ile Ala Lys Val Ala Thr Lys Lys
 85 90 95
 Lys Gln Arg Tyr Arg Leu Leu Gln Val Pro Phe Ser Arg Pro Pro Asn
 100 105 110
 Asn Ser Arg Tyr Asn Leu Tyr Ala Leu Leu Ser Glu Pro Pro Glu Cys
 115 120 125

Tyr Ser Asp Thr Ala Ser Trp Tyr Ala Ile Phe Ile Arg Leu Leu Arg
 130 135 140
 Arg Ala Tyr Val Asp Thr Gly Asn Val Pro Pro Gly Ser Glu Tyr Ala
 145 150 155 160
 Ile Ala Asn Ala Leu Ile Ser Asn Lys Gln Glu Ile Leu Glu Arg Gly
 165 170 175
 Ala Gln Leu Gly Pro Asp Val Ile Glu Thr Leu Thr Leu Pro Glu Glu
 180 185 190
 Gln Ala Glu Ile Phe Tyr Lys Met Leu Lys Gly Ser Ser Asn Ser Gln
 195 200 205
 Ser Leu Leu Asn Phe Leu His Tyr Glu Glu Lys Ser Leu Gly His Cys
 210 215 220
 Lys Leu Asn Leu Ile Phe Met Asp Pro Leu Leu Glu Ala Val Leu
 225 230 235 240
 Asp His Pro Asp Ala Tyr Arg Glu Thr Ser Leu Leu Arg Asp Gly Ile
 245 250 255
 Trp Glu Ala Val Lys Arg Gln Glu His Ala Ile Gln Glu His Gly Gln
 260 265 270
 Ala Ala Ala Leu Glu Leu Phe Lys Thr Arg Thr Asp Phe Arg Leu Glu
 275 280 285
 Leu Arg Asp Lys Met Gln Leu Leu Leu Ser Arg Tyr Asp Leu Leu Pro
 290 295 300
 Leu Leu Asn Lys Lys Met Phe Asp Tyr Thr Leu Gly Ser Ala Gly Asp
 305 310 315 320
 Tyr Leu Phe Leu Val Asp Pro Asp Thr Lys Ala Ile Ser Arg Cys Arg
 325 330 335
 Cys Pro Ser Lys Ser Ile Lys Leu
 340

<210>881

<211>95

<212>PRT

<213>Chlamydia pneumoniae

<400>881

Phe Phe Leu Ile Ile Val Leu Ile Ser Thr Ile Lys Asn Ile Ser Ile
 1 5 10 15
 Gly Arg Thr Met Ala Asp Glu Thr Pro Lys Glu Asn Ser Ser Lys Glu
 20 25 30
 Ser Ser Ser Gln Phe Asp Ser Leu Lys Arg Lys Val Lys Asp Leu His
 35 40 45
 Ser Asn Pro Lys Val Gly Lys Trp Lys Lys Phe Leu Ser His Arg Ala
 50 55 60
 Cys Glu Xaa Ser Val Val Ala Trp Cys Trp Leu Val Ser Ser Leu Ile
 65 70 75 80
 Leu Phe His Gly Leu Glu Asp Cys Leu Leu Leu Val Val Trp Ser
 85 90 95

<210>882

<211>125

<212>PRT

<213>Chlamydia pneumoniae

<400>882

Ser Arg Glu Met Glu Glu Val Ser Phe Ser Ser Ser Leu Arg Xaa Ile
 1 5 10 15
 Gly Gly Cys Leu Val Leu Val Gly Ile Ile Ala Asp Phe Ile Ser Trp
 20 25 30
 Ala Gly Gly Leu Phe Ile Ala Cys Gly Val Val Leu Gly Phe His Val
 35 40 45
 Glu Ile Arg Lys Met Leu Ser Asn Leu Gln Ser Tyr Ser Ile Ala Asn
 50 55 60
 Gly Pro Ile Lys Asn Ala Ile Leu Cys Gly Leu Ile Leu Phe Phe Val
 65 70 75 80
 Leu Asn Ile Pro Ser Phe Ala Val Ser Phe Ile Val Leu Cys Val Ile
 85 90 95
 Leu Ser Phe Ile Thr Thr Ala Pro Ser Cys Ser Thr Cys Ser Lys Asp
 100 105 110

His Cys Asp Lys His Gln Asp Thr Ser Asn Lys Pro Ser
 115 120 125

<210>883

<211>305

<212>PRT

<213>Chlamydia pneumoniae

<400>883

Leu Gln Val Arg Phe Ser Lys Thr Ser Ile Asn Gly Asn Lys Glu Leu
 1 5 10 15
 Met Gly Ile Ser Leu Pro Glu Leu Phe Ser Asn Leu Gly Ser Ala Tyr
 20 25 30
 Leu Asp Tyr Ile Phe Gln His Pro Pro Ala Tyr Val Trp Ser Val Phe
 35 40 45
 Leu Leu Leu Leu Ala Arg Leu Leu Pro Ile Phe Ala Val Ala Pro Phe
 50 55 60
 Leu Gly Ala Lys Leu Phe Pro Ser Pro Ile Lys Ile Gly Ile Ser Leu
 65 70 75 80
 Ser Trp Leu Ala Ile Ile Phe Pro Lys Val Leu Ala Asp Thr Gln Ile
 85 90 95
 Thr Asn Tyr Met Asp Asn Asn Leu Phe Tyr Val Leu Leu Val Lys Glu
 100 105 110
 Met Ile Ile Gly Ile Val Ile Gly Phe Val Leu Ala Phe Pro Phe Tyr
 115 120 125
 Ala Ala Gln Ser Ala Gly Ser Phe Ile Thr Asn Gln Gln Gly Ile Gln
 130 135 140
 Gly Leu Glu Gly Ala Thr Ser Leu Ile Ser Ile Glu Gln Thr Ser Pro
 145 150 155 160
 His Gly Ile Leu Tyr His Tyr Phe Val Thr Ile Ile Phe Trp Leu Val
 165 170 175
 Gly Gly His Arg Ile Val Ile Ser Leu Leu Gln Thr Leu Glu Val
 180 185 190
 Ile Pro Ile His Ser Phe Phe Pro Ala Glu Met Met Ser Leu Ser Ala
 195 200 205
 Pro Ile Trp Ile Thr Met Ile Lys Met Cys Gln Leu Cys Leu Val Met
 210 215 220
 Thr Ile Gln Leu Ser Ala Pro Ala Ala Leu Ala Met Leu Met Ser Asp
 225 230 235 240
 Leu Phe Leu Gly Ile Ile Asn Arg Met Ala Pro Gln Val Gln Val Ile
 245 250 255
 Tyr Leu Leu Ser Ala Leu Lys Ala Phe Met Gly Leu Leu Phe Leu Thr
 260 265 270
 Leu Ala Trp Trp Phe Ile Ile Lys Gln Ile Asp Tyr Phe Thr Leu Ala
 275 280 285
 Trp Phe Lys Glu Val Pro Ile Met Leu Leu Gly Ser Asn Pro Gln Val
 290 295 300

Leu

305

<210>884

<211>95

<212>PRT

<213>Chlamydia pneumoniae

<400>884

Val Leu Ala Phe Phe Ala Thr Ser Phe Lys Ser Val Leu Phe Glu Tyr
 1 5 10 15
 Ser Tyr Gln Ser Leu Leu Leu Ile Leu Ile Val Ser Ala Pro Pro Ile
 20 25 30
 Ile Leu Ala Ser Ile Val Gly Ile Met Val Ala Ile Phe Gln Ala Ala
 35 40 45
 Thr Gln Ile Gln Glu Gln Thr Phe Ala Phe Ala Val Lys Leu Val Val
 50 55 60
 Ile Phe Gly Thr Leu Met Ile Ser Gly Gly Trp Leu Ser Asn Met Ile
 65 70 75 80
 Leu Arg Phe Ala Gly Gln Ile Phe Gln Asn Phe Tyr Lys Trp Lys
 85 90 95

<210>885

<211>117

<212>PRT

<213>Chlamydia pneumoniae

<400>885

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Arg Thr Phe Ala Leu Phe Leu Asn Ser Gln His Ser Lys Ser Thr Asn
 1           5           10           15
Ser Lys Leu Leu Gln Asp Leu Thr Glu Asn Leu Pro Ser Glu Ile Arg
           20           25           30
Ala His Leu Thr Ala Ser Asp Phe Val Ile Ile Ile Pro Ala Phe Ile
           35           40           45
Met Gly Gln Ile Lys Asn Ala Phe Glu Ile Gly Val Leu Ile Tyr Leu
           50           55           60
Pro Phe Phe Val Ile Asp Leu Val Thr Ala Asn Val Leu Val Ala Met
           65           70           75           80
Gln Met Met Met Leu Ser Pro Leu Ser Ile Ser Leu Pro Leu Lys Leu
           85           90           95
Leu Leu Ile Val Met Val Asp Gly Trp Thr Leu Leu Leu Gln Gly Leu
           100          105          110
Met Ile Ser Phe Lys
           115

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<210>886

<211>257

<212>PRT

<213>Chlamydia pneumoniae

<400>886

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Thr Ser His Leu Arg Leu His His Pro Arg Ile Leu Leu Leu Tyr Leu
 1           5           10           15
Met Ile Arg Ile Arg Lys Asn Lys Gly Ile His Tyr Tyr Ala Ile His
           20           25           30
Phe Ser Ile Phe Pro Leu Phe Phe Tyr Ala Glu Arg Leu Met Leu Phe
           35           40           45
Ser Asp Ala Ser Leu Tyr Glu Asn Ser Cys Pro Ser Arg Cys Gln Pro
           50           55           60
Thr Pro Pro Pro Ser Asn Ser Asn Pro Leu Asn Val Val Gln Gln Pro
           65           70           75           80
Val Ala Ala Ser Ser Val Pro Ser Tyr Met Pro Pro Leu Asn Ala Asp
           85           90           95
Asp Val Leu Pro Arg Asp His Leu Ser Asp Gly Ser Phe Ser Asp Thr
           100          105          110
Tyr Pro Asp Ile Thr Thr Gln Ala Ile Ile Leu Ile Phe Leu Ala Leu
           115          120          125
Ser Pro Phe Leu Val Met Leu Leu Thr Ser Tyr Leu Lys Ile Ile Ile
           130          135          140
Thr Leu Val Leu Leu Arg Asn Ala Leu Gly Val Gln Gln Thr Pro Pro
           145          150          155          160
Ser Gln Val Leu Asn Gly Ile Ala Leu Ile Leu Ser Ile Tyr Val Met
           165          170          175
Phe Pro Thr Gly Val Ala Met Tyr Lys Asp Ala Arg Lys Glu Ile Glu
           180          185          190
Ala Asn Thr Ile Pro Gln Ser Leu Phe Thr Ala Glu Gly Ala Glu Thr
           195          200          205
Val Phe Val Ala Leu Asn Lys Ser Lys Glu Pro Leu Arg Ser Phe Leu
           210          215          220
Ile Arg Asn Thr Pro Lys Ala Gln Ile Gln Ser Phe Tyr Lys Ile Ser
           225          230          235          240
Gln Lys Thr Phe Leu Arg Lys Phe Glu Arg Thr Ser Leu Pro Pro Thr
           245          250          255
Leu

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<210>887

<211>108

<212>PRT

<213>Chlamydia pneumoniae

<400>887

Lys Ser Ser His Lys Ile Asn Ile Ser Leu Leu Ser Val Asn Pro Lys
 1 5 10 15
 Asp Leu Pro Leu Val Glu Lys Ser Arg Pro Glu Leu Lys Asn Ile Val
 20 25 30
 Glu Tyr Ala Asp Ser Leu Ile Leu Thr Ala Lys Pro Asp Val Thr Pro
 35 40 45
 Gly Gly Cys Ile Ile Glu Thr Glu Ala Gly Ile Ile Asn Ala Gln Leu
 50 55 60
 Asp Val Gln Leu Asp Ala Leu Glu Lys Ala Phe Ser Thr Ile Leu Lys
 65 70 75 80
 Ala Lys Asn Pro Val Asp Glu Pro Ser Glu Thr Ser Ser Ser Thr Asp
 85 90 95
 Ser Ser Ser Leu Ser Asn Asp Gln Asp Lys Lys Glu
 100 105

<210>888

<211>140

<212>PRT

<213>Chlamydia pneumoniae

<400>888

Phe Leu Lys Met Met Met Ser Pro Gln Ile Arg Arg Phe Tyr Leu Leu
 1 5 10 15
 Lys Leu Ser Ser Ala Phe Leu Asp Ala Lys Glu Leu Leu Glu Lys Thr
 20 25 30
 Lys Ala Asp Ser Glu Ala Tyr Val Ala Glu Thr Glu Gln Lys Cys Ala
 35 40 45
 Gln Ile Arg Gln Glu Ala Lys Asp Gln Gly Phe Lys Glu Gly Ser Glu
 50 55 60
 Ser Trp Ser Lys Gln Ile Ala Phe Leu Glu Glu Thr Lys Asn Leu
 65 70 75 80
 Arg Ile Arg Val Arg Glu Ala Leu Val Pro Leu Ala Ile Ala Ser Val
 85 90 95
 Arg Lys Ile Ile Gly Lys Glu Leu Glu Leu His Pro Glu Thr Ile Val
 100 105 110
 Ser Ile Ile Ser Gln Ala Leu Lys Glu Leu Thr Gln Asn Lys His Ile
 115 120 125
 Ile Thr Leu Cys Gln Ser Gln Arg Phe Thr Ser Cys
 130 135 140

<210>889

<211>280

<212>PRT

<213>Chlamydia pneumoniae

<400>889

Gly Cys Leu Val Thr Ala Asn Thr Phe Gly Thr Leu Asp Ile Leu Met
 1 5 10 15
 Lys His Ser Lys Glu Asp Asp Leu Ser Arg Phe Leu Pro Lys Asn Leu
 20 25 30
 Leu Val Glu Ser Pro His Pro Glu Glu Ile Pro Leu Lys Ser Leu Ser
 35 40 45
 Phe Thr Met Ser Trp Leu Pro Thr Ile His Pro Ser Trp Ile Thr Ile
 50 55 60
 Ala Met Lys Glu Phe Pro Pro Glu Ile Gln Gly Gln Leu Leu Ala Trp
 65 70 75 80
 Leu Pro Glu Pro Leu Val Gln Glu Ile Leu Pro Leu Leu Pro Gly Ile
 85 90 95
 Ser Ile Ala Pro His Arg Cys Ala Pro Phe Gly Ala Phe Tyr Leu Leu
 100 105 110
 Asp Met Leu Ser Lys Lys Ile Arg Pro Cys Gly Ile Thr Glu Glu Ile
 115 120 125
 Phe Leu Pro Ala Ser Ser Ala Asn Ala Ile Leu Tyr Tyr Thr Gly Pro
 130 135 140
 Val Lys Ile Ala Leu Ile Asn Cys Leu Gly Leu Tyr Ser Ile Ala Lys
 145 150 155 160
 Glu Leu Lys His Ile Leu Asp Lys Val Val Ile Glu Arg Val Lys Asn

165 170 175
 Ala Leu Ser Pro Thr Glu Lys Leu Phe Leu Thr Tyr Cys Gln Ser His
 180 185 190
 Pro Met Lys His Leu Glu Thr Thr Asn Phe Leu Ser Ser Trp Thr Thr
 195 200 205
 Asp Ala Glu Leu Arg Gln Phe Val His Lys Gln Gly Leu Glu Phe Leu
 210 215 220
 Gly Lys Ala Leu Thr Lys Glu Asn Ala Ser Phe Leu Trp Tyr Phe Leu
 225 230 235 240
 Arg Arg Leu Asp Val Gly Arg Ala Tyr Ile Val Glu Gln Thr Leu Lys
 245 250 255
 Thr Trp Tyr Asp His Pro Tyr Val Asp Tyr Phe Lys Ser Arg Leu Glu
 260 265 270
 Gln Cys Met Lys Val Leu Val Lys
 275 280

<210>890

<211>155

<212>PRT

<213>Chlamydia pneumoniae

<400>890

Ala Pro Tyr Cys Lys Cys Cys Ser Arg Thr Cys Ala Arg Glu Arg Leu
 1 5 10 15
 Cys Ser Glu Arg Ser Arg Xaa Tyr Ser Asp Ile Thr Ile Asn Gly Pro
 20 25 30
 Trp Gly Leu Thr Glu Glu Ile Asp Tyr Val Ser Val Trp Gly Ile Ile
 35 40 45
 Leu Ala Lys Ser Ser Leu Thr Lys Phe Arg Leu Ile Phe Tyr Val Leu
 50 55 60
 Ile Leu Ile Leu Phe Val Ile Ser Cys Gly Leu Leu Trp Val Ile Trp
 65 70 75 80
 Lys Thr His Thr Leu Ile Met Thr Met Gly Gly Thr Lys Gly Phe Phe
 85 90 95
 Asn Pro Thr Pro Tyr Thr Lys Asn Ala Leu Glu Ala Lys Lys Ala Glu
 100 105 110
 Gly Ala Ala Ala Asp Lys Glu Lys Lys Glu Asp Ala Asp Ser Gln Gly
 115 120 125
 Glu Ser Lys Asn Ala Glu Thr Ser Asp Lys Asp Ser Ser Asp Lys Asp
 130 135 140
 Ala Pro Glu Gly Ser Asn Glu Ile Glu Gly Ala
 145 150 155

<210>891

<211>214

<212>PRT

<213>Chlamydia pneumoniae

<400>891

Met Val Arg Arg Ser Ile Ser Phe Cys Leu Phe Phe Leu Met Thr Leu
 1 5 10 15
 Leu Cys Cys Thr Ser Cys Asn Ser Arg Ser Leu Ile Val His Gly Leu
 20 25 30
 Pro Gly Arg Glu Ala Asn Glu Ile Val Val Leu Leu Val Ser Lys Gly
 35 40 45
 Val Ala Ala Gln Lys Leu Pro Gln Ala Ala Ala Thr Ala Gly Ala
 50 55 60
 Ala Thr Glu Gln Met Trp Asp Ile Ala Val Pro Ser Ala Gln Ile Thr
 65 70 75 80
 Glu Ala Leu Ala Ile Leu Asn Gln Ala Gly Leu Pro Arg Met Lys Gly
 85 90 95
 Thr Ser Leu Leu Asp Leu Phe Ala Lys Gln Gly Leu Val Pro Ser Glu
 100 105 110
 Leu Gln Glu Lys Ile Arg Tyr Gln Glu Gly Leu Ser Glu Gln Met Ala
 115 120 125
 Ser Thr Ile Arg Lys Met Asp Gly Val Val Asp Ala Ser Val Gln Ile
 130 135 140
 Ser Phe Thr Thr Glu Asn Glu Asp Asn Leu Pro Leu Thr Ala Ser Val

145 150 155 160
 Tyr Ile Lys His Arg Gly Val Leu Asp Asn Pro Asn Ser Ile Met Val
 165 170 175
 Ser Lys Ile Lys Arg Leu Ile Ala Ser Ala Val Pro Gly Leu Val Pro
 180 185 190
 Glu Asn Val Ser Val Val Ser Asp Arg Ala Xaa Ile Val Ile Leu Gln
 195 200 205
 Leu Met Val Leu Gly Asp

210

<210>892

<211>224

<212>PRT

<213>Chlamydia pneumoniae

<400>892

Val Leu Phe Leu Ala Tyr Lys Met Ala Gly Leu Gln Ile Ile Ala Thr
 1 5 10 15
 Arg Ile Leu Asp Ser Phe Leu Leu Pro Cys Phe Glu Val Glu Ala Gln
 20 25 30
 Thr Phe Pro Gln Val Phe Ser Lys Val Val Val Tyr Lys Tyr Lys Ser
 35 40 45
 Ser Arg Ile Leu Leu Ile Ala Leu Leu Tyr Asn Ile Thr Leu Val Leu
 50 55 60
 Gly Leu Ile Phe Ile His Lys Lys Tyr Leu Gly Gln Lys Gly Arg Val
 65 70 75 80
 Ile Leu Lys Ile Tyr Gln Asn Glu Glu Glu Phe Phe Arg Ala Thr Glu
 85 90 95
 Arg Phe Pro Ser Ile Gly Ala Gly Tyr Leu Arg Val Arg Asn Lys Asn
 100 105 110
 Ser Val Leu Phe Pro Phe Glu Asp Leu Met Leu Val Cys Pro Ser Val
 115 120 125
 Pro Lys Asp Phe Pro Leu Ser Ala Phe Lys Val Thr Thr Lys Leu Ile
 130 135 140
 Tyr Trp Ser Val Leu Glu Ser Ile Pro Val Val Gly Ala Phe Phe Phe
 145 150 155 160
 Ser Ile Gly Arg Leu Phe Ala Met Trp Cys Ile Glu Asp Phe Pro Gly
 165 170 175
 Ser Ile Phe Ser Arg Ile Tyr His Thr Thr Val Gly Val Leu Gly Ile
 180 185 190
 Leu Gly Leu Gly Ile Ile Met Phe Ile Leu Arg Ile Ile Phe Thr Leu
 195 200 205
 Leu Thr Leu Pro Phe Trp Leu Ile Ser Cys Leu Lys Ser Ser Ala Ala
 210 215 220

<210>893

<211>319

<212>PRT

<213>Chlamydia pneumoniae

<400>893

Val Met Lys Cys Arg Pro Thr Leu Asn Thr Asp Gln Pro Arg Val Arg
 1 5 10 15
 Lys Lys Leu Pro Glu Arg Phe Pro Lys Trp Leu Gln Arg Pro Leu Pro
 20 25 30
 Gln Gly Ser Ala Phe His Ala Thr Asp Ala Thr Ile Lys Arg Ser Gly
 35 40 45
 Met Pro Thr Val Cys Glu Glu Ala Leu Cys Pro Asn Arg Ala Glu Cys
 50 55 60
 Trp Ser Arg Lys Thr Ala Thr Tyr Leu Ala Leu Gly Asp Val Cys Thr
 65 70 75 80
 Arg Ser Cys Gly Phe Cys Asn Ile Gly His Ser Lys Thr Pro Pro Ala
 85 90 95
 Leu Asp Pro Thr Glu Pro Glu Arg Ile Ala Leu Ser Ala Lys Glu Leu
 100 105 110
 Gly Leu Lys His Val Val Ile Thr Met Val Ala Arg Asp Asp Leu Glu
 115 120 125
 Asp Gly Gly Ala Gln Gly Leu Val Asp Ile Ile Gln Lys Leu Arg Glu

130										135					140				
Glu	Leu	Pro	Gln	Ala	Thr	Thr	Glu	Val	Leu	Ala	Ser	Asp	Phe	Gln	Gly				
145					150					155					160				
Asn	Val	Ser	Ala	Leu	His	Thr	Leu	Leu	Asp	Ser	Gly	Ile	Thr	Ile	Tyr				
				165					170						175				
Asn	His	Asn	Val	Glu	Thr	Val	Ala	Arg	Leu	Ser	Pro	Leu	Val	Arg	His				
			180					185					190						
Lys	Ala	Thr	Tyr	Ala	Arg	Ser	Met	Phe	Met	Leu	Glu	Gln	Ala	Ala	Asn				
			195				200					205							
Tyr	Leu	Pro	Asp	Leu	Lys	Ile	Lys	Ser	Gly	Ile	Met	Val	Gly	Leu	Gly				
	210					215					220								
Glu	Met	Glu	Gly	Glu	Val	Lys	Gln	Thr	Leu	Gln	Asp	Leu	Ala	Ser	Ile				
225					230					235					240				
Gly	Val	Arg	Ile	Val	Thr	Ile	Gly	Gln	Tyr	Leu	Arg	Pro	Ser	Arg	Lys				
				245					250					255					
His	Leu	Gln	Val	Lys	Ser	Tyr	Val	Thr	Pro	Glu	Thr	Phe	Asp	Tyr	Tyr				
			260					265					270						
Arg	Arg	Val	Gly	Glu	Ala	Met	Gly	Leu	Phe	Val	Tyr	Ala	Gly	Pro	Phe				
			275				280					285							
Val	Arg	Ser	Ser	Phe	Asn	Ala	Asp	Met	Ile	Leu	Ala	Ser	Val	Gln	Asp				
	290					295					300								
Lys	Ala	Ser	Val	Asn	Lys	His	Ser	Thr	Ile	His	Leu	Ile	Glu	Ser					
305					310					315									
<210>894																			
<211>397																			
<212>PRT																			
<213>Chlamydia pneumoniae																			
<400>894																			
Ala	Cys	Gly	Glu	Phe	Gly	Ile	His	Val	Asp	Gly	Tyr	Thr	Ile	Asp	Tyr				
1				5					10					15					
Pro	Ala	Met	Ala	Lys	Arg	Lys	Asn	Thr	Val	Val	Gln	Gly	Ile	Arg	Gln				
			20					25					30						
Gly	Leu	Glu	Gly	Leu	Ile	Arg	Ser	Asn	Lys	Ile	Thr	Val	Leu	Lys	Gly				
	35					40					45								
Thr	Gly	Ser	Leu	Val	Ser	Ser	Thr	Glu	Val	Lys	Val	Ile	Gly	Gln	Asp				
	50				55						60								
Thr	Thr	Ile	Ile	Lys	Ala	Asn	His	Ile	Ile	Leu	Ala	Thr	Gly	Ser	Glu				
65				70						75					80				
Pro	Arg	Pro	Phe	Pro	Gly	Val	Pro	Phe	Ser	Ser	Arg	Ile	Leu	Ser	Ser				
			85						90					95					
Thr	Gly	Ile	Leu	Glu	Leu	Glu	Val	Leu	Pro	Lys	Lys	Leu	Ala	Ile	Ile				
			100					105					110						
Gly	Gly	Gly	Val	Ile	Gly	Cys	Glu	Phe	Ala	Ser	Leu	Phe	His	Thr	Leu				
			115				120					125							
Gly	Val	Glu	Ile	Thr	Val	Ile	Glu	Ala	Leu	Asp	His	Ile	Leu	Ala	Val				
	130					135					140								
Asn	Asn	Lys	Glu	Val	Ser	Gln	Thr	Val	Thr	Asn									

Leu Ser Leu Gln Glu Ala Glu Gln Gln Asn Leu Pro Ala Lys Leu Thr
 290 295 300
 Lys Phe Pro Phe Lys Ala Ile Gly Lys Ala Val Ala Leu Gly Ala Ser
 305 310 315 320
 Asp Gly Phe Ala Ala Ile Val Ser His Glu Ile Thr Gln Gln Ile Leu
 325 330 335
 Gly Ala Tyr Val Ile Gly Pro His Ala Ser Ser Leu Ile Gly Glu Met
 340 345 350
 Thr Leu Ala Ile Arg Asn Glu Leu Thr Leu Pro Cys Ile Tyr Glu Thr
 355 360 365
 Val His Ala His Pro Thr Leu Ser Glu Val Trp Ala Glu Gly Ala Leu
 370 375 380
 Leu Ala Thr Asn His Pro Leu His Phe Pro Pro Lys Ser
 385 390 395

<210>895

<211>97

<212>PRT

<213>Chlamydia pneumoniae

<400>895

Met Thr Gln Glu Phe Asp Cys Val Val Ile Gly Ala Gly Pro Ser Gly
 1 5 10 15
 Tyr Val Ala Ala Ile Thr Ala Ala Gln Ser Lys Leu Arg Thr Ala Leu
 20 25 30
 Ile Glu Glu Asp Gln Ala Gly Gly Thr Cys Leu Asn Arg Gly Cys Ile
 35 40 45
 Pro Ser Lys Ala Leu Ile Ala Gly Ala Asn Val Val Ser His Ile Lys
 50 55 60
 His Ala Glu Ser Ser Ala Ser Met Leu Met Val Ile Gln Ser Ile Thr
 65 70 75 80
 Leu Arg Trp Gln Lys Glu Lys Ile Gln Ser Ser Arg Gly Ser Val Lys
 85 90 95

Asp

<210>896

<211>157

<212>PRT

<213>Chlamydia pneumoniae

<400>896

Lys Ile Pro Met Pro Phe Ala Lys Glu Thr Glu Met Gln Arg Thr Cys
 1 5 10 15
 Trp Lys Cys Glu Gly Ser Val Ser Met His Val Pro Gln Cys Pro Tyr
 20 25 30
 Cys Ser Ala Phe Leu Gln Asp Pro Pro Val Ala Ser Gly Gly Phe Ser
 35 40 45
 Ser Cys His Ile Ser Phe Pro Glu Gly Ala Ser Lys Glu Glu Ala Glu
 50 55 60
 Asp Leu Phe Ala Val Ser Ser Glu Asp Trp Glu Ala Val Leu Gly Asp
 65 70 75 80
 Gln Asn Pro Thr Gln Glu Thr Asn Lys Gln Val Ile Pro Glu Trp Thr
 85 90 95
 Trp Leu Gln Ser Trp Pro Leu Ala Ala Leu Phe Leu Gly Ile Gly Leu
 100 105 110
 Leu Ala Phe Ala Phe Leu Ile Leu Leu Phe Ser Thr Asp Ser Gly Leu
 115 120 125
 Val Leu Thr Trp Pro Lys Asn Arg Ala Tyr Phe Tyr Gly Ile Ile Gly
 130 135 140
 Ala Ala Val Ala Tyr Arg Gly Tyr Arg Lys Leu Pro Leu
 145 150 155

<210>897

<211>170

<212>PRT

<213>Chlamydia pneumoniae

<400>897

Phe Gly Ser Leu Leu Ser Ile Leu Arg Lys Leu Gly Ser Ser Met Leu

1	5	10	15
Arg Phe Gln Gly Lys Ser Leu Asn Arg Lys Glu Glu Ile Glu Thr Phe			
20	25	30	
Thr Thr Asp Pro Asn Cys Gln Val Phe Val Gly Ser Leu Leu Ala Ala			
35	40	45	
Gly Thr Gly Ile Asn Leu Thr Ala Gly Asn Val Val Ile Met Tyr Asp			
50	55	60	
Arg Trp Trp Asn Pro Ala Lys Glu Asn Gln Ala Leu Asp Arg Val His			
65	70	75	80
Arg Ile Gly Gln Lys Asn Thr Val Phe Ile Tyr Lys Leu Ile Thr Glu			
85	90	95	
Asp Thr Leu Glu Arg Ile His Tyr Leu Ile Glu Lys Lys Ile Arg			
100	105	110	
Leu Leu Asp Lys Val Ile Ala Ser Gln Asp Ser Asn Ile Leu His Met			
115	120	125	
Leu Asn Arg Glu Asp Leu Leu Thr Ile Leu Ser Tyr Lys Asp Glu His			
130	135	140	
Gly Thr Ser Asp Ser Glu Glu Ser Pro Val Asp Ala Pro Val Glu Asp			
145	150	155	160
Asp Thr Gly Val Leu Pro Pro Glu Asp Ser			
165	170		

<210>898

<211>301

<212>PRT

<213>Chlamydia pneumoniae

<400>898

Leu Tyr Val Gln Gln Ser Val Leu Pro His Trp Glu His Ile Leu Ser			
1	5	10	15
Asn His Leu Pro Gly Val Ser Ile Phe Ser Phe His Gly Pro Asn Lys			
20	25	30	
Pro Ser Glu Leu Pro Pro Ala Asp Ile Leu Leu Thr Ser Tyr Gly Thr			
35	40	45	
Leu Arg Gln Asn Tyr Asp Lys Phe Tyr Lys Ile Ala Phe Thr Ile Val			
50	55	60	
Val Phe Asp Glu Ile His Met Ala Lys Asn Lys Ser Ser Gln Ile His			
65	70	75	80
Lys Ile Leu Cys Arg Ile Asp Ala Gln Met Lys Leu Gly Leu Thr Gly			
85	90	95	
Thr Pro Ile Glu Asn Asn Leu Leu Glu Phe Lys Gly Leu Leu Asp Ile			
100	105	110	
Ile Leu Pro Asn Tyr Leu Pro Ser Asp Ala Leu Phe Lys Lys Leu Phe			
115	120	125	
Thr Lys Arg Cys Ser Ser Glu Glu Leu Glu Glu Ile Ile Pro Ser Gln			
130	135	140	
Asp Leu Leu Leu Lys Leu Thr Arg Pro Phe Ile Leu Arg Arg Thr Lys			
145	150	155	160
Lys Leu Val Leu Pro Glu Leu Pro Asp Lys Val Glu Ser Ile Ile Ala			
165	170	175	
Cys Ser Leu Ser Pro Asp Gln Glu Lys Leu Tyr Met Ala Thr Leu Gln			
180	185	190	
Arg Glu Lys Ser His Ile Gln Lys Leu Glu Thr Pro Glu Pro Ala			
195	200	205	
Thr Asn Phe Leu His Ile Phe Ala Leu Leu Asn His Leu Lys Gln Ile			
210	215	220	
Cys Asp His Pro Ala Val Phe Phe Lys Asp Pro Asp Gln Tyr Lys Asn			
225	230	235	240
Tyr Glu Ser Gly Lys Trp Asn Ala Phe Val Lys Leu Leu Lys Glu Ser			
245	250	255	
Leu Asn Ala Gly Tyr Lys Val Val Val Phe Ser Gln Tyr Ile His Met			
260	265	270	
Ile Arg Ile Ile Thr Leu Tyr Leu Glu Glu Ile Gly Ile Lys Tyr Ala			
275	280	285	
Ser Ile Ser Arg Lys Ile Ser Glu Ser Glu Gly Arg Asn			
290	295	300	

<210>899

<211>610

<212>PRT

<213>Chlamydia pneumoniae

<400>899

Xaa Pro Leu Ser Ile Ala Leu Leu Lys Lys Phe Phe Phe Leu Asn Glu
 1 5 10 15
 Glu Gly Ala Glu Leu Thr Ile Gly Glu Asn Ser Gln Gly Phe Pro Ser
 20 25 30
 His Phe Ser Leu Gln Trp Gln Gly Leu Val Phe Lys Ala Glu Ile Leu
 35 40 45
 Asp Phe Pro Thr Leu Glu Asp Ile Phe Pro Lys Leu Glu Leu Ala His
 50 55 60
 Thr Ser Leu Glu Asn Val Ser His Asp Ile Ser Ile Thr Asn Val Thr
 65 70 75 80
 Val Cys Ala Glu Glu Ala Lys Val Asn Phe Thr Leu Ser Pro Val Ile
 85 90 95
 His Lys Lys Asp Arg Glu Asn His Pro Lys Thr Arg Ile Gly Ser Val
 100 105 110
 Glu Tyr Val Ala Lys Thr His Glu Met Ile Thr Gly Pro Lys Ala Ile
 115 120 125
 Ala Leu Pro Ile Tyr Ala Ile Pro Leu Leu Ala Asp Lys Phe Lys Asp
 130 135 140
 Gln Leu Leu Ser Leu Leu Cys Tyr Asp Ser Leu Glu Tyr Arg Leu Arg
 145 150 155 160
 Tyr Asp Ile Arg Leu Leu Arg Asp Ala Ser Phe Ser Phe Ser Ala Tyr
 165 170 175
 Leu Val Thr Pro Gly Asp Leu Asp Asn Gly Ser Leu Ile Tyr Pro Asn
 180 185 190
 Tyr Cys Tyr Ser Pro Thr Lys Gly Leu Met Gln Val Val Gly Met Leu
 195 200 205
 Ser Pro Lys Gln Ala Phe Ile Val Lys Ser Glu Gln Val Glu Asp Phe
 210 215 220
 Leu Asn Glu Arg Gly His Leu Ile Gln Glu Pro Gly Phe Gln Thr Phe
 225 230 235 240
 Ile Asn Glu Arg Pro Glu Gly His Leu Thr Tyr Asn Val Thr Glu Gln
 245 250 255
 Gly Val Leu Leu Phe His Tyr Asp Val Gly Asp Pro Ser Ser Thr Glu
 260 265 270
 Ile Arg Phe Gly Thr Trp Thr Tyr Tyr Thr Asn Gln Gly Phe Phe Leu
 275 280 285
 Glu Lys Lys Asn Asp Leu Pro Ile Gln Asp Gly Leu Ile Val Glu Pro
 290 295 300
 Gln Asp Ile Pro Ala Phe Ile Val Lys Asn Asp Ala Ala Leu Arg Arg
 305 310 315 320
 Leu Pro Asn Phe Phe Ser Ser Pro Pro Asn Leu Lys Asp Leu Leu Ile
 325 330 335
 Glu Val His Arg Gln Ser Arg Gly Lys Gly Leu Asp Leu Lys Pro Ile
 340 345 350
 Leu Val Gly Leu Gly Glu Ser Arg Cys Trp Leu Phe Gly Val Phe Leu
 355 360 365
 Tyr Arg Glu Asp Ile Gly Phe Ser Leu Ile Pro Thr Pro Leu Gln Gly
 370 375 380
 Leu Cys Phe Leu Pro Arg Val Ile Pro Pro Glu Asn Val Pro Gln Phe
 385 390 395 400
 Leu Thr Gln Tyr Ala Gln His Glu Arg Ile Leu Phe Pro Asn Pro Gln
 405 410 415
 Thr Arg Pro Pro Glu Ser Tyr Glu Leu Val Ile Gln Ser Ile His Arg
 420 425 430
 Pro His Pro Ala Ser Pro Leu His Leu Gln Leu Glu Leu Lys Thr Asn
 435 440 445
 Leu Gly Ser Val Pro Ile Gly Ile Ala Leu Gln Gly Leu Lys Ser Lys
 450 455 460
 His Thr Phe Leu Phe Thr Gln Ala Gly Phe Leu Asp Leu Lys Gln Asn

465 470 475 480
 Leu Phe Gln Phe Leu Lys Gln Phe Leu Ser Thr Gln Lys Cys Val Ile
 485 490 495
 Ala Glu Asn Thr Val Ile Ala Asn Ile Thr Asp Val Phe Lys Leu Asp
 500 505 510
 Ala Leu Ala Pro Leu Ser Val Thr Asp Asp Thr Ile Ala Asn Pro Glu
 515 520 525
 Asp Leu Gln Phe Phe Ser Gln Leu Lys Ala Ala Cys Leu Pro Pro Ile
 530 535 540
 Pro Gln Asn Leu Phe Ser Ser Asp His Gln Leu Arg Pro Tyr Gln Asn
 545 550 555 560
 Ser Gly Leu Leu Trp Met Trp Phe Leu Tyr Asn His Arg Leu Ser Gly
 565 570 575
 Leu Leu Cys Asp Glu Met Gly Leu Gly Lys Thr His Gln Ala Thr Ala
 580 585 590
 Leu Thr Arg Tyr Cys Ile Ser Val Phe Thr Ala Leu Ser Ala Pro Glu
 595 600 605

Ile Pro

610

<210>900

<211>181

<212>PRT

<213>Chlamydia pneumoniae

<400>900

His Asn Ile Met Val Leu Glu Ala Leu Ala Ile Phe Arg Gln Asp Ala
 1 5 10 15
 Met Gln His Leu Lys His Arg Lys Glu Ile Val Val Asp Phe Cys
 20 25 30
 Glu Asp Ser Tyr Thr Ile Arg Ile Pro Asp Glu Glu Ala Pro Glu Gly
 35 40 45
 Tyr Trp Leu Ser Thr Leu Lys Leu Gln Asp Ile Asp Arg Leu Thr Phe
 50 55 60
 Ala Ser Cys Ser Cys Pro Asp Gly Glu Cys Cys Leu His Leu Met Thr
 65 70 75 80
 Ala Tyr Phe Ala Val Tyr Asp Ala Leu Gly Leu His Pro Leu His Asp
 85 90 95
 Lys Phe Arg His Ser Phe Trp Tyr Ala Val Phe Ser His Phe Phe Leu
 100 105 110
 Asp Ser Ile Pro Leu Gln Ala Gln Gly Glu Met Val Tyr Thr Leu Glu
 115 120 125
 Ser Pro His Ile Thr Leu Thr Ile Glu Cys Leu Ser Glu Glu Val Phe
 130 135 140
 Gln Asp Trp Leu Arg Thr Ile His Ala Ser Glu Glu Pro Thr Val Phe
 145 150 155 160
 Thr Asn Lys Thr Phe Leu Xaa Ser Ala Leu Tyr Arg Thr Ala Lys Lys
 165 170 175
 Ile Leu Phe Leu Lys
 180

<210>901

<211>412

<212>PRT

<213>Chlamydia pneumoniae

<400>901

Met Lys Lys Asn Ala Ser His Lys Thr Asn Asp Lys Lys Ser Leu Ser
 1 5 10 15
 Ile Trp Ser Ile Gly Gly Ser Ile Phe Ala Met Phe Phe Gly Ala Gly
 20 25 30
 Asn Ile Val Phe Pro Leu Ala Leu Gly Tyr His Tyr Asn Ala His Pro
 35 40 45
 Trp Ser Ala Tyr Phe Gly Met Met Leu Thr Ala Val Cys Val Pro Leu
 50 55 60
 Leu Gly Leu Val Ser Met Leu Phe Tyr Ser Gly Asp Tyr Gln Lys Phe
 65 70 75 80
 Phe Phe Ser Ile Gly Arg Ile Pro Gly Met Ile Phe Ile Thr Ala Ile

85 90 95
 Ile Leu Leu Ile Gly Pro Phe Gly Gly Ile Pro Arg Ala Ile Ala Val
 100 105 110
 Ser His Ala Thr Leu Ile Ser Leu Ser Glu His Lys Ser Ala Phe Ile
 115 120 125
 Pro Ser Leu Pro Ile Phe Ser Ala Ile Cys Cys Val Leu Ile Tyr Ile
 130 135 140
 Phe Ser Cys Lys Leu Ser Arg Leu Ile Gln Trp Leu Gly Ser Val Phe
 145 150 155 160
 Phe Pro Ile Met Leu Val Thr Leu Leu Trp Val Ile Ile Arg Ser Phe
 165 170 175
 Met Ile Pro Thr His Pro Met Val Gln Glu Phe Ile Pro Asn Ala Arg
 180 185 190
 Gln Ala Trp Leu Ala Gly Phe Ile Glu Gly Phe Asn Thr Met Asp Leu
 195 200 205
 Leu Ala Ala Phe Phe Phe Cys Ser Ile Val Leu Ile Ser Leu Arg Gln
 210 215 220
 Leu Val Ala Glu Glu Lys His Pro Thr Glu Glu Ile Pro Leu Ser
 225 230 235 240
 Phe Gln Gly Ile Ser Lys Lys Asn Lys Arg Ser Leu Ala Leu Gly Phe
 245 250 255
 Phe Leu Ala Ala Ile Leu Leu Gly Met Thr Tyr Leu Gly Phe Val Leu
 260 265 270
 Ser Ala Ala Arg His Ala Gly Leu Leu Val Asn Val Ser Lys Gly His
 275 280 285
 Ile Leu Gly Arg Ile Ser Ala Ile Ala Leu Gly Pro Asn Ser Ile Leu
 290 295 300
 Ala Gly Val Ser Val Phe Ile Ala Cys Leu Thr Thr Glu Ile Ala Leu
 305 310 315 320
 Val Gly Ile Val Ala Asp Phe Leu Ala Arg Val Val Ser Phe Lys Lys
 325 330 335
 Leu Asn Tyr Ala Ser Ala Val Ile Cys Thr Leu Ile Pro Thr Tyr Leu
 340 345 350
 Ile Ser Ile Leu Asn Phe Glu Thr Ile Ser His Leu Leu Leu Pro Leu
 355 360 365
 Leu Gln Leu Ser Tyr Pro Ala Leu Ile Val Leu Ala Cys Gly Asn Ile
 370 375 380
 Ala Tyr Lys Leu Trp Asn Phe Arg Tyr Ser Pro Val Leu Phe Tyr Leu
 385 390 395 400
 Thr Leu Ser Leu Thr Ile Val Leu Lys Leu Val Asn
 405 410

<210>902

<211>211

<212>PRT

<213>Chlamydia pneumoniae

<400>902

Leu Thr Met Lys Gln Phe Ile Leu Arg Thr Leu Asn Ala Leu Phe Pro
 1 5 10 15
 Asn Pro Lys Pro Ser Leu Glu Gly Trp Ser Ser Pro Phe Gln Leu Leu
 20 25 30
 Ile Ala Ile Leu Leu Ser Gly Asn Ser Thr Asp Lys Ala Val Asn Ser
 35 40 45
 Val Thr Pro Gln Leu Phe Ala Lys Ala Pro Asp Ala Gln Ser Ile Leu
 50 55 60
 Asp Leu Pro Pro Gly Lys Leu Tyr Gln Leu Ile Ala Pro Cys Gly Leu
 65 70 75 80
 Gly Glu Arg Lys Ser Ala Tyr Ile Tyr Gln Leu Ser Gln Ile Leu Val
 85 90 95
 Arg Asp Phe His Gly Glu Pro Pro Asn Asp Met Ala Leu Leu Thr Gln
 100 105 110
 Leu Pro Gly Val Gly Arg Lys Thr Ala Ser Val Phe Leu Gly Ile Ala
 115 120 125
 Tyr Gly Lys Pro Thr Phe Pro Val Asp Thr His Ile Leu Arg Leu Ala
 130 135 140

Gln Arg Trp Lys Ile Ser Glu Lys Lys Ser Pro Ser Ala Ala Glu Lys
 145 150 155 160
 Asp Leu Ala Arg Phe Phe Gly His Glu Asn Thr Pro Lys Leu His Leu
 165 170 175
 Gln Leu Ile Tyr Tyr Ala Arg Gln Tyr Cys Pro Ala Leu His His Lys
 180 185 190
 Ile Asp Asn Cys Pro Ile Cys Ser Tyr Leu Ala Lys Glu Ala Asn Ser
 195 200 205
 Thr Arg Thr
 210
 <210>903
 <211>442
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>903
 Met Leu Lys His Asp Thr Ile Ala Ala Ile Ala Thr Pro Pro Gly Glu
 1 5 10 15
 Gly Ser Ile Ala Val Val Arg Leu Ser Gly Pro Gln Ala Ile Val Ile
 20 25 30
 Ala Asp Arg Ile Phe Ser Gly Ser Val Ala Ser Phe Ala Ser His Thr
 35 40 45
 Ile His Leu Gly Gln Val Ile Phe Glu Glu Thr Leu Ile Asp Gln Ala
 50 55 60
 Leu Leu Leu Leu Met Arg Ser Pro Arg Ser Phe Thr Gly Glu Asp Val
 65 70 75 80
 Val Glu Phe Gln Cys His Gly Gly Phe Phe Ala Cys Ser Gln Ile Leu
 85 90 95
 Asp Ala Leu Ile Ala Leu Gly Ala Arg Pro Ala Leu Pro Gly Glu Phe
 100 105 110
 Ser Gln Arg Ala Phe Leu Asn Gly Lys Ile Asp Leu Val Gln Ala Glu
 115 120 125
 Ala Ile Gln Asn Leu Ile Val Ala Glu Asn Ile Asp Ala Phe Arg Ile
 130 135 140
 Ala Gln Thr His Phe Gln Gly Asn Phe Ser Lys Lys Ile Gln Glu Ile
 145 150 155 160
 His Thr Leu Ile Ile Glu Ala Leu Ala Phe Leu Glu Val Leu Ala Asp
 165 170 175
 Phe Pro Glu Glu Glu Gln Pro Asp Leu Leu Val Pro Gln Glu Lys Ile
 180 185 190
 Gln Asn Ala Leu His Ile Val Glu Asp Phe Ile Ser Ser Phe Asp Glu
 195 200 205
 Gly Gln Arg Leu Ala Gln Gly Thr Ser Leu Ile Leu Ala Gly Lys Pro
 210 215 220
 Asn Val Gly Lys Ser Ser Leu Leu Asn Ala Leu Leu Gln Lys Asn Arg
 225 230 235 240
 Ala Ile Val Thr His Ile Pro Gly Thr Thr Arg Asp Ile Leu Glu Glu
 245 250 255
 Gln Trp Leu Leu Gln Gly Lys Arg Ile Arg Leu Leu Asp Thr Ala Gly
 260 265 270
 Gln Arg Thr Thr Asp Asn Asp Ile Glu Lys Glu Gly Ile Glu Arg Ala
 275 280 285
 Leu Ser Ala Met Glu Glu Ala Asp Gly Ile Leu Trp Val Ile Asp Ala
 290 295 300
 Thr Gln Pro Leu Glu Asp Leu Pro Lys Ile Leu Phe Thr Lys Pro Ser
 305 310 315 320
 Phe Leu Leu Trp Asn Lys Ala Asp Leu Thr Pro Pro Phe Leu Asp
 325 330 335
 Thr Ser Leu Pro Gln Phe Ala Ile Ser Ala Lys Thr Gly Glu Gly Leu
 340 345 350
 Thr Gln Val Lys Gln Ala Leu Ile Gln Trp Met Gln Lys Gln Glu Ala
 355 360 365
 Gly Lys Thr Ser Lys Val Phe Leu Val Ser Ser Arg His His Met Ile
 370 375 380
 Leu Gln Glu Val Ala Arg Cys Leu Lys Glu Ala Gln Lys Asn Leu Tyr

385 390 395 400
 Leu Gln Pro Pro Glu Ile Ile Ala Leu Glu Leu Arg Glu Ala Leu His
 405 410 415
 Ser Ile Gly Met Leu Ser Gly Lys Glu Val Thr Glu Ser Ile Leu Gly
 420 425 430
 Glu Ile Phe Ser Lys Phe Cys Ile Gly Lys
 435 440

<210>904

<211>303

<212>PRT

<213>Chlamydia pneumoniae

<400>904

Gly Leu Val Gln Lys Pro Gln Tyr Ile Asp Arg Ile Thr Lys Lys Lys
 1 5 10 15
 Val Ile Glu Pro Ile Phe Tyr Glu Lys Thr Met Leu Phe Leu Tyr Asn
 20 25 30
 Ser Lys Leu Gly Lys Lys Leu Ser Val Phe Leu Ser Thr His Pro Ile
 35 40 45
 Phe Ser Arg Ile Tyr Gly Trp Leu Gln Arg Cys Ser Trp Thr Arg Arg
 50 55 60
 Gln Ile Arg Pro Phe Met Asn Arg Tyr Lys Ile Ser Glu Lys Glu Leu
 65 70 75 80
 Thr Lys Pro Val Ala Asp Phe Thr Ser Phe Asn Asp Phe Phe Thr Arg
 85 90 95
 Lys Leu Lys Pro Glu Ala Arg Pro Ile Val Gly Gly Lys Glu Val Phe
 100 105 110
 Ile Thr Pro Val Asp Gly Arg Tyr Leu Val Tyr Pro Asn Val Ser Glu
 115 120 125
 Phe Asp Lys Phe Ile Val Lys Ser Lys Ala Phe Ser Leu Pro Lys Leu
 130 135 140
 Leu Gly Asp His Glu Leu Thr Lys Leu Tyr Ala His Gly Ser Ile Val
 145 150 155 160
 Phe Ala Arg Leu Ala Pro Phe Asp Tyr His Arg Phe His Phe Pro Cys
 165 170 175
 Asp Cys Leu Pro Gln Lys Thr Arg Cys Val Asn Gly Ala Leu Phe Ser
 180 185 190
 Val His Pro Leu Ala Val Lys Asp Asn Phe Ile Leu Phe Cys Glu Asn
 195 200 205
 Lys Arg Thr Val Thr Val Leu Glu Thr Glu Gln Phe Gly Asn Val Leu
 210 215 220
 Tyr Leu Glu Val Gly Ala Met Asn Val Gly Ser Ile Val Gln Thr Phe
 225 230 235 240
 Ser Pro Asn Gln Thr Tyr Ala Lys Gly Asp Glu Lys Gly Phe Phe Ala
 245 250 255
 Phe Gly Gly Ser Thr Val Ile Leu Leu Phe Leu Pro Asn Ala Ile Arg
 260 265 270
 Phe Asp Asn Asp Leu Leu Lys Asn Ser Arg Met Gly Phe Glu Thr Arg
 275 280 285
 Cys Leu Met Gly Gln Ser Leu Gly Arg Ser Gln Arg Glu Glu Ile
 290 295 300

<210>905

<211>468

<212>PRT

<213>Chlamydia pneumoniae

<400>905

Ile Ser Glu Arg Arg Asn Leu Lys Thr Leu Lys Thr Phe Phe Gly Ile
 1 5 10 15
 Ala Lys Arg Asp Lys Ser Gln Lys Trp Arg Ile Met Trp Leu Val Ile
 20 25 30
 Leu Trp Ala Leu Ala Ala Ser Leu Ala Ile Ala Leu Val Ala Lys Gly
 35 40 45
 Tyr Tyr Arg Phe Val Tyr Phe Arg Arg Tyr Ala Val Gln Val Ile Arg
 50 55 60
 Glu Val Arg Leu Ser Met Glu Leu Lys Glu Trp Ala Leu Ala Glu Gln

65					70					75				80
Gln	Leu	Leu	Pro	Ile	Leu	Lys	Lys	Arg	Ser	Tyr	Arg	Arg	Gln	Cys
					85				90					95
Phe	Glu	Tyr	Met	Arg	Ile	Leu	Arg	Lys	Met	Gln	Arg	Phe	Glu	Glu
			100					105					110	
Glu	Lys	Leu	Leu	Ala	Glu	Ala	Lys	Lys	Leu	Gly	Leu	Arg	Gly	Pro
		115					120					125		Tyr
Phe	Phe	Leu	Glu	Ile	Ala	Tyr	Lys	Ala	Tyr	Arg	Phe	Gly	Ala	Phe
	130					135					140			Lys
Glu	Cys	Ala	Gln	Ala	Phe	Ala	Ser	Val	Pro	Gln	Asp	Leu	Phe	Glu
145					150					155				160
Glu	Asp	Ala	Ala	Lys	Tyr	Ala	Ser	Ala	Leu	Val	Arg	Leu	Gly	Asp
			165						170					175
Asp	Ala	Ala	Cys	Ser	Leu	Ile	Glu	Pro	Trp	Ile	Ser	Pro	Leu	Ser
			180					185					190	His
Gln	Glu	Thr	Phe	Val	Thr	Met	Gly	His	Ile	Tyr	Phe	Thr	Ser	Lys
		195					200					205		Arg
Tyr	Lys	Asp	Ala	Ile	Asp	Phe	Tyr	Asn	Arg	Ala	Asn	Ala	Leu	Gly
	210					215					220			Val
Cys	Pro	Val	Glu	Val	Thr	Tyr	Asn	Leu	Ala	Gln	Ala	Tyr	Arg	Ile
225					230					235				240
Ser	Ser	Tyr	Ala	Lys	Ala	Gly	Lys	Leu	Phe	Arg	Lys	Leu	Leu	Ser
			245						250					255
Pro	Val	Tyr	Lys	Glu	Glu	Ala	Leu	Phe	Asn	Ile	Gly	Leu	Cys	Gln
			260					265					270	
Lys	Leu	Gly	Arg	Pro	Gly	Lys	Ala	Leu	Leu	Ile	Tyr	Gln	Ser	Ser
	275						280					285		Asp
Leu	Trp	Ser	Arg	Gly	Asp	Ala	Leu	Leu	Met	Lys	Tyr	Ala	Ala	Met
	290					295					300			Ala
Ala	Met	Asp	Gln	Arg	Asp	Tyr	Val	Leu	Ala	Glu	Pro	Cys	Trp	Glu
305					310					315				320
Ala	Leu	Arg	Cys	Ser	Thr	Phe	Ala	Lys	Asp	Tyr	Lys	Cys	Gly	Leu
			325						330					335
Tyr	Gly	Phe	Ser	Leu	Cys	Arg	Leu	Arg	Lys	Tyr	Gly	Asp	Ala	Glu
			340					345					350	Arg
Val	Tyr	Cys	Asn	Leu	Ile	Gln	Asn	Phe	Pro	Glu	Cys	Leu	Thr	Ala
		355					360					365		Cys
Lys	Ala	Leu	Ala	Trp	Leu	Cys	Gly	Val	Gly	Tyr	Ala	Thr	Leu	Leu
	370					375					380			Gly
Ser	Glu	Glu	Gly	Leu	Met	Tyr	Ala	Lys	Lys	Ala	Val	Glu	Leu	Asp
385					390					395				400
Ser	Cys	Glu	Thr	Leu	Glu	Leu	Leu	Ser	Ala	Cys	Glu	Ala	Arg	Cys
			405						410					415
Asn	Phe	Asp	Ala	Ala	Tyr	Glu	Ile	Gln	Ser	Phe	Leu	Ser	Ser	Arg
			420					425					430	Asp
Thr	Ser	Leu	Gln	Glu	Lys	Gln	Arg	Arg	Ser	Gln	Ile	Leu	Arg	Ile
		435					440					445		Leu
Arg	Lys	Lys	Leu	Pro	Leu	Asn	Asp	His	His	Ile	Val	Glu	Val	Asp
	450					455						460		Ala
Leu	Leu	Ala	Ala											
465														
<210>	906													
<211>	970													
<212>	PRT													
<213>	Chlamydia pneumoniae													
<400>	906													
Met	Leu	Gly	Phe	Leu	Lys	Arg	Phe	Phe	Gly	Ser	Ser	Gln	Glu	Arg
1				5					10				15	
Leu	Lys	Lys	Phe	Gln	Lys	Leu	Val	Asp	Lys	Val	Asn	Ile	Tyr	Asp
			20					25				30		Glu
Met	Leu	Thr	Pro	Leu	Ser	Asp	Asp	Glu	Leu	Arg	Asn	Lys	Thr	Ala
		35				40					45			Glu
Leu	Lys	Gln	Arg	Tyr	Gln	Asn	Gly	Glu	Ser	Leu	Asp	Ser	Met	Leu
	50					55					60			Pro

Glu	Ala	Tyr	Gly	Val	Val	Lys	Asn	Val	Cys	Arg	Arg	Leu	Ala	Gly	Thr	65	70	75	80
Pro	Val	Glu	Val	Ser	Gly	Tyr	His	Gln	Arg	Trp	Asp	Met	Val	Pro	Tyr	85	90	95	
Asp	Val	Gln	Ile	Leu	Gly	Ala	Ile	Ala	Met	His	Lys	Gly	Phe	Ile	Thr	100	105	110	
Glu	Met	Gln	Thr	Gly	Glu	Gly	Lys	Thr	Leu	Thr	Ala	Val	Met	Pro	Leu	115	120	125	
Tyr	Leu	Asn	Ala	Leu	Thr	Gly	Lys	Pro	Val	His	Leu	Val	Thr	Val	Asn	130	135	140	
Asp	Tyr	Leu	Ala	Gln	Arg	Asp	Cys	Glu	Trp	Val	Gly	Ser	Val	Leu	Arg	145	150	155	160
Trp	Leu	Gly	Leu	Thr	Thr	Gly	Val	Leu	Val	Ser	Gly	Thr	Leu	Leu	Glu	165	170	175	
Lys	Arg	Lys	Lys	Ile	Tyr	Gln	Cys	Asp	Val	Val	Tyr	Gly	Thr	Ala	Ser	180	185	190	
Glu	Phe	Gly	Phe	Asp	Tyr	Leu	Arg	Asp	Asn	Ser	Ile	Ala	Thr	Arg	Leu	195	200	205	
Glu	Glu	Gln	Val	Gly	Arg	Gly	Tyr	Tyr	Phe	Ala	Ile	Ile	Asp	Glu	Val	210	215	220	
Asp	Ser	Ile	Leu	Ile	Asp	Glu	Ala	Arg	Thr	Pro	Leu	Ile	Ile	Ser	Gly	225	230	235	240
Pro	Gly	Glu	Lys	His	Asn	Pro	Val	Tyr	Phe	Glu	Leu	Lys	Glu	Lys	Val	245	250	255	
Ala	Ser	Leu	Val	Tyr	Leu	Gln	Lys	Glu	Leu	Cys	Ser	Arg	Ile	Ala	Leu	260	265	270	
Glu	Ala	Arg	Arg	Gly	Leu	Asp	Ser	Phe	Leu	Asp	Val	Asp	Ile	Leu	Pro	275	280	285	
Lys	Asp	Lys	Lys	Val	Leu	Glu	Gly	Ile	Ser	Glu	Phe	Cys	Arg	Ser	Leu	290	295	300	
Trp	Leu	Val	Ser	Lys	Gly	Met	Pro	Leu	Asn	Arg	Val	Leu	Arg	Arg	Val	305	310	315	320
Arg	Glu	His	Pro	Asp	Leu	Arg	Ala	Met	Ile	Asp	Lys	Trp	Asp	Val	Tyr	325	330	335	
Tyr	His	Ala	Glu	Gln	Asn	Lys	Glu	Glu	Ser	Leu	Glu	Arg	Leu	Ser	Glu	340	345	350	
Leu	Tyr	Ile	Ile	Val	Asp	Glu	His	Asn	Asn	Asp	Phe	Glu	Leu	Thr	Asp	355	360	365	
Lys	Gly	Met	Gln	Gln	Trp	Val	Glu	Tyr	Ala	Gly	Gly	Ser	Thr	Glu	Glu	370	375	380	
Phe	Val	Met	Met	Asp	Met	Gly	His	Glu	Tyr	Ala	Leu	Ile	Glu	Asn	Asp	385	390	395	400
Glu	Thr	Leu	Ser	Pro	Ala	Asp	Lys	Ile	Asn	Lys	Lys	Ile	Ala	Ile	Ser	405	410	415	
Glu	Glu	Asp	Thr	Leu	Arg	Lys	Ala	Arg	Ala	His	Gly	Leu	Arg	Gln	Leu	420	425	430	
Leu	Arg	Ala	Gln	Leu	Leu	Met	Glu	Arg	Asp	Val	Asp	Tyr	Ile	Val	Arg	435	440	445	
Asp	Asp	Gln	Ile	Val	Ile	Ile	Asp	Glu	His	Thr	Gly	Arg	Pro	Gln	Pro	450	455	460	
Gly	Arg	Arg	Phe	Ser	Glu	Gly	Leu	His	Gln	Ala	Ile	Glu	Ala	Lys	Glu	465	470	475	480
His	Val	Thr	Ile	Arg	Lys	Glu	Ser	Gln	Thr	Leu	Ala	Thr	Val	Thr	Leu	485	490	495	
Gln	Asn	Phe	Phe	Arg	Leu	Tyr	Glu	Lys	Leu	Ala	Gly	Met	Thr	Gly	Thr	500	505	510	
Ala	Ile	Thr	Glu	Ser	Arg	Glu	Phe	Lys	Glu	Ile	Tyr	Asn	Leu	Tyr	Val	515	520	525	
Leu	Gln	Val	Pro	Thr	Phe	Lys	Pro	Cys	Leu	Arg	Ile	Asp	His	Asn	Asp	530	535	540	
Glu	Phe	Tyr	Met	Thr	Glu	Arg	Glu	Lys	Tyr	His	Ala	Ile	Val	Asn	Glu	545	550	555	560
Ile	Ala	Thr	Ile	His	Gly	Lys	Gly	Asn	Pro	Ile	Leu	Val	Gly	Thr	Glu	565	570	575	

Ser Val Glu Val Ser Glu Lys Leu Ser Arg Ile Leu Arg Gln Asn Arg
 580 585 590
 Ile Glu His Thr Val Leu Asn Ala Lys Asn His Ala Gln Glu Ala Glu
 595 600 605
 Ile Ile Ala Gly Ala Gly Lys Leu Gly Ala Val Thr Val Ala Thr Asn
 610 615 620
 Met Ala Gly Arg Gly Thr Asp Ile Lys Leu Asp Asn Glu Ala Val Ile
 625 630 635 640
 Val Gly Gly Leu His Val Ile Gly Thr Thr Arg His Gln Ser Arg Arg
 645 650 655
 Ile Asp Arg Gln Leu Arg Gly Arg Cys Ala Arg Leu Gly Asp Pro Gly
 660 665 670
 Ala Ala Lys Phe Phe Leu Ser Phe Glu Asp Arg Leu Met Arg Leu Phe
 675 680 685
 Ala Ser Pro Lys Leu Asn Thr Leu Ile Arg His Phe Arg Pro Pro Glu
 690 695 700
 Gly Glu Ala Met Ser Asp Pro Met Phe Asn Arg Leu Ile Glu Thr Ala
 705 710 715 720
 Gln Lys Arg Val Glu Gly Arg Asn Tyr Thr Ile Arg Lys His Thr Leu
 725 730 735
 Glu Tyr Asp Asp Val Met Asn Lys Gln Arg Gln Ala Ile Tyr Ala Phe
 740 745 750
 Arg His Asp Val Leu His Ala Glu Ser Val Phe Asp Leu Ala Lys Glu
 755 760 765
 Ile Leu Cys His Val Ser Leu Met Val Ala Ser Leu Val Met Ser Asp
 770 775 780
 Arg Gln Phe Lys Gly Trp Thr Leu Pro Asn Leu Glu Trp Ile Thr
 785 790 795 800
 Ser Ser Phe Pro Ile Ala Leu Asn Ile Glu Glu Leu Arg Gln Leu Lys
 805 810 815
 Asp Thr Asp Ser Ile Ala Glu Lys Ile Ala Ala Glu Leu Ile Gln Glu
 820 825 830
 Phe Gln Val Arg Phe Asp His Met Val Glu Gly Leu Ser Lys Ala Gly
 835 840 845
 Gly Glu Glu Leu Asp Ala Ser Ala Ile Cys Arg Asp Val Val Arg Ser
 850 855 860
 Val Met Val Met His Ile Asp Glu Gln Trp Arg Ile His Leu Val Asp
 865 870 875 880
 Met Asp Leu Leu Arg Ser Glu Val Gly Leu Arg Thr Val Gly Gln Lys
 885 890 895
 Asp Pro Leu Leu Glu Phe Lys His Glu Ser Phe Leu Leu Phe Glu Ser
 900 905 910
 Leu Ile Arg Asp Ile Arg Ile Thr Ile Ala Arg His Leu Phe Arg Leu
 915 920 925
 Glu Leu Thr Val Glu Pro Asn Pro Arg Val Asn Asn Val Ile Pro Thr
 930 935 940
 Val Ala Thr Ser Phe His Asn Asn Val Asn Tyr Gly Pro Leu Glu Leu
 945 950 955 960
 Thr Val Val Thr Asp Ser Glu Asp Gln Asp
 965 970

<210>907

<211>487

<212>PRT

<213>Chlamydia pneumoniae

<400>907

Met Leu Lys Ile Ala Ile Leu Gly Arg Pro Asn Val Gly Lys Ser Ser
 1 5 10 15
 Leu Phe Asn Arg Leu Cys Lys Arg Ser Leu Ala Ile Val Asn Ser Gln
 20 25 30
 Glu Gly Thr Thr Arg Asp Arg Leu Tyr Gly Glu Leu His Ala Phe Gly
 35 40 45
 Val Pro Ala Gln Val Ile Asp Thr Gly Gly Val Asp His Asn Ser Glu
 50 55 60
 Asp Tyr Phe Gln Lys His Ile Tyr Asn Gln Ala Leu Thr Gly Ala Lys

65 70 75 80
 Glu Ala Asp Val Leu Leu Leu Val Ile Asp Ile Arg Cys Gly Ile Thr
 85 90 95
 Glu Glu Asp Ala His Leu Ala Lys Leu Leu Pro Leu Lys Lys Pro
 100 105 110
 Leu Ile Leu Val Ala Asn Lys Ala Asp Ser Arg Gln Glu Glu Leu Gln
 115 120 125
 Ile His Glu Thr Tyr Lys Leu Gly Ile Arg Asp Ile Val Val Thr Ser
 130 135 140
 Thr Ala His Asp Lys His Ile Asp Thr Leu Leu Gln Arg Ile Lys Leu
 145 150 155 160
 Val Ala Asn Leu Pro Glu Pro Arg Glu Glu Glu Glu Glu Gly Leu Glu
 165 170 175
 Glu Leu Ser Val Asp Glu His Glu Glu Ser Glu Ala Ala Leu Pro Ser
 180 185 190
 Asn Thr Phe Pro Asp Phe Ser Glu Val Phe Thr Glu Gly Phe Ser Pro
 195 200 205
 Glu Glu Pro Cys Thr Ile Pro Glu Ser Pro Gln Gln Ala Pro Lys Thr
 210 215 220
 Leu Lys Ile Ala Leu Ile Gly Arg Pro Asn Val Gly Lys Ser Ser Ile
 225 230 235 240
 Ile Asn Gly Leu Leu Asn Glu Glu Arg Cys Ile Ile Asp Asn Thr Pro
 245 250 255
 Gly Thr Thr Arg Asp Asn Ile Asp Ile Leu Tyr Ser His Lys Asp Arg
 260 265 270
 Gln Tyr Leu Phe Ile Asp Thr Ala Gly Leu Arg Lys Met Lys Ser Val
 275 280 285
 Lys Asn Ser Ile Glu Trp Ile Ser Ser Ser Arg Thr Glu Lys Ala Ile
 290 295 300
 Ser Arg Ala Asp Ile Cys Leu Leu Val Ile Asp Ala Thr Gln Lys Leu
 305 310 315 320
 Ser Ser Tyr Glu Lys Arg Ile Leu Ser Leu Ile Ser Lys Arg Lys Lys
 325 330 335
 Pro His Ile Ile Leu Ile Asn Lys Trp Asp Leu Leu Glu Glu Val Arg
 340 345 350
 Met Glu His Tyr Cys Lys Asp Leu Arg Ala Thr Asp Pro Tyr Leu Gly
 355 360 365
 Gln Ala Lys Met Leu Cys Ile Ser Ala Thr Thr Lys Arg Asn Leu Lys
 370 375 380
 Lys Ile Phe Ser Ala Ile Asp Glu Leu His His Val Val Ser Asn Lys
 385 390 395 400
 Val Pro Thr Pro Ile Val Asn Lys Thr Leu Ala Ser Ala Leu His Arg
 405 410 415
 Asn His Pro Gln Val Ile Gln Gly Arg Leu Arg Ile Tyr Tyr Ala
 420 425 430
 Ile Gln Lys Thr Thr Thr Pro Leu Gln Phe Leu Leu Phe Ile Asn Ala
 435 440 445
 Lys Ser Leu Leu Thr Lys His Tyr Glu Tyr Tyr Leu Lys Asn Thr Leu
 450 455 460
 Lys Ser Ser Phe Asn Leu Tyr Gly Ile Pro Phe Asp Leu Glu Phe Lys
 465 470 475 480
 Glu Lys Pro Lys Arg His Asn
 485

<210>908

<211>410

<212>PRT

<213>Chlamydia pneumoniae

<400>908

Met Thr Thr Ile Ala Ile Glu Ala Ala Lys Lys Val Leu Ile Lys Leu
 1 5 10 15
 Arg Asn Ala Gly Tyr Gln Ala Tyr Phe Val Gly Gly Cys Val Arg Asp
 20 25 30
 Met Leu Met Asn Arg Pro Leu Glu Asp Ile Asp Ile Ala Thr Asn Ala
 35 40 45

Ser Pro Thr Ile Val Ser Thr Ile Phe Pro Asp Val Ile Ser Ile Gly
 50 55 60
 Val Ala Phe Gly Ile Ile Val Val Lys Gln Asp Gly Arg Leu Phe Glu
 65 70 75 80
 Val Ala Thr Phe Arg Ser Asp Gly Glu Tyr Lys Asp Gly Arg His Pro
 85 90 95
 Asp Arg Ile Ile Phe Ser Ser Met Arg Glu Asp Ala Leu Arg Arg Asp
 100 105 110
 Phe Thr Val Asn Gly Met Tyr Tyr Asp Pro Phe Glu Asp Lys Val Phe
 115 120 125
 Asp Phe Val Glu Gly Thr Arg Asp Ile Glu Lys Lys Val Ile Arg Ala
 130 135 140
 Ile Gly His Pro Arg Leu Arg Phe Ser Glu Asp Lys Leu Arg Ile Leu
 145 150 155 160
 Arg Ala Ile Arg Phe Ser Ser Ser Leu Gly Phe Thr Leu Asp Pro Thr
 165 170 175
 Thr Glu Arg Ala Ile Ile Lys Glu Ala Pro Ala Leu Val Asn Ser Val
 180 185 190
 Ser Pro Glu Arg Ile Trp Gln Glu Leu Lys Lys Met Leu Lys Arg Gln
 195 200 205
 Pro Tyr Gly Ala Leu Ser Leu Leu Leu Lys Leu Lys Val Leu Ile Phe
 210 215 220
 Ile Phe Pro Glu Leu Arg Asp Ile Pro Tyr Ser Leu Leu Arg Thr Thr
 225 230 235 240
 Ile Glu Phe Ala Arg Lys Phe Asn Pro Thr His Phe Pro Glu Ile Leu
 245 250 255
 Phe Leu Leu Pro Leu Phe Gln Gly Val Ser Glu Glu Ala Ala Thr Val
 260 265 270
 Ala Phe Gly Arg Leu Arg Ile Ser Asn Lys Glu Leu Lys Leu Ile Glu
 275 280 285
 Ser Trp Tyr Glu Ala Leu Pro His Phe Gln Asn Gln Ser Gly Asn Arg
 290 295 300
 Val Phe Trp Ala His Phe Leu Ala Ser Pro Thr Ala Pro Leu Phe Leu
 305 310 315 320
 Glu Leu Phe Ser Ala Leu Gln Lys Asp Pro Ser Arg Gln Gln His Phe
 325 330 335
 Ile Ser Arg Val Gln Glu Leu Glu Ser Arg Leu Glu Gln Phe Ile Leu
 340 345 350
 Arg Ile Lys Thr Ser Ser Pro Val Ser Ala Pro Asp Leu Ile Ala
 355 360 365
 Lys Gly Ile Ser Pro Gly Arg Leu Leu Gly Asp Leu Leu Arg Glu Ala
 370 375 380
 Glu Ile Leu Ser Ile Glu Asn Glu Cys Leu Asp Lys Glu Lys Ile Leu
 385 390 395 400
 Leu Leu Leu Gln Glu Lys Gly Phe Trp Lys
 405 410

<210>909

<211>185

<212>PRT

<213>Chlamydia pneumoniae

<400>909

Arg Val Tyr Pro Ser Gln Tyr Gly Lys Tyr Leu Ile Tyr Arg Arg Arg
 1 5 10 15
 Thr Phe Val Asn Leu Asp Lys Ile Ile Ala Lys Arg Leu Gly Lys Thr
 20 25 30
 Thr Ile Gly Phe Ser Asp Asp Gln Ala Asp Leu Ser Gln Lys Thr Arg
 35 40 45
 Asp His Leu Leu Ala Lys Val Glu Thr Glu Asp Leu Ile Ala Phe Gly
 50 55 60
 Met Ile Pro Glu Phe Val Gly Arg Phe Asn Cys Ile Val Asn Cys Glu
 65 70 75 80
 Glu Leu Ser Leu Asp Glu Leu Val Ala Ile Leu Thr Glu Pro Thr Asn
 85 90 95
 Ala Ile Val Lys Gln Tyr Met Glu Leu Phe Ala Glu Glu Asn Val Lys

100 105 110
 Leu Val Phe Lys Lys Glu Ala Leu Tyr Ala Ile Ala Lys Lys Ala Lys
 115 120 125
 Gln Ala Lys Thr Gly Ala Arg Ala Leu Gly Met Ile Leu Glu Asn Leu
 130 135 140
 Leu Arg Asp Leu Met Phe Glu Ile Pro Ser Asp Pro Thr Val Glu Ala
 145 150 155 160
 Ile His Ile Gln Glu Asp Thr Ile Ala Glu Asn Lys Ala Pro Ile Ile
 165 170 175
 Ile Arg Arg Thr Pro Glu Ala Ile Ala
 180 185

<210>910

<211>256

<212>PRT

<213>Chlamydia pneumoniae

<400>910

Met Asn Lys Lys Asn Leu Thr Ile Cys Ser Phe Cys Gly Arg Ser Glu
 1 5 10 15
 Lys Asp Val Glu Lys Leu Ile Ala Gly Pro Ser Val Tyr Ile Cys Asp
 20 25 30
 Tyr Cys Ile Lys Leu Cys Ser Gly Ile Leu Asp Lys Lys Pro Ser Ser
 35 40 45
 Thr Ile Ser Ser Ala Pro Val Ser Glu Thr Pro Ser Gln Pro Ser Asp
 50 55 60
 Leu Arg Val Leu Thr Pro Lys Glu Ile Lys Lys His Ile Asp Glu Tyr
 65 70 75 80
 Val Ile Gly Gln Glu Arg Ala Lys Lys Thr Ile Ala Val Ala Val Tyr
 85 90 95
 Asn His Tyr Lys Arg Ile Arg Ala Leu Leu His Asn Lys Gln Val Ser
 100 105 110
 Tyr Gly Lys Ser Asn Val Leu Leu Gly Pro Thr Gly Ser Gly Lys
 115 120 125
 Thr Leu Ile Ala Lys Thr Leu Ala Lys Ile Leu Asp Val Pro Phe Thr
 130 135 140
 Ile Ala Asp Ala Thr Thr Leu Thr Glu Ala Gly Tyr Val Gly Glu Asp
 145 150 155 160
 Val Glu Asn Ile Val Leu Arg Leu Leu Gln Ala Ala Asp Tyr Asp Val
 165 170 175
 Ala Arg Ala Glu Arg Gly Ile Ile Tyr Ile Asp Glu Ile Asp Lys Ile
 180 185 190
 Gly Arg Thr Thr Ala Asn Val Ser Ile Thr Arg Asp Val Ser Gly Glu
 195 200 205
 Gly Val Gln Gln Ala Leu Leu Lys Ile Val Glu Gly Thr Thr Ala Asn
 210 215 220
 Val Pro Pro Lys Gly Gly Arg Lys His Pro Asn Gln Glu Tyr Ile Arg
 225 230 235 240
 Val Asn Thr Glu Asn Ile Leu Phe Ile Val Gly Gly Leu Ser Ser Thr
 245 250 255

<210>911

<211>116

<212>PRT

<213>Chlamydia pneumoniae

<400>911

Cys Lys Tyr Leu Leu His Arg Ser Ser Cys Ile His Gly Ser Pro Leu
 1 5 10 15
 Ile Ile Arg Arg Thr Lys Gly Lys Arg His Ala Leu Pro His Ser Arg
 20 25 30
 Met Met Ile His Gln Pro Ser Gly Ile Ile Gly Thr Ser Ala Asp
 35 40 45
 Ile Gln Leu Gln Ala Ala Glu Ile Leu Thr Leu Lys Lys His Leu Ala
 50 55 60
 Asn Ile Leu Ser Glu Cys Thr Gly Gln Pro Val Glu Lys Ile Ile Glu
 65 70 75 80
 Asp Ser Glu Arg Asp Phe Phe Met Gly Ala Glu Glu Ala Ile Ser Tyr

Pro Glu Ile Gln Ser Phe Leu Arg Gly Asp Thr Leu Thr Phe Thr Val
 115 120 125
 Asn Ala Val Ile Glu Val Ser Ile Pro Glu Ile Asp Asp Glu Lys Ala
 130 135 140
 Arg Gln Leu Gln Ala Glu Ser Leu Asp Asp Leu Lys Ala Lys Leu Arg
 145 150 155 160
 Ile Gln Leu Glu Lys Gln Ala Lys Asp Lys Gln Leu Gln Lys Arg Phe
 165 170 175
 Ser Glu Ala Glu Asp Ala Leu Ala Met Leu Val Asp Phe Glu Leu Pro
 180 185 190
 Thr Ser Leu Leu Glu Glu Arg Ile Ser Leu Ile Thr Arg Glu Lys Leu
 195 200 205
 Leu Asn Ala Arg Leu Ile Gln Tyr Cys Ser Asp Glu Glu Leu Glu Lys
 210 215 220
 Arg Asn Gln Asn Leu Ser Arg Lys Gln Lys Lys Met Leu Gln Lys His
 225 230 235 240

<210>915

<211>186

<212>PRT

<213>Chlamydia pneumoniae

<400>915

Val Gln Ala Ser Ser Pro Ala Phe Pro Phe Lys Ser Asn Lys Lys Gly
 1 5 10 15
 Cys Leu Val Pro Arg Ser Leu Ser Asn Glu Gln Phe Ser Val Asp Leu
 20 25 30
 Glu Glu Ser Pro Gly Cys Ile Val Ser Ala Leu Val Lys Val Ser Pro
 35 40 45
 Glu Val Leu Asn Lys Leu Asn Lys Gln Ala Leu Lys Lys Ile Lys Lys
 50 55 60
 Glu Ile Thr Leu Pro Gly Phe Arg Lys Gly Lys Ala Pro Asp Asp Val
 65 70 75 80
 Ile Ala Ser Arg Tyr Pro Thr Asn Val Arg Lys Glu Leu Gly Glu Leu
 85 90 95
 Val Thr Gln Asp Ala Tyr His Ala Leu Ser Thr Val Gly Asp Arg Arg
 100 105 110
 Pro Leu Ser Pro Lys Ala Val Arg Ser Asn Ser Ile Thr Gln Phe Asp
 115 120 125
 Leu Gln Glu Gly Ala Lys Val Glu Phe Ser Tyr Glu Lys Leu Ser Leu
 130 135 140
 Gln Phe Leu Ile Phe Leu Gly Lys Thr Phe Leu Tyr Leu Arg Lys Lys
 145 150 155 160
 Leu Leu Val Arg Phe Gln Ile Val Ile Ser Arg Arg Asp Ser Gln Thr
 165 170 175
 Leu Val Cys Ser Leu Gln Gln Lys Leu Leu
 180 185

<210>916

<211>1075

<212>PRT

<213>Chlamydia pneumoniae

<400>916

Ala Asp Tyr Ile Ile His Ser Tyr Ser Arg Gly Glu Met Leu Asn Phe
 1 5 10 15
 Arg Lys Leu Arg Arg Asp Phe Ser Ala Asn Ile Leu Gln Asp Gly Lys
 20 25 30
 Lys Leu Phe Glu Gln Gly Ala Val Ile Asp Ala Lys Ile Leu Ser Met
 35 40 45
 Asn Gly Glu Thr Val Cys Ile Ser Ala Gln Val Arg Gly Leu Tyr Asp
 50 55 60
 Asn Ile Tyr Glu Cys Glu Ile Glu Val Asp Arg Ser Glu Ser Asp Thr
 65 70 75 80
 Val Asp Ser Asn Cys Asp Cys Ser Tyr Asn Tyr Asp Cys Gln His Ile
 85 90 95
 Val Ala Leu Leu Phe Tyr Leu Glu Gln Tyr Phe Asn Glu Met Val Val
 100 105 110

Ala Tyr Ala Arg Ser Ala Asp Leu Glu Thr Asp His Glu Ile Asn Glu
 115 120 125
 Glu Val Lys Lys Glu Leu Lys Glu Thr Phe Val Ala Ala Ala Thr Lys
 130 135 140
 Glu Glu Glu Arg Lys Asp Arg Glu His Gln Lys Glu Ile Leu Arg Glu
 145 150 155 160
 Tyr Val His Ala Ala Asn Ala Leu Ser Ala Asn Pro Phe Phe Leu Pro
 165 170 175
 Leu Glu Tyr Leu Glu Lys Asp Ser Ala Glu Leu Ala Val Leu Phe Val
 180 185 190
 Ser Val Asn Glu Asp Thr Phe Ala Pro Ala Asn Gln Pro Ile Glu Phe
 195 200 205
 Gln Leu Val Leu Arg Leu Pro Cys Arg Ser Lys Pro Phe Tyr Ile Ser
 210 215 220
 Asn Ile Arg Thr Phe Leu Glu Gly Val Leu Tyr Gln Glu Pro Ile Val
 225 230 235 240
 Leu Asn Gly Arg Arg Phe Phe Phe Thr Met Gln Ser Phe Asn Ala Ser
 245 250 255
 Asp Arg Lys Leu Ile Asp Leu Leu Ile Arg Tyr Val Arg Tyr Pro Asn
 260 265 270
 His Thr Thr Glu Glu Lys Leu Leu Lys Ser Ala Tyr Leu Met Pro Pro
 275 280 285
 Ala Leu Gly Val Ile Leu Ala Lys Met Phe Glu His Gln Leu Ala Asp
 290 295 300
 Arg Gly Gly Gly Ser Leu Gly Glu Lys Glu Ser Phe Ser Gly Leu Phe
 305 310 315 320
 Cys Gly Asn Leu Glu Glu Pro Leu Cys Trp Ser Leu Thr Pro Ala Lys
 325 330 335
 Met Lys Phe Asn Leu Asp Phe Phe Asp Met Pro Tyr Lys Ala Leu Leu
 340 345 350
 Met Thr Pro Val Ile Leu Val Asp Asp Asp Glu Val Gln Pro Glu Gln
 355 360 365
 Thr Met Leu Leu Glu Ser Asp Ala Pro Gly Ile Ile His His Phe Val
 370 375 380
 Tyr His Arg Phe Ser Pro Gln Ile Lys Arg Ala His Leu Arg Ser Phe
 385 390 395 400
 Ser Arg Leu Arg Asp Ile Ala Ile Pro Glu Ala Leu Phe Gly Ser Phe
 405 410 415
 Arg Glu Asn Ala Leu Pro Val Phe Gln Glu Tyr Ala Glu Ile Ala Asn
 420 425 430
 Val His Leu Leu Asn Ser Phe Val Thr Leu Pro Tyr Val Asp Glu Val
 435 440 445
 Arg Ala Ile Cys Asp Met Ser Tyr Leu Asp Gly Glu Leu Glu Ala Lys
 450 455 460
 Leu His Phe Leu Tyr Gly Ser Leu Arg Val Pro Ala Ala Ser Leu Ala
 465 470 475 480
 Leu Gln Tyr Gln Asp Val Arg Ala Phe Ile Ser Asp Glu Gly Ile Leu
 485 490 495
 Ala Arg Asn Leu Val Glu Glu Arg Lys Met Leu Glu Glu Val Phe Ser
 500 505 510
 Gly Phe Ile Tyr Asp Glu Arg Asp Gly Ala Phe Arg Val Lys Ser Glu
 515 520 525
 Lys Lys Ile Val Glu Phe Met Thr Glu Thr Ile Pro Ala Asn Gln His
 530 535 540
 Arg Ile Thr Phe Asn Cys Pro Glu Asn Leu Ser Gly Gln Phe Ile Tyr
 545 550 555 560
 Asp Glu Thr Ile Phe Glu Leu Ser Phe Arg Glu Gly Ser Asp Ile Asn
 565 570 575
 Tyr Tyr Glu Ala Asp Leu Lys Val His Gly Leu Leu Lys Gly Val Pro
 580 585 590
 Leu Asp Leu Leu Trp Asp Cys Ile Ser Ala Lys Lys Arg Phe Leu Glu
 595 600 605
 Leu Pro Lys Ala Gly Gln Gln Ser Lys Gly Thr Arg Arg Gly Lys Val
 610 615 620

Asn Ser Gly Lys Leu Pro Cys Ile Leu Val Leu Asp Leu Glu Lys Ile
 625 630 635 640
 Ala Pro Val Val Gln Ile Phe Asn Glu Ile Gly Phe Lys Val Leu Asp
 645 650 655
 Asp Leu Val Gln Lys Cys Pro Leu Trp Ser Leu Thr Gly Ile Ser Leu
 660 665 670
 Asp Gln Phe Glu Ala Leu Pro Val Asn Phe Ser Met Ser Glu Arg Leu
 675 680 685
 Ile Glu Ile Gln Lys Gln Ile Arg Gly Glu Ile Glu Phe Asp Phe Gln
 690 695 700
 Asp Val Pro Gln Gln Ile Gln Ala Thr Leu Arg Ser Tyr Gln Thr Glu
 705 710 715 720
 Gly Val His Trp Leu Glu Arg Leu Arg Lys Met His Leu Asn Gly Ile
 725 730 735
 Leu Ala Asp Asp Met Gly Leu Gly Lys Thr Leu Gln Ala Ile Ile Ala
 740 745 750
 Val Thr Gln Ser Lys Leu Glu Lys Gly Ser Gly Cys Ser Leu Ile Val
 755 760 765
 Cys Pro Thr Ser Leu Val Tyr Asn Trp Lys Glu Glu Phe Arg Lys Phe
 770 775 780
 Asn Pro Glu Phe Arg Thr Leu Val Ile Asp Gly Val Pro Ser Gln Arg
 785 790 795 800
 Arg Lys Gln Leu Thr Ala Leu Ala Asp Arg Asp Val Ala Ile Thr Ser
 805 810 815
 Tyr Asn Leu Leu Gln Lys Asp Val Glu Leu Tyr Lys Ser Phe Arg Phe
 820 825 830
 Asp Tyr Val Val Leu Asp Glu Ala His His Ile Lys Asn Arg Thr Thr
 835 840 845
 Arg Asn Ala Lys Ser Val Lys Met Ile Gln Ser Asp His Arg Leu Ile
 850 855 860
 Leu Thr Gly Thr Pro Ile Glu Asn Ser Leu Glu Glu Leu Trp Ser Leu
 865 870 875 880
 Phe Asp Phe Leu Met Pro Gly Leu Leu Ser Ser Tyr Asp Arg Phe Val
 885 890 895
 Gly Lys Tyr Ile Arg Thr Gly Asn Tyr Met Gly Asn Lys Ala Asp Asn
 900 905 910
 Met Val Ala Leu Lys Lys Lys Val Ser Pro Phe Ile Leu Pro Arg Met
 915 920 925
 Lys Glu Asp Val Leu Lys Asp Leu Pro Pro Val Ser Glu Ile Leu Tyr
 930 935 940
 His Cys His Leu Thr Glu Ser Gln Lys Glu Leu Tyr Gln Ser Tyr Ala
 945 950 955 960
 Ala Ser Ala Lys Lys Glu Leu Ser Arg Leu Val Lys Gln Glu Gly Phe
 965 970 975
 Glu Arg Ile His Ile His Val Leu Ala Thr Leu Thr Arg Leu Lys Gln
 980 985 990
 Ile Cys Cys His Pro Ala Ile Phe Ala Lys Asp Ala Pro Glu Pro Gly
 995 1000 1005
 Asp Ser Ala Lys Tyr Asp Met Leu Met Asp Leu Leu Ser Ser Leu Val
 1010 1015 1020
 Asp Ser Gly His Lys Thr Val Val Phe Ser Gln Tyr Thr Lys Met Leu
 1025 1030 1035 1040
 Gly Ile Ile Lys Lys Asp Leu Glu Ser Arg Gly Ile Pro Phe Val Tyr
 1045 1050 1055
 Leu Asp Gly Ser Thr Lys Asn Arg Leu Asp Leu Val Asn Gln Phe Asn
 1060 1065 1070
 Glu Asp Thr
 1075

<210>917

<211>366

<212>PRT

<213>Chlamydia pneumoniae

<400>917

Met Ser Pro His Arg Asn Leu Phe Lys Leu Lys Asn Phe Ser Asn Arg

Ile	Asn	Asp	Ser	Glu	Asp	Ile	Arg	Leu	Cys	Asp	Gly	Ser	Asp	Thr	Glu
1				5					10					15	
Tyr	Asp	Glu	Leu	Cys	Thr	Leu	Met	Glu	Ser	Thr	Gly	Thr	Met	Ile	Arg
			20					25					30		
Leu	Asn	Pro	Glu	Phe	His	Pro	Asn	Cys	Phe	Leu	Val	Arg	Ser	Ser	Ala
			35					40				45			
Asp	Asp	Val	Ala	Arg	Val	Glu	Gln	Phe	Thr	Phe	Ile	Cys	Thr	Ser	Thr
	50					55					60				
Glu	Ala	Glu	Ala	Gly	Pro	Thr	Asn	Asn	Trp	Arg	Asp	Pro	Gln	Glu	Met
65					70					75				80	
Arg	Arg	Glu	Leu	His	Gln	Leu	Phe	Arg	Gly	Cys	Met	Gln	Gly	Arg	Thr
				85					90					95	
Leu	Tyr	Ile	Val	Pro	Phe	Cys	Met	Gly	Pro	Leu	Asp	Ser	Pro	Phe	Ser
			100					105					110		

Ile Val Gly Val Glu Leu Thr Asp Ser Pro Tyr Val Val Cys Ser Met
 115 120 125
 Lys Ile Met Thr Arg Met Gly Asp Asp Val Leu Arg Ser Leu Gly Thr
 130 135 140
 Ser Gly Lys Phe Leu Lys Cys Leu His Ser Val Gly Lys Pro Leu Ser
 145 150 155 160
 Pro Gly Glu Ala Asp Val Ser Trp Pro Cys Asn Pro Lys Ser Met Arg
 165 170 175
 Ile Val His Phe Gln Asp Asp Ser Ser Val Met Ser Phe Gly Ser Gly
 180 185 190
 Tyr Gly Gly Asn Ala Leu Leu Gly Lys Lys Cys Val Ala Leu Arg Leu
 195 200 205
 Ala Ser Tyr Met Ala Lys Ser Gln Gly Trp Leu Ala Glu His Met Leu
 210 215 220
 Ile Ile Gly Ile Thr Asn Pro Glu Gly Lys Lys Lys Tyr Phe Ser Ala
 225 230 235 240
 Ser Phe Pro Ser Ala Cys Gly Lys Thr Asn Leu Ala Met Leu Met Pro
 245 250 255
 Lys Leu Pro Gly Trp Lys Ile Glu Cys Ile Gly Asp Asp Ile Ala Trp
 260 265 270
 Ile Arg Pro Gly Arg Asp Gly Arg Leu Tyr Ala Val Asn Pro Glu Tyr
 275 280 285
 Gly Phe Phe Gly Val Ala Pro Gly Thr Ser Glu Arg Thr Asn Pro Asn
 290 295 300
 Ala Leu Ala Thr Cys Arg Ser Asn Ser Ile Phe Thr Asn Val Ala Leu
 305 310 315 320
 Thr Ala Asp Gly Asp Val Trp Trp Glu Gly Leu Thr Glu Gln Pro Pro
 325 330 335
 Glu Pro Leu Thr Asp Trp Leu Gly Lys Pro Trp Lys Pro Gly Gly Ser
 340 345 350
 Pro Ala Ala His Pro Asn Ser Arg Phe Thr Ala Pro Leu Arg Gln Cys
 355 360 365
 Pro Ser Leu Asp Pro Glu Trp Asn Ser Pro Gln Gly Val Pro Leu Asp
 370 375 380
 Ala Ile Ile Phe Gly Gly Arg Arg Ser Glu Thr Ile Pro Leu Val Tyr
 385 390 395 400
 Glu Ala Leu Ser Trp Glu His Gly Val Thr Ile Gly Ala Gly Met Ser
 405 410 415
 Ser Thr Thr Thr Ala Ala Ile Val Gly Gln Leu Gly Lys Leu Arg His
 420 425 430
 Asp Pro Phe Ala Met Leu Pro Phe Cys Gly Tyr Asn Met Ala Tyr Tyr
 435 440 445
 Phe Gln His Trp Leu Ser Phe Ala Glu Asn Arg Ser Leu Lys Leu Pro
 450 455 460
 Lys Ile Phe Gly Val Asn Trp Phe Arg Lys Asn Asn Gln Gly Glu Phe
 465 470 475 480
 Leu Trp Pro Gly Phe Ser Glu Asn Leu Arg Val Leu Glu Trp Ile Phe
 485 490 495
 Gln Arg Thr Asp Gly Leu Glu Asp Ile Ala Glu Arg Thr Pro Ile Gly
 500 505 510
 Tyr Leu Pro Asn Ile Gln Lys Phe Asn Leu Asn Gly Leu Asn Leu Asp
 515 520 525
 Leu Gln Thr Val Gln Glu Leu Phe Ser Val Asp Ala Glu Gly Trp Leu
 530 535 540
 Ala Glu Val Glu Asn Ile Gly Glu Tyr Leu Lys Ile Phe Gly Ser Asp
 545 550 555 560
 Cys Pro Gln Gln Ile Thr Asp Glu Leu Leu Arg Ile Lys Ser Glu Leu
 565 570 575
 Lys Glu Lys

<210>919

<211>150

<212>PRT

<213>Chlamydia pneumoniae

<400>919

Arg Lys Gly Ala Val Asn Arg Glu Phe Gly Trp Ala Ala Gly Leu Pro
 1 5 10 15
 Pro Gly Phe Gln Gly Phe Pro Ser Gln Ser Val Lys Gly Ser Gly Gly
 20 25 30
 Cys Ser Val Asn Pro Ser His Gln Thr Ser Pro Ser Ala Val Lys Ala
 35 40 45
 Thr Phe Val Lys Ile Glu Phe Asp Leu Gln Val Ala Lys Ala Leu Gly
 50 55 60
 Phe Val Arg Ser Glu Val Pro Gly Ala Thr Pro Lys Asn Pro Tyr Ser
 65 70 75 80
 Gly Phe Thr Ala Tyr Asn Leu Pro Ser Arg Pro Gly Arg Ile Gln Ala
 85 90 95
 Ile Ser Ser Pro Ile His Ser Ile Phe Gln Pro Gly Ser Leu Gly Ile
 100 105 110
 Asn Ile Ala Lys Phe Val Leu Pro Gln Ala Leu Gly Asn Glu Ala Glu
 115 120 125
 Lys Tyr Phe Phe Phe Pro Ser Gly Leu Val Ile Pro Ile Ile Asn Met
 130 135 140
 Cys Ser Ala Ser Gln Pro
 145 150

<210>920

<211>780

<212>PRT

<213>Chlamydia pneumoniae

<400>920

Ile Lys Leu Arg Ile Ile Asp Tyr Tyr Tyr Leu Ile Asn Thr Val Thr
 1 5 10 15
 Leu Gln Pro Ser Tyr Ile Asn Phe Thr Pro Asn Val Thr Thr Ala Leu
 20 25 30
 Ser Gly Gly Lys Ile Asp Thr Ser Ala Ile Glu Leu Ser Cys Ser Ala
 35 40 45
 Leu Phe Phe Gln Glu Leu Gln Asp Lys Ala Gln Gly Leu Lys His Ala
 50 55 60
 Leu Gly Leu Val Gln Glu Leu Ser Ala Glu Ala Leu Arg Pro Ala Gln
 65 70 75 80
 Val Gln Thr Ser Ile Ser Tyr Leu Pro Thr Glu Glu Ser Ser Arg Pro
 85 90 95
 Gly Ile Ser Ala Gly Ile Ile Asp Arg Thr Met Pro Thr Phe Thr Asp
 100 105 110
 Asp Glu Val Lys Ala Ile Leu Gln Asn Pro Asn Phe Glu Thr Ser Lys
 115 120 125
 Ile Phe Val Glu Gly Leu Asp Lys Val Phe Lys Ser Tyr Leu Asp Ser
 130 135 140
 Val Thr Pro Pro Glu Gly Ile Asp Pro Ser Asn Pro Glu Ser Ala Ile
 145 150 155 160
 Ile Leu Asn Tyr Ile Thr Leu Leu Asn Asn Leu Lys Pro Lys Phe Ala
 165 170 175
 Ala Gly Ser Thr Pro Thr Asp Ala Asp Tyr Asn Ala Leu Tyr Ala Leu
 180 185 190
 Pro Gly Asp Phe Val Lys Glu Ile Glu Ala Leu Lys Ala Ala Asp Ala
 195 200 205
 Pro Pro Lys Ser Lys Val His Ala Phe Trp Gln Glu Ile Met Thr Ile
 210 215 220
 Tyr Asn Asn Met Gln Val Leu Ser Tyr Pro Val Thr Asp Tyr Leu Asn
 225 230 235 240
 Val Gln Ile Ala Asp Leu Ser Leu Asn Ile Thr Ala Ala Gln Glu Val
 245 250 255
 Gln Gln Tyr Leu Lys Asn Phe Tyr Ser Ile Leu Lys Asp Ile Leu Asn
 260 265 270
 Pro Gly Trp Thr Asp Pro Gln Ala Thr His Tyr Pro Ala Asp Ala Glu
 275 280 285
 Tyr Asn Ala Arg Asp Ala Gly Val Ile Gln Ser Leu Leu Asn Leu Ser
 290 295 300

Gly Asn Tyr Arg Gln Leu Thr Glu Asn Met Leu Pro Asn Thr Asp Thr
 305 310 315 320
 Ser Leu Pro Gln Glu Ile Ile Ala Gln Ile Arg Ser Phe Gln Asn Gly
 325 330 335
 Val Asn Gly Thr Ile Ile Ala Ser Asn Thr Leu Leu Pro Thr Thr Met
 340 345 350
 Arg Leu Asp Thr Leu Leu Gly Val Ile Tyr Thr Tyr Gln Cys Cys Ala
 355 360 365
 Thr Ile Phe Gly Met Ser Tyr Gly Thr Ser Thr Pro Ala Lys Gln Asn
 370 375 380
 Tyr Ile Asp Ala Ile Asn Gln Glu Lys Ser Tyr Trp Gln Ala Arg Ala
 385 390 395 400
 Asn Gly Phe Asp Val Thr Ser Asp Gln Val Phe Asp Gln Phe Ala Thr
 405 410 415
 Asn Ile Gln Ser Gly Thr Ser Tyr Arg Gly Ile Asp Leu Phe Lys Asn
 420 425 430
 Asn Lys Val Asn Glu Ile Asn Pro Ile Phe Leu Ser Gln Ala Ala Ser
 435 440 445
 Phe Leu Arg Tyr Pro Tyr Asn Leu Met Ser Arg Ser Met Tyr Gln Thr
 450 455 460
 Ile Glu Asp Ala Ala Asn Arg Ser Ile Thr Ala Leu Asp Gly Leu Ile
 465 470 475 480
 Ser Gly Trp Ser Thr Gln Ile Ala Thr Phe Gln Thr Gln Lys Asn Ser
 485 490 495
 Leu Asp Pro Ser Leu Leu Lys Tyr Phe Asp Thr Met Lys Ala Asn Lys
 500 505 510
 Glu Ser Phe Val Thr Thr Ala Pro Leu Gln Met Val Tyr Ser Ser Leu
 515 520 525
 Met Leu Asp Lys Tyr Leu Pro Thr Gln Gln Asn Val Ile Ala Ser Leu
 530 535 540
 Gly Ile Gln Met Thr Tyr Ser Asn Lys Ala Ala Lys Tyr Leu Asn Glu
 545 550 555 560
 Leu Ile Lys Glu Ile Thr Thr Phe Gln Ser Ala Asp Ile Tyr Tyr Ser
 565 570 575
 Leu Ser Ile Tyr Leu Lys Gln Met Asn Leu Gln Ala Val Ala Asp Pro
 580 585 590
 Ile Gly Lys Ala Val Gly Val Leu Asn Asp Glu Lys Thr Arg Ala Met
 595 600 605
 Ala Asp Ile Thr Arg Cys Asn Lys Ile Lys Ala Ala Ile Asp Lys Met
 610 615 620
 Leu Val Glu Ile Lys Ala Asp Ala Glu Leu Ser Lys Ser Gln Ile Arg
 625 630 635 640
 Glu Leu Val Asp Thr Leu Thr Asn Phe Lys Ser Gln Ser Asp Asp Leu
 645 650 655
 Ile Arg Asn Leu Ser Cys Leu Leu Gly Phe Leu Ser Gly Leu Thr Leu
 660 665 670
 Lys Ala Val Asn Asp Pro Asn Ala Thr Tyr Glu Ala Phe Thr Ala Glu
 675 680 685
 Ile Phe Thr Glu Pro Phe Asn Asn Trp Lys Arg Gln Leu Ala Thr Phe
 690 695 700
 Glu Ser Phe Val Ile Gln Gly Gly Gln Asn Gly Ile Thr Pro Gly Gly
 705 710 715 720
 Gln Gln Gln Leu Leu Gln Ala Met Glu Ser Ser Gln Gln Asp Phe Ser
 725 730 735
 Thr Phe Asn Gln Asn Gln Gln Leu Ala Leu Gln Leu Glu Ser Ser Ala
 740 745 750
 Met Gln Gln Glu Trp Thr Leu Val Ser Ala Ala Leu Ala Leu Leu Asn
 755 760 765
 Gln Met Val Ser Lys Ile Ala Arg Arg Ile Lys Ser
 770 775 780

<210>921

<211>391

<212>PRT

<213>Chlamydia pneumoniae

<400>921

Asn Ile Met His Pro Lys Ile Glu Lys Arg Asn Ser Leu Pro Leu Thr
1 5 10 15
Ala Val Ala Pro Val Phe Glu Glu Ser Tyr His Pro Ser Val Ala Thr
20 25 30
Thr Val Asp Tyr Val Asp Ala Thr Thr Leu Ser Arg His Leu Thr Val
35 40 45
Leu Lys Asp Val Ile Lys Glu Ala Arg Asn Leu Asp Leu Gly Lys Ala
50 55 60
Phe Leu Thr Ser Met Lys Gln Gly Phe Ile Asn Thr Gly Thr Glu Leu
65 70 75 80
Ala Ile Ile Gln Ala Ser Leu Ala Asp Gln Ser Ser Arg Glu Ser Arg
85 90 95
Lys Lys Glu Glu Lys Ile Phe His Gln His Leu Gly Lys Ala Ala Pro
100 105 110
Gln Ala Ala Thr Ala Thr Ser Gly Val Gln Pro Thr Ala Asp Pro Val
115 120 125
Ala Asp Lys Met Pro Leu Gln Ser Ala Phe Ala Tyr Val Leu Leu Asp
130 135 140
Lys Tyr Ile Pro Ala Gln Glu Glu Ala Leu Tyr Ala Leu Gly Arg Glu
145 150 155 160
Leu Asn Leu Ser Gly Tyr Ala Gln Asn Leu Phe Ser Pro Leu Leu Asp
165 170 175
Met Ile Lys Ser Phe Asn Ser Ala Pro Ile Asn Tyr Asn Leu Gly Ser
180 185 190
Tyr Ile Ser Gln Thr Ser Gly Thr Ala Asn Phe Ala Tyr Gly Tyr Glu
195 200 205
Met Ile Leu Ser Arg Tyr Asn Asn Glu Val Ser Gln Cys Arg Leu Asp
210 215 220
Ile Ala Ser Thr Val Lys Ala Lys Ala Ala Leu Ala Asn Met Ser Ala
225 230 235 240
Ser Val Lys Ala Asn Val Ser Leu Thr Asp Ala Gln Lys Lys Gln Ile
245 250 255
Glu Asp Ile Ile Ala Ser Tyr Thr Lys Ser Leu Asp Val Ile His Thr
260 265 270
Gln Leu Thr Asp Val Met Thr Asn Leu Ala Ser Ile Thr Phe Val Pro
275 280 285
Gly Leu Asn Lys Tyr Asp Pro Ser Tyr Arg Ile Val Gly Gly Asp Leu
290 295 300
Ser Ile Ile Ala Leu Gln Asn Asp Glu Lys Val Leu Val Asp Gly Lys
305 310 315 320
Val Asp Ile Thr Thr Ala Val Asn Glu Gly Gly Leu Leu Asn Phe Phe
325 330 335
Thr Thr Val Leu Thr Asp Val Gln Asn Tyr Gly Asp Leu Ala Gln Thr
340 345 350
Gln Gln Leu Met Leu Asp Leu Glu Leu Lys Ala Met Gln Gln Gln Trp
355 360 365
Ser Leu Val Ser Ala Ser Leu Lys Leu Leu Asn Gly Met Tyr Thr Thr
370 375 380
Val Ile Ser Gly Phe Lys Asn
385 390

<210>922

<211>348

<212>PRT

<213>Chlamydia pneumoniae

<400>922

Gly Pro Phe Asp Met Asn Ser Lys Met Leu Lys His Leu Arg Leu Ala
1 5 10 15
Thr Leu Ser Phe Ser Met Phe Phe Gly Ile Val Ser Ser Pro Ala Val
20 25 30
Tyr Ala Leu Gly Ala Gly Asn Pro Ala Ala Pro Val Leu Pro Gly Val
35 40 45
Asn Pro Glu Gln Thr Gly Trp Cys Ala Phe Gln Leu Cys Asn Ser Tyr
50 55 60

Asp Leu Phe Ala Ala Leu Ala Gly Ser Leu Lys Phe Gly Phe Tyr Gly
 65 70 75 80
 Asp Tyr Val Phe Ser Glu Ser Ala His Ile Thr Asn Val Pro Val Ile
 85 90 95
 Thr Ser Val Thr Thr Ser Gly Thr Gly Thr Thr Pro Thr Ile Thr Ser
 100 105 110
 Thr Thr Lys Asn Val Asp Phe Asp Leu Asn Asn Ser Ser Ile Ser Ser
 115 120 125
 Ser Cys Val Phe Ala Thr Ile Ala Leu Gln Glu Thr Ser Pro Ala Ala
 130 135 140
 Ile Pro Leu Leu Asp Ile Ala Phe Thr Ala Arg Val Gly Gly Leu Lys
 145 150 155 160
 Gln Tyr Tyr Arg Leu Pro Leu Asn Ala Tyr Arg Asp Phe Thr Ser Asn
 165 170 175
 Pro Leu Asn Ala Glu Ser Glu Val Thr Asp Gly Leu Ile Glu Val Gln
 180 185 190
 Ser Asp Tyr Gly Ile Val Trp Gly Leu Ser Leu Gln Lys Val Leu Trp
 195 200 205
 Lys Asp Gly Val Ser Phe Val Gly Val Ser Ala Asp Tyr Arg His Gly
 210 215 220
 Ser Ser Pro Ile Asn Tyr Ile Ile Val Tyr Asn Lys Ala Asn Pro Glu
 225 230 235 240
 Ile Tyr Phe Asp Ala Thr Asp Gly Asn Leu Ser Tyr Lys Glu Trp Ser
 245 250 255
 Ala Ser Ile Gly Ile Ser Thr Tyr Leu Asn Asp Tyr Val Leu Pro Tyr
 260 265 270
 Ala Ser Val Ser Ile Gly Asn Thr Ser Arg Lys Ala Pro Ser Asp Ser
 275 280 285
 Phe Thr Glu Leu Glu Lys Gln Phe Thr Asn Phe Lys Phe Lys Ile Arg
 290 295 300
 Lys Ile Thr Asn Phe Asp Arg Val Asn Phe Cys Phe Gly Thr Thr Cys
 305 310 315 320
 Cys Ile Ser Asn Asn Phe Tyr Tyr Ser Val Glu Gly Arg Trp Gly Tyr
 325 330 335
 Gln Arg Ala Ile Asn Ile Thr Ser Gly Leu Gln Phe
 340 345

<210>923

<211>334

<212>PRT

<213>Chlamydia pneumoniae

<400>923

Met Lys Gln His Ile Gly Tyr Leu Gly Met Gly Ile Trp Gly Phe Cys
 1 5 10 15
 Leu Ala Ser Leu Leu Ala Asn Lys Gly Tyr Pro Val Val Ala Trp Ser
 20 25 30
 Arg Asn Pro Asp Leu Ile Lys Gln Leu Gln Glu Arg Arg His Pro
 35 40 45
 Leu Ala Pro Asn Val Val Ile Ser Pro Asn Leu Ser Phe Thr Thr Asp
 50 55 60
 Met Lys Glu Ala Ile His Asn Ala Phe Met Ile Val Glu Gly Val Thr
 65 70 75 80
 Ser Ala Gly Ile Arg Pro Val Ala Glu Gln Leu Lys Gln Ile Thr Asp
 85 90 95
 Leu Ser Val Pro Phe Val Ile Thr Ser Lys Gly Ile Glu Gln Asn Thr
 100 105 110
 Gly Leu Leu Leu Ser Glu Ile Met Leu Glu Val Leu Gly Asp Ser Val
 115 120 125
 Thr Pro Tyr Leu Gly Tyr Leu Ser Gly Pro Ser Ile Ala Lys Glu Val
 130 135 140
 Leu Asn Gly Ser Pro Cys Ser Val Val Val Ser Ala Tyr Asp Ser Gln
 145 150 155 160
 Thr Leu Lys Gln Ile His Glu Ala Phe Ser Leu Pro Thr Phe Arg Val
 165 170 175
 Tyr Pro Asn Thr Asp Ile Lys Gly Ala Ala Leu Gly Gly Ala Leu Lys

Ile Gly Leu Tyr Cys Leu Ser Met Asp Phe Ile Arg His Ala Ala Tyr
 325 330 335
 Gln Gln Leu Pro Leu Tyr Lys Val His Lys His Ala Lys Gln Leu Gly
 340 345 350
 His Thr Ser Leu Asn Glu Lys Asn Ala Trp Lys Phe Glu Glu Phe Ile
 355 360 365
 Phe Asp Leu Phe Cys Tyr Ser Asp His Cys Gln Thr Leu Val Tyr Pro
 370 375 380
 Arg Gln Glu Cys Phe Ala Pro Leu Lys Asn Leu Glu Gly Asn His Ser
 385 390 395 400
 Pro Asp Thr Val Arg Gln Ala Leu Ser Asp Arg Glu Arg Gln Leu Phe
 405 410 415
 His Lys Val Thr Gly Lys Lys Leu Ser Pro Asn Thr Thr Phe Glu Leu
 420 425 430
 Glu Ala Asp Phe Tyr Tyr Pro Ser Thr Ser Thr Ser Leu His Trp Glu
 435 440 445
 Asn Lys Ala Phe Phe Glu Glu Pro Phe Phe Glu Ala Ser
 450 455 460
 <210>925
 <211>433
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>925
 Met Asn His Leu Asn Lys Glu Lys Leu His Ile His Asn Trp Gln Pro
 1 5 10 15
 Tyr Arg Ala Cys Gly Leu Leu Ser Lys Val Ser Gly Asn Leu Ile Glu
 20 25 30
 Val Asp Gly Leu Ser Ala Cys Leu Gly Glu Leu Cys Lys Ile Ser Ser
 35 40 45
 Thr Lys Asp Pro Asn Leu Leu Ala Glu Val Ile Gly Phe His Asn His
 50 55 60
 Thr Thr Leu Leu Met Ser Leu Ser Pro Leu His Ser Val Ala Leu Gly
 65 70 75 80
 Thr Glu Val Leu Pro Leu Arg Arg Pro Pro Ser Leu His Leu Ser Asp
 85 90 95
 His Leu Leu Gly Arg Val Leu Asp Ala Phe Gly Asn Pro Ile Asp Lys
 100 105 110
 Lys Glu Asp Leu Pro Lys Thr His Arg Lys Pro Leu Leu Ser Leu Pro
 115 120 125
 Pro Ser Pro Met Met Arg Gln Pro Ile Asp Gln Ile Phe Pro Thr Gly
 130 135 140
 Ile Lys Ala Ile Asp Ala Phe Leu Thr Leu Gly Lys Gly Gln Arg Ile
 145 150 155 160
 Gly Val Phe Ser Glu Pro Gly Ser Gly Lys Ser Ser Leu Leu Ser Ala
 165 170 175
 Ile Ala Leu Gly Ser Lys Ser Thr Ile Asn Val Ile Ala Leu Ile Gly
 180 185 190
 Glu Arg Gly Arg Glu Val Arg Glu His Ile Glu Lys His Ser Asn Ala
 195 200 205
 Leu Lys Gln Gln Arg Thr Ile Ile Ala Ala Pro Ala His Glu Thr
 210 215 220
 Ala Pro Thr Lys Val Ile Ala Gly Arg Ala Ala Met Thr Ile Ala Glu
 225 230 235 240
 Tyr Phe Arg Glu Gln Gly His Glu Val Leu Phe Ile Met Asp Ser Leu
 245 250 255
 Ser Arg Trp Ile Ala Ala Leu Gln Glu Val Ala Leu Ala Arg Gly Glu
 260 265 270
 Thr Leu Ser Ala His Gln Tyr Ala Ala Ser Val Phe His His Val Ser
 275 280 285
 Glu Phe Thr Glu Arg Ala Gly Asn Asn Asp Lys Gly Ser Ile Thr Ala
 290 295 300
 Leu Tyr Ala Ile Leu Tyr Tyr Pro Lys His Pro Asp Ile Phe Thr Asp
 305 310 315 320
 Tyr Leu Lys Ser Leu Leu Asp Gly His Phe Phe Leu Thr Ser Gln Gly

325 330 335
 Lys Ala Leu Ala Ser Pro Pro Ile Asp Ile Leu Ser Ser Leu Ser Arg
 340 345 350
 Ser Ala Gln Ala Leu Ala Leu Pro His His Tyr Ala Ala Ala Glu Arg
 355 360 365
 Leu Arg Ser Leu Leu Lys Val Tyr Asn Glu Ala Leu Asp Ile Ile His
 370 375 380
 Leu Gly Ala Tyr Thr Pro Gly Gln Asp Glu Glu Leu Asp Lys Ala Val
 385 390 395 400
 Lys Leu Leu Pro Ser Ile Lys Ala Phe Leu Ala Gln Pro Leu Ser Ser
 405 410 415
 Tyr Cys Tyr Leu Asp Asn Thr Leu Lys Gln Leu Glu Ala Leu Ala Asp
 420 425 430
 Ser

<210>926

<211>91

<212>PRT

<213>Chlamydia pneumoniae

<400>926

Met Ile His Ala Val Lys Thr Glu Ser Arg Trp Ser Ser Ser Ser Leu
 1 5 10 15
 Ile Ser Cys Leu Arg Ile Pro Leu Gly Val Ser Ile Leu Asn Pro Asp
 20 25 30
 Arg Leu Gln Glu Val Ser Gly Lys Asn Ser Ala Cys Leu Ile Met Gly
 35 40 45
 Ser Ser Trp Val Glu Ile Gln Ser Val Ser Val Leu Arg Ser Ser Gly
 50 55 60
 Trp Arg Asn Thr Leu Met Gly Val Arg Asp Leu Asn Val Val Cys Leu
 65 70 75 80
 Trp Ser Ala Val Glu Arg Ser Arg Ala Ser Ser
 85 90

<210>927

<211>266

<212>PRT

<213>Chlamydia pneumoniae

<400>927

Met Thr Leu Pro Leu Glu Pro Met Ile Phe Trp Ser Ser Leu Ser Ala
 1 5 10 15
 Lys Val Met Lys Lys Phe Leu Thr Pro His Cys Ala Gly Thr Phe Ser
 20 25 30
 Glu Glu Asp Ala Glu Ala Lys Glu Ala His Leu Val Thr Gly Lys Gln
 35 40 45
 Gly His Arg Leu Met Gly Asn Cys Val Thr Phe Tyr Trp Leu Val Asp
 50 55 60
 Lys Lys Asn Gly Val Ile Leu Asp Ala Lys Phe Gln Tyr Phe Gly His
 65 70 75 80
 Pro Tyr Leu Ile Pro Leu Ala Glu Ala Val Cys Asn Leu Val Cys Gly
 85 90 95
 Lys Ser Tyr Ser Glu Ala Tyr Lys Met Thr Leu Asp Asp Ile Asp Lys
 100 105 110
 Ser Leu Arg Val His Ala His Gln Pro Ala Leu Pro Glu Asp Ser Ile
 115 120 125
 Ser Leu Tyr His Phe Val Ile Asp Ala Leu Asp Thr Ala Val Glu Gln
 130 135 140
 Cys Leu Glu Ile Pro Leu Glu Asp Gly Ser Leu Pro Leu Gln Asn Ser
 145 150 155 160
 Pro Met Asn Leu Asp Phe Glu Asp Ala Asn Pro Tyr Ser Gln Ser Asp
 165 170 175
 Trp Glu Ala Leu Thr His Glu Gln Lys Leu Tyr Ala Leu Arg Ala Thr
 180 185 190
 Ile Ala Glu Lys Ile Gly Pro Tyr Ile Ala Met Asp Gly Gly Glu Val
 195 200 205
 Thr Val Glu Ser Leu Glu Asn Phe Ile Val Thr Ile Ala Tyr Ser Gly

210 215 220
 Asn Cys Ser Gly Cys Pro Ser Ser Leu Gly Ser Thr Leu Asn Ser Ile
 225 230 235 240
 Gly Gln Leu Leu Arg Ala Tyr Ile Tyr Pro Glu Leu Gln Val Lys Val
 245 250 255
 Asp Glu Ser Ser Leu Asn Leu Ser His Pro
 260 265
 <210>928
 <211>401
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>928
 Gly Arg Gly Thr Ile Phe Arg Ile Thr Asp Gly Lys Thr Ser Cys Ile
 1 5 10 15
 Ser Met Glu Lys Pro Gln Asn Arg Lys Ala Pro Arg Ile Phe Trp Leu
 20 25 30
 Asn Asn Gln Val Ala Ile Pro Pro Ser Glu Arg Val Lys Glu Ser Tyr
 35 40 45
 Ala Leu His Ser Asp Ile Phe Ser Leu Pro Pro Gly Ser Ala Leu Lys
 50 55 60
 Leu Ala Glu Lys Thr Glu Glu Ser Ile Arg Gln Leu Val Gly Leu Lys
 65 70 75 80
 Asp Ser His Ile Phe Arg Phe Val Pro His Phe Pro His Val Val His
 85 90 95
 Ile Val Leu Ala Ala Leu Val Glu Asn Leu Ser Met Phe Gln Gly Arg
 100 105 110
 Asn His Ile Ile Leu Pro Ala His Asp Gln Gln Leu Leu Ile Asn Ser
 115 120 125
 Leu Cys Arg His Gln Gly Leu Gly Thr Thr Tyr Asp Trp Val Thr Val
 130 135 140
 Asn His Glu Gly Arg Ile Val Glu Glu Gln Leu Ile Glu Thr Leu Ser
 145 150 155 160
 Pro Arg Ser Leu Leu Phe Ser Leu Ser Ala Ala His Gly Leu Thr Gly
 165 170 175
 Val Ile Gln Pro Leu Asp Pro Leu Leu Ser Leu Cys Lys Asp Arg Arg
 180 185 190
 Ile Leu Leu His Leu Asp Ile Ser Asp Ile Leu Gly Arg Ala Pro Leu
 195 200 205
 Thr Pro Glu Ile Leu Asn Ala Asp Ile Ile Thr Phe Ser Ser Ala Ala
 210 215 220
 Leu Gly Gly Met Gly Ser Ile Gly Gly Ile Phe Ile Arg Lys Ser Leu
 225 230 235 240
 Glu Arg Val Phe Ser Ser Trp Phe Pro Pro His Thr Ser Ala Ser Leu
 245 250 255
 Cys Phe Ser Ala Val Ala Ala Met Gln Thr Ala Cys Glu Glu Arg Ile
 260 265 270
 Ser Ala Leu Pro Leu Phe Thr Phe His Thr Ser Asn Leu Cys Lys Lys
 275 280 285
 Leu Ile Gln Glu Leu Gln Ser Val Leu Pro Ser Ile Gln Leu Ala Phe
 290 295 300
 Ser Glu Val Gln Asn Arg Leu Pro Asn Ile Val Val Ala Ala Ile Pro
 305 310 315 320
 Asp Ile Pro Ala Glu Ser Leu Ala Phe His Leu His Gln Gln Gly Ile
 325 330 335
 Tyr Pro Ser Leu Gly Tyr Glu Arg Phe Gln Pro Leu Ala Gln Val Leu
 340 345 350
 Gln Asn Cys Gly Ile Ser Pro Phe Leu Cys His Ser Ala Leu His Phe
 355 360 365
 Ser Leu Thr Glu Arg Ser Lys Asp Leu Glu Phe Ser Lys Leu Ala Arg
 370 375 380
 Ala Met His Asp Ala Ile Lys His Leu Thr Pro Leu Leu Gly Ser Ser
 385 390 395 400
 Ser

<210>929

<211>228

<212>PRT

<213>Chlamydia pneumoniae

<400>929

Met Ala Leu Leu Ile Leu Leu Arg His Gly Gln Ser Val Trp Asn Glu
1 5 10 15
Lys Asn Leu Phe Ser Gly Trp Val Asp Ile Pro Leu Ser Gln Gln Gly
20 25 30
Ile Glu Glu Ala Phe Ser Ala Gly Arg Ala Ile Gln Asn Leu Pro Ile
35 40 45
Asp Cys Ile Phe Thr Ser Thr Leu Val Arg Ser Leu Met Thr Ala Leu
50 55 60
Leu Ala Met Thr Asn His His Ser Lys Lys Ile Pro Tyr Ile Val His
65 70 75 80
Glu Asp Pro Lys Ala Lys Glu Met Ser Arg Ile Tyr Ser Ala Glu Glu
85 90 95
Glu Asn Asn Met Ile Pro Leu Tyr Gln Ser Ser Ala Leu Asn Glu Arg
100 105 110
Met Tyr Gly Glu Leu Gln Gly Lys Asn Lys Lys Gln Thr Ala Glu Gln
115 120 125
Phe Gly Glu Glu Arg Val Lys Leu Trp Arg Arg Ser Tyr Lys Thr Ala
130 135 140
Pro Pro Gln Gly Glu Ser Leu Tyr Asp Thr Lys Gln Arg Thr Leu Pro
145 150 155 160
Tyr Phe Glu Lys Asn Ile Leu Pro Gln Leu Gln Asn Gly Lys Asn Val
165 170 175
Phe Val Ser Ala His Gly Asn Ser Leu Arg Ser Leu Ile Met Asp Leu
180 185 190
Glu Lys Leu Ser Glu Glu Glu Val Leu Ser Leu Glu Leu Pro Thr Gly
195 200 205
Lys Pro Val Val Tyr Gln Trp Lys Asn His Lys Ile Glu Lys His Pro
210 215 220
Glu Phe Phe Gly
225

<210>930

<211>235

<212>PRT

<213>Chlamydia pneumoniae

<400>930

Val Thr Lys Val Arg Leu Asn Lys Phe Leu Ala Ser Ala Gly Val Ala
1 5 10 15
Ser Arg Arg Lys Cys Asp Glu Ile Ile Phe Ser Gly Ser Val Thr Val
20 25 30
Asn Gly Arg Val Ala Glu Gly Pro Phe Val Leu Val Asp Pro Glu Asp
35 40 45
Lys Val Gln Val Gly Gly Thr Ser Val His Leu Thr Lys Lys Val Tyr
50 55 60
Phe Met Val His Lys Ala Ile Gly Tyr Leu Cys Ser Ser Glu Lys Lys
65 70 75 80
Phe Pro Gly Thr Lys Leu Val Ile Asp Leu Phe Ala His Leu Pro Tyr
85 90 95
Arg Val Phe Thr Val Gly Arg Leu Asp Lys Glu Thr Ser Gly Leu Ile
100 105 110
Leu Val Thr Asn Asp Gly Glu Phe Ala Asn Lys Ile Ile His Pro Ser
115 120 125
Ser Gly Ile Thr Lys Glu Tyr Leu Leu Lys Val Ser Arg Asp Val Ser
130 135 140
Ala Lys Asp Leu Gly Lys Leu Met Glu Gly Thr Phe Ile Asp Gly Lys
145 150 155 160
His Val Arg Pro Val Ser Val Thr Lys Ile Arg Arg Gly Thr Val Lys
165 170 175
Ile Val Val Ser Glu Gly Lys Lys His Glu Ile Arg Leu Phe Ala Asp
180 185 190

Ala Ala Gly Leu Pro Ile Leu Glu Leu Lys Arg Ile Arg Ile Gly Ser
 195 200 205
 Leu Val Leu Gly Gly Leu Arg Tyr Gly Glu Tyr Arg Glu Leu Thr Asp
 210 215 220
 Ala Glu Leu Gly Thr Tyr Met Lys Leu Ser Asp
 225 230 235

<210>931

<211>193

<212>PRT

<213>Chlamydia pneumoniae

<400>931

Asn Met Lys Val Ile Tyr Tyr Glu Ile Glu Glu Ile Pro Ser Thr Asn
 1 5 10 15
 Thr Met Ala Lys Ser Tyr Met His Leu Trp Asp Pro Tyr Ala Leu Thr
 20 25 30
 Val Ile Ser Thr Lys Cys Gln Thr Ala Gly Thr Gly Lys Phe Gly Lys
 35 40 45
 Ser Trp Lys Ser Ser Lys Gly Asp Leu Leu Asn Thr Phe Cys Phe Phe
 50 55 60
 Ile Thr Asp Leu His Ile Asp Val Ser Arg Leu Phe Arg Leu Gly Thr
 65 70 75 80
 Glu Ala Val Val Ala Leu Cys Lys Asp Leu Gly Ile Thr Glu Ala Lys
 85 90 95
 Ile Lys Trp Pro Asn Asp Val Leu Val His Gly Glu Lys Leu Cys Gly
 100 105 110
 Val Leu Pro Glu Thr Leu Pro Val Glu Gly Leu Leu Gly Val Val Leu
 115 120 125
 Gly Ile Gly Leu Asn Gly Asn Thr Thr Lys Gln Ala Leu Lys Asp Val
 130 135 140
 Gly Gln Pro Ala Thr Ser Leu Gln Glu Ile Leu Gly His Pro Ile Asp
 145 150 155 160
 Leu Glu Thr Thr Arg Glu Leu Leu Ile His His Leu Leu Gly Val Leu
 165 170 175
 Gln Glu Asn Leu Pro Asp Ser Leu Ala Thr Lys Ser Asn Arg Gly Asn
 180 185 190
 Ile

<210>932

<211>421

<212>PRT

<213>Chlamydia pneumoniae

<400>932

Cys Ile Arg Ile Pro Gln Met His Ile Gly Phe Cys His Cys Val Arg
 1 5 10 15
 Gly Gly Asn Phe Phe Tyr Phe Val Ile Asn Asn Phe His Ile Leu Glu
 20 25 30
 Ile Tyr Ser Leu Leu Asn Ser Asn Thr Ile Met Arg Tyr His Lys Tyr
 35 40 45
 Phe Arg Tyr Val Asn Ser Trp Val Phe Leu Val Val Leu Thr Leu Met
 50 55 60
 Leu Leu Ser Val Val Val Ile Ser Ser Met Asp Pro Thr Ala Met Leu
 65 70 75 80
 Val Thr Ser Ser Lys Gly Leu Leu Thr Asn Lys Ser Ile Met Gln Leu
 85 90 95
 Arg His Phe Ala Leu Gly Trp Val Val Phe Phe Ile Cys Ala Tyr Phe
 100 105 110
 Asp Tyr His Leu Phe Lys Arg Trp Ala Trp Val Leu Tyr Phe Phe Met
 115 120 125
 Ile Cys Ala Leu Val Gly Leu Phe Phe Val Pro Ser Val Gln Asn Val
 130 135 140
 His Arg Trp Tyr Arg Ile Pro Phe Ile His Met Ser Val Gln Pro Ser
 145 150 155 160
 Glu Tyr Gly Lys Leu Val Ile Val Ile Met Leu Ser Tyr Ile Leu Glu
 165 170 175

Ser Arg Lys Ala Asp Ile Thr Ser Lys Thr Thr Ala Phe Leu Ala Cys
 180 185 190
 Leu Val Val Ala Leu Pro Phe Phe Leu Ile Leu Lys Glu Pro Asp Leu
 195 200 205
 Gly Thr Ala Leu Val Leu Cys Pro Val Thr Leu Thr Ile Phe Tyr Leu
 210 215 220
 Ser Asn Val His Ser Leu Leu Val Lys Phe Cys Thr Val Val Ala Thr
 225 230 235 240
 Ile Gly Ile Ile Gly Ser Leu Leu Ile Phe Ser Gly Ile Val Ser His
 245 250 255
 Gln Lys Val Lys Pro Tyr Ala Leu Lys Val Ile Lys Glu Tyr Gln Tyr
 260 265 270
 Glu Arg Leu Ser Pro Ser Asn His His Gln Arg Ala Ser Leu Ile Ser
 275 280 285
 Ile Gly Leu Gly Gly Ile Arg Gly Arg Gly Trp Lys Thr Gly Glu Phe
 290 295 300
 Ala Gly Arg Gly Trp Leu Pro Tyr Gly Tyr Thr Asp Ser Val Phe Ser
 305 310 315 320
 Ala Leu Gly Glu Glu Phe Gly Leu Leu Gly Leu Leu Phe Thr Leu Gly
 325 330 335
 Leu Phe Tyr Cys Leu Ile Cys Phe Gly Cys Arg Thr Val Ala Val Ala
 340 345 350
 Thr Asp Asp Phe Gly Lys Leu Leu Ala Ala Gly Ile Thr Val Tyr Leu
 355 360 365
 Ala Met His Val Leu Ile Asn Ile Ser Met Met Cys Gly Leu Leu Pro
 370 375 380
 Ile Thr Gly Val Pro Leu Ile Leu Ile Ser Tyr Gly Gly Ser Ser Val
 385 390 395 400
 Ile Ser Thr Met Ala Ser Leu Gly Val Leu Gln Ser Ile Tyr Ser His
 405 410 415
 Arg Phe Ala Lys Tyr
 420

<210>933

<211>392

<212>PRT

<213>Chlamydia pneumoniae

<400>933

Ile Phe Phe Ser Ile Cys Ser Leu Tyr Phe Cys Asn Cys Leu Trp Asn
 1 5 10 15
 Cys Pro Phe Gly Ser Phe Ile Tyr Phe His Ser Ile Val Arg Thr Ser
 20 25 30
 Glu Cys Ile Leu Pro Cys Pro Ser Val Ser Tyr Cys Ser Val Ser Val
 35 40 45
 Cys Phe Asp His Cys Asp Ser Tyr Cys Leu Phe Lys Cys Tyr Gln Cys
 50 55 60
 Leu Cys Glu Thr Trp Gly Ser Xaa Glu Arg Arg Cys Val Leu Asp Arg
 65 70 75 80
 Leu Val Ser Cys Asn Ser Val Val Met Asp Lys Thr Gly Thr Leu Thr
 85 90 95
 Thr Gly Glu Leu Thr Cys Ile Gly Cys Asp Tyr Phe Gly Ser Lys Asn
 100 105 110
 Glu Thr Phe Phe Pro Ser Val Leu Ala Leu Glu Gln Ser Ser Ser His
 115 120 125
 Pro Ile Ala Glu Ala Ile Val Ser Tyr Leu Met Glu Gln Lys Val Ser
 130 135 140
 Ser Leu Pro Ala Asp Arg Tyr Leu Thr Val Pro Gly Glu Gly Val Arg
 145 150 155 160
 Gly Tyr Phe Asn Glu Gln Glu Ala Phe Val Gly Arg Val Glu Thr Gly
 165 170 175
 Leu Gly Lys Val Pro Ser Glu Tyr Leu Glu Asp Ile Glu Gln Lys Ile
 180 185 190
 Tyr Gln Ala Lys Gln His Gly Glu Ile Cys Ser Leu Ala Tyr Val Gly
 195 200 205
 Asn Ser Phe Ala Leu Phe Tyr Phe Arg Asp Ile Pro Arg Pro Gln Ala

210 215 220
 Lys Glu Ile Ile Gln Asp Leu Lys Asp Leu Gly Tyr Pro Val Ser Met
 225 230 235 240
 Leu Thr Gly Asp His Lys Val Ser Ala Glu Asn Thr Ala Glu Ile Leu
 245 250 255
 Gly Ile Ser Glu Val Phe Phe Asp Leu Thr Pro Glu Asp Lys Leu Ala
 260 265 270
 Lys Ile Arg Glu Leu Ala Thr Gln Arg Gln Ile Met Met Val Gly Asp
 275 280 285
 Gly Ile Asn Asp Ala Pro Ala Leu Ala Gln Ala Thr Val Gly Ile Ala
 290 295 300
 Met Gly Glu Ala Gly Ser Ala Thr Ala Ile Glu Ala Ala Asp Ile Val
 305 310 315 320
 Leu Leu His Asp Ser Leu Ser Ser Leu Pro Trp Ile Ile Gln Lys Ala
 325 330 335
 Lys Gln Thr Lys Lys Val Val Ser Gln Asn Leu Ala Leu Ala Leu Ala
 340 345 350
 Ile Ile Leu Leu Val Ser Trp Pro Ala Ser Leu Gly Ile Ile Pro Leu
 355 360 365
 Trp Leu Ala Val Ile Leu His Glu Gly Ser Thr Val Ile Val Gly Leu
 370 375 380
 Asn Ala Leu Arg Leu Leu Lys Ser
 385 390
 <210>934
 <211>373
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>934
 Asn Phe Arg Asn Gly Leu Gly Val Arg Asp Leu His His Phe Arg Glu
 1 5 10 15
 Tyr Tyr Leu Ile Ile Asn Glu Ile Ile Ile Thr Gly Arg Tyr Val Phe
 20 25 30
 Ser Arg Leu Phe Phe Thr Ser Phe Ser Ala Glu Val Val Asn Thr Phe
 35 40 45
 Phe Glu Ser Gly Met Ser Glu Asp Thr Ser Pro Leu Leu Ser Lys Gln
 50 55 60
 Asn Arg Lys Leu Ser His Asn Leu Pro Leu Lys Ser Ala Tyr Leu Ser
 65 70 75 80
 Leu Gly Thr Tyr Leu Ile Ala Leu Leu Ser Phe Trp Leu His Ala Lys
 85 90 95
 Asn Leu Ser Asn Leu Phe Val Val Phe Thr Phe Phe Leu Ala Gly Thr
 100 105 110
 Pro Ala Leu Ile Lys Ser Leu Val Asn Ile Cys Gln Lys Val Val Asn
 115 120 125
 Ile Asp Ile Leu Met Thr Ser Ala Pro Phe Gly Ser Ile Phe Ile Gly
 130 135 140
 Gly Ala Leu Glu Gly Ala Leu Leu Leu Val Leu Phe Ala Ile Ser Glu
 145 150 155 160
 Ala Leu Gly Gln Met Val Ser Gly Lys Ala Lys Ser Thr Leu Val Ser
 165 170 175
 Leu Lys Gln Leu Ala Pro Thr Thr Gly Trp Leu Val Leu Glu Asp Gly
 180 185 190
 Asn Leu Gln Lys Val Ala Ile Asn Lys Ile Glu Val Gly Asn Ile Leu
 195 200 205
 Arg Ile Lys Ser Gly Glu Val Val Pro Leu Asp Gly Glu Ile Leu His
 210 215 220
 Gly Ser Ser Ser Ile Asn Leu Met His Leu Thr Gly Glu Lys Val Pro
 225 230 235 240
 Lys Ser Cys His Pro Gly Ser Ile Val Pro Ala Gly Ala His Asn Met
 245 250 255
 Glu Gly Ser Phe Asp Leu Arg Val Leu Arg Thr Gly Ser Asp Ser Thr
 260 265 270
 Ile Ala His Ile Ile Asn Leu Val Ile Gln Ala Gln Asn Ser Lys Pro
 275 280 285

Arg Leu Gln Gln Arg Leu Asp Lys Tyr Ser Ser Val Tyr Ala Leu Ser
 290 295 300
 Ile Phe Ala Ile Ala Cys Gly Ile Ala Leu Leu Val Pro Leu Phe Thr
 305 310 315 320
 Ser Ile Pro Leu Leu Gly Pro Gln Ser Ala Phe Tyr Arg Ala Leu Ala
 325 330 335
 Phe Leu Ile Ala Ala Ser Pro Cys Ala Leu Ile Ile Ala Ile Pro Ile
 340 345 350
 Ala Tyr Leu Ser Ala Ile Asn Ala Cys Ala Lys His Gly Val Leu Xaa
 355 360 365
 Lys Gly Gly Val Phe
 370

<210>935

<211>274

<212>PRT

<213>Chlamydia pneumoniae

<400>935

Glu Gly Trp Arg Phe Phe Phe Pro Lys Thr Ser Glu Asn Thr Ser Asp
 1 5 10 15
 Cys Arg Gln His Gln Ile Leu Arg Lys Ile Met Thr Gln Asp Pro His
 20 25 30
 Asp His Phe Lys Ser Arg Thr Pro Glu Asp His Ile Lys His Val Arg
 35 40 45
 Asp Lys His Arg Val Cys Lys Gly Glu Pro His Thr Thr Phe Lys Gly
 50 55 60
 Phe Phe Tyr His Leu Ala Asn Asn Ala Leu Ser Thr Gly Val Phe Ile
 65 70 75 80
 Phe Phe Ile Arg Thr Leu Phe Phe Leu Ile Pro Thr Asn Arg Ala Leu
 85 90 95
 Gln Val Lys Ser Leu Ile Ser Leu Gly Val Gly Trp Thr Phe Tyr His
 100 105 110
 Gly Cys Leu Lys Ala Arg Lys Ala Trp Ala Tyr Met Glu Leu Ser His
 115 120 125
 Arg Ser Met Leu Glu Glu Lys Asn Glu Ile Glu Glu Asn Phe Glu Gln
 130 135 140
 Glu Lys Ile Glu Leu Arg Ile Leu Phe Glu Asn Gln Gly Phe Lys Asp
 145 150 155 160
 Pro Leu Leu Gln Glu Met Val Glu Tyr Val Cys Ser Asp Ser Thr Leu
 165 170 175
 Leu Leu Asp Thr Met Ile Arg Glu Glu Leu Tyr Ile Arg Lys Glu Asp
 180 185 190
 Leu Pro His Pro Leu Ile Gln Gly Gly Ser Arg Ile Leu Gly Gly Leu
 195 200 205
 Cys Gly Leu Ala Ile Phe Leu Pro Leu Val Leu Cys Ile Ser Tyr Thr
 210 215 220
 Leu Ala Gly Val Phe Ser Ala Leu Met Val Leu Val Leu Ser Phe Leu
 225 230 235 240
 Lys Ala Lys Ile Leu Lys Asn Asp Lys Ile Ser Glu Met Val Trp Val
 245 250 255
 Leu Gly Ile Phe Ile Thr Ser Ala Ser Ile Ile Ser Ser Leu Met Lys
 260 265 270
 Leu Leu

<210>936

<211>466

<212>PRT

<213>Chlamydia pneumoniae

<400>936

Val Ile Leu Pro Phe Ser Pro Ile Ser Ile Ala Arg Arg Ile Lys Lys
 1 5 10 15
 Ser Cys Cys Ser Glu Lys Ser Ser Ile Tyr Ser His Phe Cys Thr Leu
 20 25 30
 Leu Leu Asn Asn Glu Thr Ser Met Leu Asp Ile Lys Ile Ile Arg Lys
 35 40 45

Thr Pro Glu Glu Cys Glu Thr Arg Leu Arg Lys Lys Asp Pro Lys Ile
 50 55 60
 Ser Leu Glu Pro Val Leu Ser Leu Asp Lys Glu Val Arg Gln Leu Lys
 65 70 75 80
 Thr Asp Ser Glu Thr Leu Gln Ala Gln Arg Arg Leu Leu Ser Gln Asp
 85 90 95
 Ile His Lys Ala Lys Thr Gln Gly Val Asp Ala Thr Asn Leu Ile Gln
 100 105 110
 Glu Val Glu Thr Leu Ala Ala Asp Leu Glu Lys Ile Glu Gln His Leu
 115 120 125
 Asp Gln Lys Asn Ala Gln Leu His Glu Leu Leu Ser His Leu Pro Asn
 130 135 140
 Tyr Pro Ala Asp Asp Ile Pro Val Ser Glu Asp Lys Ala Gly Asn Gln
 145 150 155 160
 Val Ile Lys Ser Val Gly Asp Leu Pro Ile Phe Ser Phe Pro Pro Lys
 165 170 175
 His His Leu Glu Leu Asn Gln Glu Leu Asp Ile Leu Asp Phe Gln Ala
 180 185 190
 Ala Ala Lys Thr Thr Gly Ser Gly Trp Pro Ala Tyr Lys Asn Arg Gly
 195 200 205
 Val Leu Leu Glu Trp Ala Leu Leu Thr Tyr Met Leu Gln Lys Gln Ala
 210 215 220
 Ala His Gly Phe Gln Leu Trp Leu Pro Pro Leu Leu Val Lys Lys Glu
 225 230 235 240
 Ile Leu Phe Gly Ser Gly Gln Ile Pro Lys Phe Asp Gly Gln Tyr Tyr
 245 250 255
 Arg Val Glu Asp Gly Glu Gln Tyr Leu Tyr Leu Ile Pro Thr Ala Glu
 260 265 270
 Val Val Leu Asn Gly Phe Arg Ser Gln Asp Ile Leu Thr Glu Lys Glu
 275 280 285
 Leu Pro Leu Tyr Tyr Ala Ala Cys Thr Pro Cys Phe Arg Arg Glu Ala
 290 295 300
 Gly Ala Ala Gly Ala Gln Glu Arg Gly Leu Val Arg Val His Gln Phe
 305 310 315 320
 His Lys Val Glu Met Phe Ala Phe Thr Thr Pro Asn Gln Asp Asp Ile
 325 330 335
 Ala Tyr Glu Lys Met Leu Ser Ile Val Glu Glu Met Leu Thr Glu Leu
 340 345 350
 Lys Leu Pro Tyr Arg Leu Ser Leu Leu Ser Thr Gly Asp Met Ser Phe
 355 360 365
 Thr Xaa Ser Lys Thr Ile Asp Ala Glu Val Trp Leu Pro Gly Gln Lys
 370 375 380
 Ala Phe Tyr Glu Val Ser Ser Ile Ser Gln Cys Thr Asp Phe Gln Ser
 385 390 395 400
 Arg Arg Ser Gly Thr Arg Tyr Lys Asp Ser Gln Gly Lys Leu Gln Phe
 405 410 415
 Val His Thr Leu Asn Gly Ser Gly Leu Ala Thr Pro Arg Leu Leu Val
 420 425 430
 Ala Ile Leu Glu Asn Asn Gln Gln Ala Asp Gly Ser Val Ile Pro
 435 440 445
 Glu Val Leu Arg Pro Tyr Leu Gly Gly Leu Glu Ile Leu Leu Pro Lys
 450 455 460
 Asp Gln
 465
 <210>937
 <211>376
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>937
 Met Glu Asp Phe Ser Glu Gln Gln Leu Phe Phe Met Arg Arg Ala Ile
 1 5 10 15
 Glu Ile Gly Glu Lys Gly Arg Ile Thr Ala Pro Pro Asn Pro Trp Val
 20 25 30
 Gly Cys Val Val Val Gln Glu Asn Arg Ile Ile Gly Glu Gly Phe His

Glu Asp Phe Ile Ser Pro Gly His Phe Phe Pro Leu Ala Ser Ser Pro
 130 135 140
 Gly Gly Val Leu Lys Arg Ala Gly His Thr Glu Ser Thr Val Asp Leu
 145 150 155 160
 Met Glu Leu Ala Gly Leu Gln Pro Cys Gly Val Leu Ala Glu Leu Val
 165 170 175
 Asn Glu Asp Tyr Ser Met Met Arg Leu Pro Gln Ile Leu Glu Phe Ala
 180 185 190
 Arg Lys His Asn Ile Ala Val Ile Pro Val Thr Ser Ile Ile Ala His
 195 200 205
 Arg Met Leu Ser Asp Arg Leu Val Ser Lys Ile Ser Ser Ala Arg Leu
 210 215 220
 Pro Thr Ile Tyr Gly Asp Phe Thr Ile His Val Tyr Glu Ser Leu Leu
 225 230 235 240
 Glu Gly Met Gln His Leu Ala Leu Val Lys Gly Asn Val Ala Gly Lys
 245 250 255
 Ser Asn Val Leu Val Arg Val His Ser Glu Cys Val Thr Gly Asp Ile
 260 265 270
 Leu Gly Ser Lys Arg Cys Asp Cys Gly Glu Gln Leu Ser Ser Ala Met
 275 280 285
 Ser Tyr Ile Ala Glu Lys Gly Thr Gly Val Leu Val Tyr Leu Arg Gly
 290 295 300
 Gln Glu Gly Arg Gly Ile Gly Leu Gly His Lys Val Arg Ala Tyr Ala
 305 310 315 320
 Leu Gln Asp Asn Gly Tyr Asp Thr Val Asp Ala Asn Leu Ala Met Gly
 325 330 335
 Phe Pro Val Asp Ser Arg Glu Tyr Gly Ile Gly Ala Gln Ile Xaa Ile
 340 345 350
 Asp Leu Xaa Leu Thr Thr Ile Lys Leu Ile Thr His Asn Pro Gln Lys
 355 360 365
 Tyr Phe Gly Leu Gln Gly Phe Gly Leu Ser Ile Thr Glu Arg Val Pro
 370 375 380
 Leu Pro Val Arg Ile Ser Glu Asp Asn Glu Gln Tyr Leu Arg Thr Lys
 385 390 395 400
 Gln Glu Arg Met Gly His Trp Leu Asp Leu Pro Cys Cys Asn Asn Arg
 405 410 415
 Val Gln

<210>939

<211>154

<212>PRT

<213>Chlamydia pneumoniae

<400>939

Met Lys Thr Leu Lys Gly His Leu Ser Ala Lys Asn Leu Arg Ile Ala
 1 5 10 15
 Ile Val Gly Ser Cys Phe Asn Gln Ala Met Ala Asp Ala Leu Val Ser
 20 25 30
 Gly Thr Gln Gln Thr Phe Leu Lys Phe Gly Gly Ser Glu Asp Gly Leu
 35 40 45
 Met Thr Ile Arg Val Pro Gly Ala Phe Glu Ile Pro Cys Thr Ile Lys
 50 55 60
 Lys Leu Leu Ser Ser Glu Arg Lys Phe Asp Ala Ile Val Ala Cys Gly
 65 70 75 80
 Val Leu Ile Gln Gly Glu Thr Asp His Tyr Asn Gln Ile Val Asn Gln
 85 90 95
 Val Ala Ala Gly Ile Gly Ala Leu Ser Leu Glu Phe Cys Leu Pro Ile
 100 105 110
 Thr Leu Ser Ile Val Ala Ala Pro Ser Ala Glu Ile Ala Trp Gln Arg
 115 120 125
 Ser Gly Ile Lys Gly Arg His Leu Gly Val Ser Gly Met Thr Thr Ala
 130 135 140
 Ile Glu Met Ala Thr Leu Phe Thr Gln Ile
 145 150

<210>940

<211>472

<212>PRT

<213>Chlamydia pneumoniae

<400>940

Leu Ile Ser Leu Asn Leu Lys Ile Leu Thr Lys Gln Arg Asp Arg Glu
1 5 10 15
Glu Ala Ser Met Leu Lys Ile Leu Lys Ile Lys Val Leu Val Phe Pro
20 25 30
Leu Ala Leu Leu Met Gly Cys Asn Ser Ile Gly Tyr Ala Gly Pro Gln
35 40 45
Gly Ser Leu Gln Thr Asn Ser Gln Thr Lys Val Lys Ile Gly Ser Glu
50 55 60
Val Trp Ile Glu Gln Lys Leu Arg Gln Tyr Pro Glu Leu Leu Trp Leu
65 70 75 80
Thr Glu Ser Gly Gly Ala Pro Leu Leu Thr Ser Thr Pro Ile Asp Met
85 90 95
Ala Tyr Ser Glu Lys Leu Phe Asn Lys Lys Val Pro Ala Leu Asp Ile
100 105 110
Ala Ile Arg Ser Met Ile His Leu His Leu Leu Ile Gln Gly Ser Arg
115 120 125
Gln Ser Tyr Met Gln Leu Ser Gln Ile Leu Pro Ser Glu Glu Gly Gly
130 135 140
Met Thr Phe Lys Gln Phe Gln Thr Ala His Lys Gln Leu Leu Phe Phe
145 150 155 160
Leu Asn Ser Pro Lys Ser Phe Asp Asn Thr Leu Arg Ile Leu Glu Thr
165 170 175
Ala Ile Val Leu Arg His Val Gly Cys Ser Ala Lys Ala Val Thr Thr
180 185 190
Phe Lys Pro Tyr Phe Thr Asp Ser Cys Pro Gln Ser Phe Tyr Ala Lys
195 200 205
Ala Leu His Val Leu Arg Thr Phe Pro Glu Leu Cys Pro Ser Tyr Ala
210 215 220
Arg Leu Ser Pro Glu Gln Gln Glu Val Leu Leu Ser Leu Arg Arg Leu
225 230 235 240
Gly Asn Tyr Asp Ser Leu Leu Asn Leu Thr Glu Val Pro Ser Ala Gln
245 250 255
Leu Leu Ser Ala Trp Arg Thr Arg Arg Ser Leu Ala Ile Leu Asp Leu
260 265 270
Tyr Leu Tyr Cys Leu Asp Thr Cys Gly Asp Lys Asn Cys Ser Gln Glu
275 280 285
Phe Tyr Ile Asn Phe Ala Pro Leu Leu Ser Met Leu Gln Gln His Ala
290 295 300
Thr Ile Glu Glu Ala Phe Ser Arg Tyr Phe Thr Tyr Arg Ala Asn Arg
305 310 315 320
Leu Gly Phe Glu Gly Thr Ser Arg Thr Asp Met Thr Leu Val Arg Leu
325 330 335
Ala Thr Leu Met Asn Leu Ser Pro Ser Glu Ala Ser Thr Leu Ala Trp
340 345 350
Ser Phe Lys Asn Leu Pro Ser Asp Glu Ala Glu Asn Leu Val Asn Ser
355 360 365
Phe Tyr Thr Val Gln Gly Glu His Ile Pro Leu Thr Phe Arg Gly Leu
370 375 380
Pro Ser Leu Val Ala Gly Leu Ser Val Ala Thr His Gly Ser Thr Val
385 390 395 400
Ser Pro Glu Asn Arg Leu Arg Gln Leu Tyr Ser Thr Met Leu Ser Leu
405 410 415
Leu Val Lys Ser Leu Arg Ser His Arg Glu Met Leu Asn Lys Gln Leu
420 425 430
Leu Pro Gln Gly Thr Val Leu Asp Phe Ser Glu Thr Thr Leu Ser Ser
435 440 445
Gly Gly Leu Asp Val Phe Ala Glu Ser Ile Ala Val Arg Ile His Leu
450 455 460
Asn Gly Ala Val Ser Ile Asn Leu
465 470

WO 99/27105

<210>941

<211>220

<212>PRT

<213>Chlamydia pneumoniae

<400>941

Leu Lys Ile Met Lys Arg Val Ile Tyr Lys Thr Ile Phe Cys Gly Leu
 1 5 10 15
 Thr Leu Leu Thr Ser Leu Ser Ser Cys Ser Leu Asp Pro Lys Gly Tyr
 20 25 30
 Asn Leu Glu Thr Lys Asn Ser Arg Asp Leu Asn Gln Glu Ser Val Ile
 35 40 45
 Leu Lys Glu Asn Arg Glu Thr Pro Ser Leu Val Lys Arg Leu Ser Arg
 50 55 60
 Arg Ser Arg Arg Leu Phe Ala Arg Arg Asp Gln Thr Gln Lys Asp Thr
 65 70 75 80
 Leu Gln Val Gln Ala Asn Phe Lys Thr Tyr Ala Glu Lys Ile Ser Glu
 85 90 95
 Gln Asp Glu Arg Asp Leu Ser Phe Val Val Ser Ser Ala Ala Glu Lys
 100 105 110
 Ser Ser Ile Ser Leu Ala Leu Ser Gln Gly Glu Ile Lys Asp Ala Leu
 115 120 125
 Tyr Arg Ile Arg Glu Val His Pro Leu Ala Leu Ile Glu Ala Leu Ala
 130 135 140
 Glu Asn Pro Ala Leu Ile Glu Gly Met Lys Lys Met Gln Gly Arg Asp
 145 150 155 160
 Trp Ile Trp Asn Leu Phe Leu Thr Gln Leu Ser Glu Val Phe Ser Gln
 165 170 175
 Ala Trp Ser Gln Gly Val Ile Ser Glu Glu Asp Ile Ala Ala Phe Ala
 180 185 190
 Ser Thr Leu Gly Leu Asp Ser Gly Thr Val Ala Ser Ile Val Gln Gly
 195 200 205
 Glu Arg Trp Pro Glu Leu Val Asp Ile Val Ile Thr
 210 215 220

<210>942

<211>385

<212>PRT

<213>Chlamydia pneumoniae

<400>942

Gln Glu Ile Leu Ala Arg Glu Ile Ser Pro Glu Cys Cys Arg Leu Ser
 1 5 10 15
 Leu Trp Arg Ser Arg Arg Pro Gly Leu Gly Leu Leu Ala Ala Leu Leu
 20 25 30
 Gly Ala Ile Val Gln Tyr Ala Gly Ser Tyr Leu Gly Ser Lys Tyr Arg
 35 40 45
 Lys Pro Glu Gly Asn Thr Gly Glu Phe Ile Gly Gly Pro Ile Ala Cys
 50 55 60
 Leu Ala Phe Gly Met Arg Lys Lys Ile Leu Ala Gly Phe Phe Ala Leu
 65 70 75 80
 Phe Thr Ile Met Thr Ala Phe Cys Ala Gly Asn Cys Val Gln Val Ser
 85 90 95
 Cys Ile Val Pro Leu Cys Ala Glu Gly Thr Pro Gly Lys Leu Leu Val
 100 105 110
 Gly Ile Leu Leu Ala Leu Val Val Ile Pro Val Leu Ala Gly Gly Asn
 115 120 125
 Asn Arg Ile Leu Arg Phe Ser Ala Arg Val Ile Pro Phe Ile Ala Gly
 130 135 140
 Phe Tyr Cys Ile Ser Cys Gly Ile Ile Leu Phe Gln His Ala Ser Ala
 145 150 155 160
 Ile Leu Pro Ala Ile Lys Leu Ile Cys Ser Ser Ala Phe Gly Ile Lys
 165 170 175
 Ala Gly Leu Ala Gly Ile Gly Gly Tyr Thr Leu Ser Gln Val Ile Ser
 180 185 190
 Thr Gly Ile Asn Arg Ala Val Met Ala Thr Asp Cys Gly Ser Gly Met
 195 200 205

Val	Ser	Ile	Leu	Gln	Ala	Asn	Thr	Lys	Ser	Lys	Asn	Pro	Val	Val	Asp
210						215					220				
Gly	Leu	Val	Thr	Leu	Val	Pro	Pro	Val	Ile	Val	Met	Val	Val	Cys	Ser
225					230					235					240
Ile	Thr	Met	Leu	Val	Leu	Ile	Val	Ser	Gly	Ala	Tyr	Ser	Ser	Gly	Ala
				245					250					255	
Gln	Gly	Thr	Leu	Met	Val	Met	Ser	Ala	Phe	Lys	Asn	Ser	Leu	Gly	Ser
			260				265						270		
Leu	Gly	Ser	Val	Ile	Val	Ile	Leu	Ala	Met	Ala	Leu	Phe	Gly	Tyr	Thr
		275					280					285			
Thr	Ile	Leu	Thr	Trp	Phe	Ala	Cys	Ala	Glu	Lys	Ser	Leu	Gln	Tyr	Met
290						295					300				
Ile	Pro	Gly	Arg	Arg	Ala	Asn	Leu	Trp	Leu	Lys	Ala	Ile	Tyr	Val	Leu
305					310					315					320
Ile	Ile	Pro	Leu	Gly	Gly	Val	Ile	Asp	Met	Arg	Met	Ile	Trp	Ala	Leu
				325				330						335	
Ser	Asp	Thr	Gly	Phe	Ser	Gly	Met	Val	Ile	Leu	Asn	Cys	Ile	Ala	Leu
			340				345						350		
Ile	Ala	Leu	Leu	Lys	Asp	Val	Leu	Ser	Thr	Asn	Arg	Asp	Val	Ala	Leu
		355				360						365			
Leu	Lys	Glu	Arg	Glu	Cys	Ser	Val	Ala	Asp	Pro	Val	Arg	Asn	Leu	Asp
370						375					380				

Ala
385

<210>943

<211>110

<212>PRT

<213>Chlamydia pneumoniae

<400>943

Arg	Arg	Arg	Ile	Met	Gln	Leu	Leu	Ser	Pro	Ala	Phe	Ala	Tyr	Gly	Ala
1				5					10					15	
Pro	Ile	Pro	Lys	Lys	Tyr	Thr	Cys	Gln	Gly	Ala	Gly	Ile	Ser	Pro	Pro
			20					25					30		
Leu	Thr	Phe	Val	Asp	Val	Pro	Gly	Ala	Ala	Gln	Ser	Leu	Ala	Leu	Ile
		35					40					45			
Val	Glu	Asp	Pro	Asp	Val	Pro	Lys	Glu	Ile	Arg	Ser	Asp	Gly	Leu	Trp
		50				55					60				
Ile	His	Trp	Ile	Val	Tyr	Asn	Leu	Ser	Thr	Thr	Ile	Thr	Asn	Leu	Ala
65					70					75					80
Glu	Gly	Ala	Glu	Ile	Phe	Ala	Val	Gln	Gly	Leu	Asn	Thr	Ser	Gly	Lys
				85					90					95	
Pro	Val	Tyr	Glu	Gly	Pro	Cys	Pro	Pro	Asp	Lys	Gln	His	Arg		
			100					105					110		

<210>944

<211>223

<212>PRT

<213>Chlamydia pneumoniae

<400>944

Gly	Cys	Met	Ser	Thr	Val	Thr	Thr	Glu	Pro	Cys	Ser	Ser	Ile	His	Ile
1				5					10					15	
Ser	Leu	Asn	Asn	Asp	Trp	Arg	Asp	Ser	Gln	Pro	Tyr	Ser	Leu	Asp	Arg
			20					25					30		
Ala	Ser	Glu	Leu	Leu	His	Phe	Arg	Phe	Leu	Pro	Ser	Leu	Val	Phe	Ser
		35					40					45			
Asn	Trp	Lys	Val	Glu	Gln	Gln	Ile	Glu	Thr	Leu	Cys	His	Lys	Ser	Glu
		50				55					60				
Lys	Arg	Arg	Leu	Ile	Ser	Pro	Leu	Ala	Lys	Trp	Leu	Gly	Lys	Leu	His
65					70					75					80
Lys	Gln	Asp	Leu	Leu	Cys	Pro	Pro	Ala	Pro	Pro	Val	Ser	Val	Cys	Trp
				85					90					95	
Ile	Asn	Ala	His	Val	Gly	Tyr	Gly	Val	Phe	Ala	Arg	Asp	Glu	Ile	Ala
			100					105					110		
Pro	Trp	Thr	Tyr	Ile	Gly	Glu	Tyr	Thr	Gly	Ile	Leu	Arg	His	Arg	Gln
			115				120						125		

Ala Ile Trp Met Asp Glu Asn Asp Tyr Cys Phe Arg Tyr Pro Met Pro
 130 135 140
 Leu Phe Thr Leu Arg Tyr Phe Thr Ile Asp Ser Gly Lys Gln Gly Asn
 145 150 155 160
 Val Thr Arg Phe Ile Asn His Ser Glu Gln Pro Asn Ala Glu Ala Ile
 165 170 175
 Gly Val Phe Ser Glu Gly Leu Phe His Val Ile Ile Arg Thr Ile Ala
 180 185 190
 Pro Ile Tyr Ala Gly Gln Glu Ile Cys Tyr His Tyr Gly Pro Leu Tyr
 195 200 205
 Trp Lys His Arg Lys Lys Arg Glu Glu Phe Ile Pro Glu Glu Glu
 210 215 220

<210>945

<211>265

<212>PRT

<213>Chlamydia pneumoniae

<400>945

Met Gln Gly Phe Phe Pro Leu Ala Ser Gly Ser Lys Gly Asn Ser Ala
 1 5 10 15
 Tyr Leu Gly Thr Asp Ser Cys Lys Ile Leu Ile Asp Leu Gly Val Ser
 20 25 30
 Lys Gln Val Val Thr Arg Glu Leu Leu Ser Met Asn Ile Asp Pro Glu
 35 40 45
 Asp Ile Gln Ala Ile Phe Val Thr His Glu His Ser Asp His Ile Ser
 50 55 60
 Gly Ile Lys Ser Phe Val Lys Ala Tyr Asn Thr Pro Ile Val Cys Asn
 65 70 75 80
 Leu Glu Thr Ala Arg Ala Leu Cys His Leu Leu Asp Ser His Pro Glu
 85 90 95
 Phe Lys Ile Phe Ser Thr Gly Ser Ser Phe Cys Phe Gln Asp Leu Glu
 100 105 110
 Val Gln Thr Phe Asn Val Pro His Asp Ala Val Asp Pro Val Ala Phe
 115 120 125
 Ile Phe His Tyr Arg Glu Glu Lys Leu Gly Phe Cys Thr Asp Leu Gly
 130 135 140
 Trp Val Thr Ser Trp Ile Thr His Glu Leu Tyr Asp Cys Asp Tyr Leu
 145 150 155 160
 Leu Ile Glu Ser Asn His Ser Pro Glu Leu Val Arg Gln Ser Gln Arg
 165 170 175
 Pro Asp Val Tyr Lys Lys Arg Val Leu Ser Lys Leu Gly His Ile Ser
 180 185 190
 Asn Gln Glu Cys Gly Gln Leu Leu Gln Lys Ile Ile Thr Pro Lys Leu
 195 200 205
 Lys Lys Leu Tyr Leu Ala His Leu Ser Thr Glu Cys Asn Thr Ala Glu
 210 215 220
 Leu Ala Leu Ser Thr Val Ser Glu Ser Ile Ala Ser Ile Thr Ser Ile
 225 230 235 240
 Ala Pro Glu Ile Ala Leu Ala Gln Gly Ile Thr Ser Pro Ile Tyr Phe
 245 250 255
 Ser Arg Leu Glu Val Ala Cys Pro Arg
 260 265

<210>946

<211>553

<212>PRT

<213>Chlamydia pneumoniae

<400>946

Asp Gly Ser Ile Ser Pro Leu Pro Gln Glu Glu Ile Pro Gly Ser Lys
 1 5 10 15
 Lys Glu Ser Phe Phe Leu Thr Pro His Pro Cys Lys Arg Phe Leu Thr
 20 25 30
 Lys Phe Val Glu Pro Gln Glu Asn Lys Ala Lys Glu Gly Lys Thr Ile
 35 40 45
 Ala Leu Ser Ser Thr Pro Thr Val Val Arg Glu Ser Lys Gly Lys Glu
 50 55 60

Arg Ala Ala Leu Pro Lys Leu Lys Ser Leu Ala Val Pro Glu Asn Asp
 65 70 75 80
 Leu Pro Gln Tyr His Leu Leu Ser Lys Asn Arg Glu Ala Arg Pro Glu
 85 90 95
 Ser Leu Gln Ala Glu Leu Glu Arg Lys Ala Leu Ile Leu Lys Gln Thr
 100 105 110
 Leu Thr Ser Phe Gly Ile Asp Ala Asp Leu Gly Asn Ile Cys Ser Gly
 115 120 125
 Pro Thr Leu Ala Ala Phe Glu Val Leu Pro His Ser Gly Val Lys Val
 130 135 140
 Gln Lys Ile Lys Ser Leu Glu Asn Asp Ile Ala Leu Lys Leu Gln Ala
 145 150 155 160
 Ser Ser Ile Arg Ile Ile Ala Pro Ile Pro Gly Lys Ala Ala Val Gly
 165 170 175
 Ile Glu Ile Pro Thr Pro Phe Pro Gln Ala Val Asn Phe Arg Asp Leu
 180 185 190
 Leu Glu Asp Tyr Gln Lys Thr Asn Arg Lys Leu Gln Ile Pro Leu Leu
 195 200 205
 Leu Gly Lys Lys Ala Asn Gly Asp Asn Leu Trp Ala Asp Leu Ala Thr
 210 215 220
 Met Pro His Leu Ile Ile Ala Gly Thr Thr Gly Ser Gly Lys Ser Val
 225 230 235 240
 Cys Ile Asn Thr Ile Val Met Ser Met Ile Met Thr Thr Leu Pro Ser
 245 250 255
 Glu Ile Lys Leu Val Ile Ile Asp Pro Lys Lys Val Glu Leu Thr Gly
 260 265 270
 Tyr Ser Gln Leu Pro His Met Leu Ser Pro Val Ile Thr Glu Ser Arg
 275 280 285
 Glu Val Tyr Asn Ala Leu Val Trp Leu Val Lys Glu Met Glu Ser Arg
 290 295 300
 Tyr Glu Ile Leu Arg Tyr Leu Gly Leu Arg Asn Ile Gln Ala Phe Asn
 305 310 315 320
 Ser Arg Thr Arg Asn Lys Thr Ile Glu Ala Ser Tyr Asp Arg Glu Ile
 325 330 335
 Arg Glu Thr Met Pro Phe Met Val Gly Ile Ile Asp Glu Leu Ser Asp
 340 345 350
 Leu Leu Leu Ser Ser Ser Gln Asp Ile Glu Thr Pro Ile Ile Arg Leu
 355 360 365
 Ala Gln Met Ala Arg Ala Val Gly Ile His Leu Ile Leu Ala Thr Gln
 370 375 380
 Arg Pro Ser Arg Glu Val Ile Thr Gly Leu Ile Lys Ala Asn Phe Pro
 385 390 395 400
 Ser Arg Ile Ser Phe Lys Val Ser Asn Lys Val Asn Ser Gln Ile Ile
 405 410 415
 Ile Asp Glu Pro Gly Ala Glu Asn Leu Met Gly Asn Gly Asp Met Leu
 420 425 430
 Val Leu Leu Pro Ser Val Phe Gly Thr Ile Arg Ala Gln Gly Ala Tyr
 435 440 445
 Ile Cys Asp Glu Asp Ile Asn Lys Val Ile Gln Asp Leu Cys Ser Arg
 450 455 460
 Phe Pro Thr Gln Tyr Val Ile Pro Ser Phe His Ala Phe Asp Asp Ser
 465 470 475 480
 Asp Ser Asp Asn Ser Gly Glu Lys Asp Pro Leu Phe Ala Gln Ala Lys
 485 490 495
 Thr Leu Ile Leu Gln Thr Gly Asn Ala Ser Thr Thr Phe Leu Gln Arg
 500 505 510
 Lys Leu Lys Ile Gly Tyr Ala Arg Ala Ala Ser Leu Ile Asp Gln Leu
 515 520 525
 Glu Glu Ala Arg Ile Ile Gly Pro Ser Glu Gly Ala Lys Pro Arg Gln
 530 535 540
 Ile Leu Ile Gln Asn Pro Leu Glu Gly
 545 550
 <210>947
 <211>218

WO 99/27105

<212>PRT

<213>Chlamydia pneumoniae

<400>947

Pro Met Ile Arg Glu Arg Lys Lys Ser Arg His Pro Arg Leu Pro Thr
 1 5 10 15
 Leu Pro Leu Ala Ala Lys Ala Ser Leu Tyr Leu Phe Phe Ala Cys Phe
 20 25 30
 Ser Gly Leu Ser Leu Trp Ser Phe His Arg Asp Gln Pro Cys Thr Gln
 35 40 45
 Asn Trp Ile Gly Leu Leu Gly Trp Ser Phe Ser Ser Phe Leu Leu Tyr
 50 55 60
 Phe Phe Gly Ala Ala Ala Phe Phe Ile Pro Xaa Tyr Phe Leu Trp Leu
 65 70 75 80
 Ser Phe Leu Tyr Phe Arg Arg Thr Pro Arg Pro Leu Phe Phe Tyr Lys
 85 90 95
 Ala Ala Ala Phe Leu Ser Leu Pro Phe Cys Ser Ala Ile Leu Leu Ser
 100 105 110
 Met Leu Ser Pro Val Gly Thr Leu Pro Ala Leu Leu Asp Thr Arg Leu
 115 120 125
 Pro Lys Phe Ile Leu Gly Asn Ile Pro Pro Val Ser Tyr Val Gly Gly
 130 135 140
 Ile Pro Phe Tyr Leu Phe Tyr Glu Gly Gln Ser Phe Cys Leu Lys His
 145 150 155 160
 Leu Ile Gly Ser Val Gly Thr Ala Leu Ile Phe Gly Phe Val Met Leu
 165 170 175
 Phe Ser Val Leu Tyr Leu Cys Gly Arg His Cys Phe Ile Lys Lys Lys
 180 185 190
 Xaa Leu Ser Arg Arg Gly Gln Lys Gly Phe Leu Leu Phe Phe Pro Asn
 195 200 205
 Leu Phe Gln Lys Phe Lys Lys Ile Asn Lys
 210 215

<210>948

<211>162

<212>PRT

<213>Chlamydia pneumoniae

<400>948

Lys Thr Ser Asn Asn Thr Gln Lys Asn Leu Leu Leu Ile Lys Ser Ala
 1 5 10 15
 Glu Ser Ser Ser Leu Gln Leu Ser Leu Ala Ser Ser Ala Ile Ser Ser
 20 25 30
 Arg Val Glu Gln Leu Ser Ser Leu Val Leu Gly Met Glu Asn Ser Asp
 35 40 45
 Phe Ser Ser Leu Arg Asp Val Pro Ile Phe Ser Ala Ile Tyr Glu Ser
 50 55 60
 Ser Thr His Thr Pro Val Pro Thr Pro Leu Val Gly Val Gly Tyr Ile
 65 70 75 80
 Asn Gly Ser Gln Ser Gly Tyr Tyr Asp Thr Gln Arg Glu Ser Leu His
 85 90 95
 Leu Ser Gln Leu Leu Gly Ser Arg Arg Val Glu Val Val Tyr Asn Gln
 100 105 110
 Gly Asn Phe Met Glu Ala Ser Leu Leu Asn Leu Cys Pro Arg Arg Pro
 115 120 125
 Arg Arg Asp Pro Ser Pro Ile Ser Leu Ala Leu Leu Glu Leu Trp Glu
 130 135 140
 Ala Phe Phe Leu Glu His Pro Pro Gly Ser Thr Phe Asn Pro Ile Phe
 145 150 155 160
 Phe Trp

<210>949

<211>127

<212>PRT

<213>Chlamydia pneumoniae

<400>949

Thr Arg Ser Lys Lys Ser Gln Ser Cys Leu Lys Ser Met Ala Gly Phe

1	5	10	15
Arg Leu Gln Ser	Leu Gln Ile Leu Tyr Arg	Arg Ile Gly Ser Leu Tyr	
20	25	30	
Leu Gln Lys His	Asp Asn Lys Arg Ser Glu Asp Val Leu Asp Ile Glu		
35	40	45	
Lys Asp Arg Tyr	Gln Arg Ala Leu Tyr Ser Val His Ala Glu Leu Gly		
50	55	60	
Gly Glu Leu Arg	Glu His Arg Lys Leu Arg Tyr Gln Lys Asn Ile Gly		
65	70	75	80
Leu Lys Val Leu	Pro Gly Gly Cys Ser Lys Lys Asn Ala Ser Gln Ser		
85	90	95	
Ser Asn Arg Ala	Lys Glu Ile Gly Glu Gly Ser Leu Arg Gly Leu Leu		
100	105	110	
Gly His Arg Phe	Ser Lys Glu Ala Ser Met Lys Phe Pro Trp Leu		
115	120	125	

<210>950

<211>412

<212>PRT

<213>Chlamydia pneumoniae

<400>950

Asn Thr Pro Gln	Val Ala Leu Leu Ile Gln Tyr Phe Phe Gly Asn Gly
1	5 10 15
Ala Phe Tyr Val	Arg Glu Ala Leu Arg Leu Thr Pro His Ala Gln Asn
20	25 30
Ile Val Leu Val	Gly Ile Cys Pro Ser Leu Tyr Pro Glu His Pro Arg
35	40 45
Ser Phe Tyr Tyr	Arg Val Ser Gly Asp Ile Gly Ser Arg Phe Asp Asp
50	55 60
Arg Gly Phe Val	Asn Ser Gly Val Glu Thr Leu Pro Tyr Ser Ser Gly
65	70 75 80
Ser Phe Gly Ile	Phe Trp Ile Ser Phe Thr Asp Pro Thr Phe Asn Phe
85	90 95
Ala Ile Val Asn	Thr Phe Met Arg Thr Ala Gly Ile Asn Glu Val Ser
100	105 110
Arg Pro Met Thr	Gln Asp Thr Glu Thr Ser Leu Ile Glu Met Arg Asp
115	120 125
Leu Ser Glu Gln	Gln Glu Ala Asn Asn Thr Asp Ser Leu Glu Gln Glu
130	135 140
Glu Ser Leu Met	Gly Ile Val Gly His Thr Val Gly Gly Val Ser Met
145	150 155 160
Thr Val Thr Ser	Ser Pro Asn Ile Phe Tyr Arg Ile Gln Thr Leu Leu
165	170 175
Gly Leu Pro Glu	Thr Leu Ala Glu Ala Glu Glu Asn Pro Thr Phe Pro
180	185 190
Asn Ser Thr Ile	Asp Ser Leu Ala Glu Ile Met Met Asn Leu Val Arg
195	200 205
Ile Ser Asp Ala	Val Ser Ile Phe Trp Ile Phe Pro Ile Val Asp Thr
210	215 220
Thr Tyr Asn Gly	Val Leu Ala Val Cys Ile Gly Phe Phe Gly Ile
225	230 235 240
Asn Gly Ile Cys	Ser Thr Phe Leu Met Leu Thr Asn Pro Arg Ser Arg
245	250 255
Arg Asp Arg Trp	Arg Asn Leu Arg Ile Met Val Leu Cys Tyr Arg Ser
260	265 270
Leu Gly Ser Gly	Met Asn Leu Phe Asp Leu Ser Asn Asn Val Arg Met
275	280 285
Ala Ala Arg Arg	His Val Thr Ser Cys Thr Val Ala Leu Tyr Ala Met
290	295 300
Val Thr Leu Phe	Gly Trp Thr Val Ala Ile Gln Asp Ala Leu Gln Tyr
305	310 315 320
Gly Phe Pro Ser	Val Arg Asp Ala Phe Tyr Arg Tyr Cys Leu Arg His
325	330 335
Arg Tyr Cys Leu	Thr Gln Arg Asn Glu Asp Ser Leu Gln Thr Thr Gly
340	345 350

WO 99/27105

Thr Arg Phe Gln Val Thr Arg Thr His Leu Glu Asp Gln Gln Met Val
 355 360 365
 Ala Ser Ile Leu Asn Leu Ser Val Phe Gly Leu Phe Phe Gly Phe Val
 370 375 380
 Gly Leu Met Thr Thr Phe Gly Gly Leu Glu Ile Ser Pro Ser Cys Arg
 385 390 395 400
 Trp Asp Ala Ala Asn Asn Arg Thr Val Gly Ile Phe
 405 410

<210>951

<211>117

<212>PRT

<213>Chlamydia pneumoniae

<400>951

Lys Ile Phe Gly Leu Glu Val Thr Val Met Glu Thr Pro Pro Thr Val
 1 5 10 15
 Cys Pro Thr Ile Pro Ile Lys Leu Ser Ser Cys Ser Lys Glu Ser Val
 20 25 30
 Leu Phe Ala Ser Cys Cys Ser Leu Arg Ser Leu Ile Ser Ile Asn Glu
 35 40 45
 Val Ser Val Ser Cys Val Met Gly Leu Glu Thr Ser Leu Ile Pro Ala
 50 55 60
 Val Arg Ile Lys Val Phe Thr Ile Ala Lys Leu Asn Val Gly Ser Val
 65 70 75 80
 Asn Glu Ile Gln Lys Ile Pro Lys Leu Pro Glu Glu Tyr Gly Arg Val
 85 90 95
 Ser Thr Pro Glu Phe Thr Asn Pro Leu Ser Ser Asn Arg Glu Pro Ile
 100 105 110
 Ser Pro Glu Thr Arg
 115

<210>952

<211>431

<212>PRT

<213>Chlamydia pneumoniae

<400>952

Met Thr Trp Leu Ser Gly Leu Tyr Phe Ile Cys Ile Ala Ser Leu Ile
 1 5 10 15
 Phe Cys Ala Ile Gly Val Ile Leu Ala Gly Val Ile Leu Leu Ser Arg
 20 25 30
 Lys Leu Phe Ile Lys Val His Pro Cys Lys Leu Lys Ile Asn Asp Asn
 35 40 45
 Glu Glu Leu Thr Lys Thr Val Glu Ser Gly Gln Thr Leu Leu Val Ser
 50 55 60
 Leu Leu Ser Ser Gly Ile Pro Ile Pro Ser Pro Cys Gly Gly Lys Ala
 65 70 75 80
 Thr Cys Lys Gln Cys Lys Val Arg Val Val Lys Asn Ala Asp Glu Pro
 85 90 95
 Leu Glu Thr Asp Arg Ser Thr Phe Ser Lys Arg Gln Leu Glu Glu Gly
 100 105 110
 Trp Arg Leu Ser Cys Gln Cys Lys Val Gln His Asp Met Ser Leu Glu
 115 120 125
 Ile Glu Glu Arg Tyr Leu Asn Ala Ser Ser Trp Glu Gly Thr Val Ile
 130 135 140
 Ser Asn Asp Asn Val Ala Thr Phe Ile Lys Glu Leu Val Val Ala Val
 145 150 155 160
 Asp Pro Asn Lys Pro Ile Pro Phe Lys Pro Gly Gly Tyr Leu Gln Ile
 165 170 175
 Thr Val Pro Ser Tyr Lys Thr Asn Ser Ser Asp Trp Lys Gln Thr Met
 180 185 190
 Ala Pro Glu Tyr Tyr Ser Asp Trp Glu His Phe His Leu Phe Asp Gln
 195 200 205
 Val Ile Asp Asn Ser Gln Leu Pro Ala Asp Ser Ala Asn Lys Ala Tyr
 210 215 220
 Ser Leu Ala Ser Tyr Pro Ala Glu Leu Pro Thr Ile Lys Phe Asn Ile
 225 230 235 240

Arg	Ile	Ala	Thr	Pro	Pro	Phe	Ile	Asn	Gly	Lys	Pro	Asn	Ser	Glu	Ile
				245					250					255	
Pro	Trp	Gly	Val	Cys	Ser	Ser	Tyr	Val	Phe	Ser	Leu	Lys	Pro	Gly	Asp
			260					265					270		
Lys	Ile	Thr	Val	Ser	Gly	Pro	Tyr	Gly	Glu	Ser	Phe	Met	Lys	Asp	Asp
		275					280					285			
Asp	Arg	Pro	Leu	Ile	Phe	Leu	Ile	Gly	Gly	Ala	Gly	Ser	Ser	Phe	Gly
	290					295					300				
Arg	Ser	His	Ile	Leu	Asp	Leu	Leu	Leu	Asn	Lys	His	Ser	Lys	Arg	Glu
305					310					315					320
Ile	Asp	Leu	Trp	Tyr	Gly	Ala	Arg	Ser	Leu	Lys	Glu	Asn	Ile	Tyr	Gln
			325						330					335	
Glu	Glu	Tyr	Glu	Asn	Leu	Glu	Arg	Gln	Phe	Pro	Asn	Phe	His	Tyr	His
			340					345					350		
Leu	Val	Leu	Ser	Glu	Pro	Leu	Pro	Glu	Asp	Ile	Ala	Ala	Gly	Trp	Asp
		355					360					365			
Lys	Asp	Asp	Pro	Thr	Lys	Thr	Asn	Phe	Leu	Phe	Arg	Ala	Phe	Asn	Leu
	370					375					380				
Gly	Gln	Leu	Ser	Arg	Leu	Asp	Asn	Pro	Glu	Asp	Tyr	Leu	Tyr	Tyr	Val
385					390					395					400
Cys	Gly	Pro	Pro	Leu	His	Asn	Ser	Ser	Ile	Leu	Lys	Leu	Leu	Gly	Asp
				405					410					415	
Tyr	Gly	Val	Glu	Arg	Ser	Ser	Ile	Ile	Leu	Asp	Asp	Phe	Gly	Ser	
			420					425					430		

<210>953

<211>106

<212>PRT

<213>Chlamydia pneumoniae

<400>953

Leu	Leu	Ser	Ser	Leu	Pro	Leu	Phe	Ala	Glu	Glu	Glu	Ala	Ala	Gln	Ser
1				5					10					15	
Lys	Asn	Thr	Phe	Val	Gln	Pro	Ala	Val	Met	Leu	Ala	Ile	Ala	Ile	Leu
			20					25					30		
Phe	Phe	Tyr	Phe	Ile	Leu	Trp	Arg	Pro	Glu	Gln	Lys	Arg	Arg	Lys	Ala
		35				40						45			
Met	Glu	Lys	Arg	Lys	Asn	Asp	Leu	Ala	Lys	Gly	Asp	Lys	Val	Thr	Ala
	50				55					60					
Met	Gly	Ile	Ile	Gly	Thr	Val	Asp	Asp	Ile	Arg	Glu	His	Thr	Val	Ile
65					70					75				80	
Leu	Asn	Ile	Ala	Ser	Gly	Lys	Val	Glu	Val	Leu	Lys	Gly	Ala	Ile	Ser
				85				90						95	
Glu	Ile	Leu	Lys	Pro	Asn	Asp	Asn	Lys	Ser						
		100						105							

<210>954

<211>401

<212>PRT

<213>Chlamydia pneumoniae

<400>954

Met	Ser	Thr	Met	Gln	Asn	Cys	Pro	His	Phe	Gly	Val	Cys	Gly	Gly	Cys
1				5					10					15	
Ser	Phe	Pro	Gln	Ser	Asn	Tyr	Ser	Asp	Ser	Leu	Lys	Lys	Lys	Glu	Glu
			20					25					30		
Leu	Leu	His	Gln	Leu	Phe	Ala	Pro	Leu	Val	Pro	Ser	Asp	Met	Ile	Ala
		35					40					45			
Pro	Ile	Ile	Pro	Cys	Ser	Pro	Ser	Leu	Arg	Gly	Arg	Asn	Lys	Met	Glu
	50				55					60					
Phe	Ser	Phe	Phe	Gln	Thr	Tyr	Glu	Gly	Glu	Lys	Ser	Leu	Gly	Phe	Ile
65					70					75				80	
Ser	Ser	Thr	Lys	Pro	Lys	Lys	Gly	Ile	Pro	Val	Thr	Thr	Cys	Leu	Leu
			85					90						95	
Ile	His	Glu	Gln	Thr	Met	Asp	Ile	Leu	Lys	Leu	Thr	Arg	Glu	Trp	Trp
		100						105					110		
Asp	Lys	His	Pro	Glu	Leu	Met	Ala	Tyr	Phe	Pro	Pro	Lys	Asn	Lys	Gly
		115					120						125		

Ser Leu Cys Thr Leu Thr Val Arg Thr Gly Ser Pro Gln Gln Asn Phe
 130 135 140
 Met Val Ile Leu Thr Thr Ser Gly Thr Pro Glu Tyr Arg Val Asn Glu
 145 150 155 160
 Ala Cys Ile Asp Glu Trp Lys Glu Ile Leu Leu Ser Ser Ser Leu Asn
 165 170 175
 Ile Ala Ser Ile Tyr Trp Glu Glu Lys Val Ala Ala Arg Gly Ile Ser
 180 185 190
 Thr Tyr Tyr Glu Thr Lys Leu Leu Tyr Gly Ala Pro Ser Ile Gln Gln
 195 200 205
 Lys Leu Ser Leu Pro Ser Asp Gly Asn Ser Ala Ser Phe Ser Leu Arg
 210 215 220
 Pro Arg Ser Phe Phe Gln Pro Gln Ile Thr Gln Ala Ala Lys Ile Ile
 225 230 235 240
 Glu Thr Ala Lys Glu Phe Ile Asn Pro Glu Gly Ser Glu Thr Leu Leu
 245 250 255
 Asp Leu Tyr Cys Gly Ala Gly Thr Ile Gly Ile Met Leu Ser Pro Tyr
 260 265 270
 Val Lys Asn Val Ile Gly Val Glu Ile Ile Pro Asp Ala Val Ala Ser
 275 280 285
 Ala Gln Glu Asn Ile Lys Ala Asn Asn Lys Glu Asp Cys Val Glu Val
 290 295 300
 Tyr Leu Glu Asp Ala Lys Ala Phe Cys Lys Arg Asn Glu Asn Cys Lys
 305 310 315 320
 Ala Pro Asp Val Ile Ile Ile Asp Pro Pro Arg Cys Gly Met Gln Ser
 325 330 335
 Lys Val Leu Lys Tyr Ile Leu Arg Ile Gly Ser Pro Lys Ile Val Tyr
 340 345 350
 Ile Ser Cys Asn Pro Lys Thr Gln Phe Gln Glu Cys Ala Asp Leu Ile
 355 360 365
 Ser Gly Gly Tyr Arg Ile Lys Lys Met Gln Pro Ile Asp Gln Phe Pro
 370 375 380
 Tyr Ser Thr His Leu Glu Asn Ile Ile Leu Leu Glu Arg Glu Ile Asp
 385 390 395 400
 Leu

<210>955

<211>123

<212>PRT

<213>Chlamydia pneumoniae

<400>955

Met Ala Leu Lys Asp Thr Ala Lys Lys Met Lys Asp Leu Leu Asp Ser
 1 5 10 15
 Ile Gln His Asp Leu Ala Lys Ala Glu Lys Gly Asn Lys Ala Ala Ala
 20 25 30
 Gln Arg Val Arg Thr Asp Ser Ile Lys Leu Glu Lys Val Ala Lys Leu
 35 40 45
 Tyr Arg Lys Glu Ser Ile Lys Ala Glu Lys Ser Gly Leu Leu Lys Arg
 50 55 60
 Lys Pro Ser Thr Lys Ala Pro Ala Lys Val Lys Lys Thr Ala Glu Lys
 65 70 75 80
 Lys Ala Pro Lys Lys Ser Ser Ala Ala Ala Lys Thr Ser Lys Ala
 85 90 95
 Val Lys Ala Ser Lys Pro Ala Ser Lys Lys Thr Ala Ala Lys Lys Val
 100 105 110
 Lys Lys Pro Ser Lys Ala Arg Gly Phe Arg Lys
 115 120

<210>956

<211>822

<212>PRT

<213>Chlamydia pneumoniae

<400>956

Met Lys Lys Leu Tyr His Pro Thr Leu Phe Leu Arg Pro Leu Ile Arg
 1 5 10 15

Leu	Ser	Leu	Ile	Phe	Ala	Leu	Ser	Leu	Thr	Leu	Ile	Ser	Gly	Asn	Phe	20	25	30
Pro	Gln	Gln	Lys	Ser	Phe	Gly	His	Cys	Cys	Ala	Asp	Met	His	Ser	Ala	35	40	45
Leu	Ile	Ser	Gly	Lys	Asn	Cys	Glu	Glu	Leu	Phe	Ala	Asp	Phe	Ile	Glu	50	55	60
Arg	Val	Leu	Ala	Asp	Arg	Glu	Thr	Leu	Thr	Ala	Arg	Asp	Trp	Gly	Thr	65	70	75
Val	Val	Val	Leu	Val	Arg	Glu	Tyr	Leu	Leu	Lys	Cys	Ile	Arg	Lys	Gly	85	90	95
Asp	Cys	Asp	Tyr	Gly	Val	Lys	Ile	Leu	Gln	Lys	Leu	Leu	Ala	Leu	Arg	100	105	110
Leu	Pro	Lys	Asp	Ala	Arg	Lys	Asp	Leu	Gln	Ile	Leu	Trp	His	Arg	Leu	115	120	125
Asn	Pro	Glu	Gln	Ala	Pro	Leu	Arg	Asp	Val	Val	Asp	Gln	Leu	Phe	Thr	130	135	140
Ile	Gly	Cys	His	Glu	Ser	Leu	Gln	Asp	His	Leu	Leu	Phe	Glu	Leu	Tyr	145	150	155
Thr	Val	Thr	Leu	His	Ser	Gly	Tyr	Glu	Asn	Arg	Lys	Gln	Asp	Met	Leu	165	170	175
Leu	Ala	Lys	Glu	Gln	Gly	Asp	Tyr	Lys	Lys	Ala	Ile	Glu	Leu	Ala	Lys	180	185	190
Glu	Leu	Val	Ala	Ala	Leu	Glu	Lys	Gly	Ser	Cys	Ser	Pro	His	Pro	Glu	195	200	205
Ile	Val	Gln	Ile	Glu	Lys	Thr	Phe	Leu	Gln	Lys	Thr	Leu	Leu	Ala	Leu	210	215	220
Gln	Ile	Lys	Val	Ala	Gln	Glu	Ala	Gln	Glu	Ser	Cys	Asp	Ala	Leu	Leu	225	230	235
Thr	Pro	Tyr	Cys	Leu	Ser	Glu	Ile	Ala	Tyr	Thr	Glu	Ala	Met	Asp	Ala	245	250	255
Leu	Val	Leu	Arg	Ile	Ala	Arg	Gly	Glu	Val	Ser	Arg	Thr	Asn	Glu	Val	260	265	270
Asp	Ser	Val	Leu	Leu	Ser	His	Ala	Leu	Gln	His	Leu	Pro	Phe	Ala	Arg	275	280	285
Glu	Lys	Ala	Ile	Pro	Glu	Leu	Glu	Val	Leu	Ile	Asp	His	Gly	Ala	Tyr	290	295	300
Leu	Glu	Ser	Thr	Leu	Leu	Tyr	Tyr	Ala	Tyr	Phe	Ser	Leu	Leu	Glu	Leu	305	310	315
Tyr	His	Gln	Asn	Lys	Asp	Phe	Ala	Ser	Leu	Glu	Arg	Leu	Leu	Glu	Lys	325	330	335
Gly	Asp	Ala	Val	Phe	Val	Pro	Glu	His	Pro	Tyr	Phe	Pro	Glu	Tyr	Gly	340	345	350
Phe	Phe	Leu	Gly	Ala	Tyr	Phe	Tyr	Ala	Lys	Gly	Lys	Tyr	Glu	Ser	Ala	355	360	365
Glu	Lys	Val	Phe	Leu	Gln	Ile	Ile	Asp	Pro	Ala	Val	Lys	Leu	Gly	Ala	370	375	380
Thr	Phe	Ala	Arg	Ala	Tyr	Glu	Tyr	Leu	Gly	Cys	Ile	Ala	Tyr	Val	Gln	385	390	395
Asn	His	Tyr	Glu	Lys	Ala	Glu	Glu	Tyr	Phe	Leu	Arg	Ala	Tyr	Lys	Ser	405	410	415
Trp	Gly	Arg	Glu	Glu	Ser	Gly	Ile	Gly	Leu	Phe	Leu	Ala	Tyr	Ala	Val	420	425	430
Gln	Lys	Lys	Lys	Thr	Ala	Cys	Glu	Asp	Met	Leu	Tyr	His	Pro	Lys	Phe	435	440	445
Ser	Phe	Thr	Tyr	Arg	His	Leu	Leu	Asp	Ser	Leu	Cys	Ser	Leu	Ser	Tyr	450	455	460
Pro	His	Gly	Glu	Asn	Lys	Gly	Ser	Ser	Ala	Ile	Gln	Arg	Val	His	Arg	465	470	475
Ala	Val	Pro	Glu	Leu	Ser	Glu	Ile	Tyr	Ser	Arg	Cys	Ile	Tyr	Asp	Met	485	490	495
Ile	Lys	Tyr	Arg	Asn	Val	Thr	Tyr	Thr	His	Pro	Ile	Ile	Glu	Leu	Ala	500	505	510
Tyr	Asn	Gln	Val	Arg	Asn	Leu	Glu	Lys	Arg	Asn	Leu	Glu	Glu	Ile	Cys	515	520	525

WO 99/27105

Arg Asp Ala Gln Asp Pro Glu Tyr Asp Lys Ala Leu Ala Phe Trp Gly
 530 535 540
 Ala Leu Gln Ser Gly Ala Ser Val Pro Arg Ser Leu Ile Glu Ser Ser
 545 550 555 560
 Asp Val Asp Glu Ala Gly Ile Thr Ile Arg Cys Tyr Glu Ala Leu Tyr
 565 570 575
 Phe His Asn Pro Asp Ala Ile Ala Met Leu Pro Gln Ala Phe Ser Glu
 580 585 590
 Glu Cys Asn Ser Trp Gln Thr Ala Leu Arg Leu Val Trp Thr Leu Val
 595 600 605
 Arg Pro Lys Gly Ala Pro Asn His Ala Lys Tyr Trp Asp His Leu Val
 610 615 620
 Leu Arg Pro His Gly Asp Ser Leu Tyr Phe Phe Gly Tyr Asp Leu Gln
 625 630 635 640
 Glu Tyr Leu Ile Gly Lys Glu Asp Ala Leu Lys His Leu Ser Val Phe
 645 650 655
 Ala Glu Leu Phe Pro Lys Ser Ser Leu Leu Ser Leu Val Tyr Tyr Leu
 660 665 670
 Gln Gly Tyr Ser Glu Ser Ser Ala Leu Arg Lys Val Gly Trp Phe Val
 675 680 685
 Lys Ala Leu Glu Glu Phe Thr Glu Ile Ser Trp Ser Gly Glu His Met
 690 695 700
 Lys Thr Trp Ala Tyr Ile Tyr Tyr Met Val Lys Leu Asp Leu Ala Asp
 705 710 715 720
 Thr Tyr Ile Ser Leu Gly Asn Phe Ser Gln Ala Val His Ile Leu Glu
 725 730 735
 Glu Val Lys Glu Asp Trp Gln Val Ala Ser His Pro Lys Leu His Phe
 740 745 750
 Leu Lys Gly Glu Asp Cys Tyr Leu Ala Met Glu Leu Arg Trp Val Glu
 755 760 765
 Gly Leu Ala Tyr Ala Tyr Phe Gln Leu His Glu Thr Ala His Leu Ser
 770 775 780
 Asn His Leu Leu Glu His Val Glu Lys Asn Leu Ile Ser Pro Arg Ser
 785 790 795 800
 Tyr Arg Asp Tyr Tyr Gly Glu Ser Leu Gln Arg Thr Leu Gly Leu Cys
 805 810 815
 Gln Arg Phe Leu Gly Val
 820

<210>957

<211>150

<212>PRT

<213>Chlamydia pneumoniae

<400>957

His Gln Leu Arg Leu Ala Ser Arg Gln Leu Phe Ala Ser Gln Arg Leu
 1 5 10 15
 Trp His Ala Ile Cys Arg Arg Ala Ser Pro Leu Gly Asn Arg Leu Glu
 20 25 30
 Phe Ser Asn Leu Pro Ala Ser Thr Pro Gly Lys Thr Val Leu Ser Leu
 35 40 45
 Leu Ile Glu Gly Lys Trp Arg Glu Ser Glu Ala His Ala Phe Ala Ile
 50 55 60
 Ala Ala Leu Ser Glu Tyr Leu Asn Ile Asn Gln Lys Pro Asp Ala Phe
 65 70 75 80
 Ala Leu Phe Ser Ser Gln Asp Gly Met Pro Gln His Ala Val Gly Phe
 85 90 95
 Leu Glu Arg Lys Glu Arg Ile Leu Pro His Leu Pro Gly Asn Leu Lys
 100 105 110
 Ile Val Gly Gln Asn Ile Ala Gly Pro Gly Leu Asn Arg Cys Ile Ala
 115 120 125
 Ser Ala Tyr His Ala Ile Cys Asp Leu His Thr Glu Glu Thr Leu Ala
 130 135 140
 Gln Pro Gln Ser Ser Leu
 145 150
 <210>958

<211>354

<212>PRT

<213>Chlamydia pneumoniae

<400>958

Ala Glu Arg Arg Phe Cys Val Lys Arg Ala Ile Ile Ile Gly Ala Gly
 1 5 10 15
 Ile Ser Gly Leu Ala Ala Gly Trp Trp Leu His Lys Lys Phe Pro Gln
 20 25 30
 Ala Glu Ile Leu Val Leu Asp Lys Glu Ala Tyr Ala Gly Gly Phe Val
 35 40 45
 Arg Thr Glu Ser Pro Gln Gly Phe Ser Phe Asp Leu Gly Pro Lys Gly
 50 55 60
 Phe Leu Thr Arg Gly Asp Gly Glu Tyr Thr Leu Lys Leu Ile His Glu
 65 70 75 80
 Leu Gly Leu Gln Asn Ser Leu Ile Phe Ser Asp Arg Ala Ala Lys Asn
 85 90 95
 Arg Phe Val Tyr Tyr Arg Gly Lys Ala Arg Lys Ile Ser Thr Trp Thr
 100 105 110
 Leu Leu Arg Lys Gly Leu Leu Pro Ser Leu Ile Lys Asp Phe Arg Ala
 115 120 125
 Pro Cys Tyr Thr Gln Asp Ser Ser Val Gln Asp Phe Leu Lys Arg His
 130 135 140
 Ser Ser Gln Asn Phe Thr Ser Tyr Ile Leu Asp Pro Leu Ile Thr Ala
 145 150 155 160
 Ile Arg Ala Gly His Ser Ser Ile Leu Ser Thr His Met Ala Phe Pro
 165 170 175
 Glu Leu Ala Lys Arg Glu Ala Ser Ser Gly Ser Leu Leu Arg Ser Tyr
 180 185 190
 Leu Lys Asn Arg Ser Pro Lys Lys Ser Lys Thr Asp Arg Tyr Leu Ala
 195 200 205
 Ser Leu Ser Pro Ser Met Gly Thr Leu Ile Thr Thr Ile Gln Glu Lys
 210 215 220
 Leu Pro Ala Thr Trp Lys Phe Ser Thr Ser Val Thr His Ile Asp Cys
 225 230 235 240
 Ser Pro Lys Glu Ala Cys Val Thr Thr Pro Ser Glu Thr Phe Phe Ala
 245 250 255
 Asp Met Val Ile Tyr Thr Gly Pro Leu Gln Gln Leu Pro Val Leu Leu
 260 265 270
 Pro Asn Tyr Gly Ile Glu Asn Leu Ser Lys Arg Val Leu Pro Trp Asn
 275 280 285
 Leu Ser Ser Ile Ser Leu Gly Trp His His Ala Asn Phe Ser Leu Pro
 290 295 300
 Lys Gly Tyr Gly Met Leu Phe Ala Asp Glu Leu Pro Leu Leu Gly Ile
 305 310 315 320
 Val Trp Asn Ser Gln Ile Phe Pro Gln Val Arg Gln Gly Lys Gln Cys
 325 330 335
 Ser Pro Phe Ser Leu Lys Ala Asn Gly Gly Asn Gln Lys Leu Met Pro
 340 345 350
 Leu Arg

<210>959

<211>460

<212>PRT

<213>Chlamydia pneumoniae

<400>959

Phe Leu Met Phe Asn Val Asn Phe Lys Phe Leu Glu Gly Leu His Gln
 1 5 10 15
 Pro Ala Pro Arg Tyr Thr Ser Tyr Pro Thr Ala Leu Glu Trp Glu Pro
 20 25 30
 Ser Asp Ala Ala Pro Ala Leu Leu Ala Phe Gln Arg Xaa Arg Xaa Asn
 35 40 45
 Xaa Gln Pro Leu Ser Leu Tyr Phe His Ile Pro Phe Cys Gln Ser Met
 50 55 60
 Cys Leu Tyr Cys Gly Cys Ser Val Val Leu Asn Arg Arg Glu Asp Ile

WO 99/27105

65 70 75 80
 Val Glu Ala Tyr Ile Asn Thr Leu Ile Gln Glu Met Lys Leu Val Val
 85 90 95
 Glu Thr Ile Gly Phe Arg Pro Gln Val Ser Arg Ile His Phe Gly Gly
 100 105 110
 Gly Thr Pro Ser Arg Leu Ser Arg Glu Leu Phe Thr Leu Leu Phe Asp
 115 120 125
 His Ile His Lys Leu Phe Asp Leu Ser His Ala Glu Glu Ile Ala Ile
 130 135 140
 Glu Val Asp Pro Arg Ser Leu Arg Asn Asp Met Glu Lys Ala Asp Phe
 145 150 155 160
 Phe Gln Asn Val Gly Phe Asn Arg Val Ser Leu Gly Val Gln Asp Thr
 165 170 175
 Gln Ala Asp Val Gln Glu Ala Val Arg Arg Arg Gln Ser His Glu Glu
 180 185 190
 Ser Leu Lys Ala Tyr Glu Lys Phe Lys Glu Leu Ala Phe Gln Ser Ile
 195 200 205
 Asn Ile Asp Leu Ile Tyr Gly Leu Pro Lys Gln Thr Lys Glu Ser Phe
 210 215 220
 Ser Lys Thr Ile Gln Asp Ile Leu Ala Met Tyr Pro Asp Arg Leu Ala
 225 230 235 240
 Leu Phe Ser Phe Ala Ser Val Pro Trp Ile Lys Pro His Gln Lys Ala
 245 250 255
 Met Lys Ala Ser Asp Met Pro Ser Met Glu Glu Lys Phe Ala Ile Tyr
 260 265 270
 Ser Gln Ser Arg His Leu Leu Thr Lys Ala Gly Tyr Gln Ala Ile Gly
 275 280 285
 Met Asp His Phe Ser Leu Pro His Asp Pro Leu Thr Leu Ala Phe Lys
 290 295 300
 Asn Lys Thr Leu Ile Arg Asn Phe Gln Gly Tyr Ser Leu Pro Pro Glu
 305 310 315 320
 Glu Asp Leu Leu Gly Leu Gly Met Thr Ser Thr Ser Phe Ile Arg Gly
 325 330 335
 Ile Tyr Leu Gln Asn Ala Lys Thr Leu Glu Glu Tyr His Asn Thr Val
 340 345 350
 Leu Arg Gly Thr Phe Ala Thr Val Lys Ser Lys Ile Leu Thr Glu Asp
 355 360 365
 Asp Arg Ile Arg Lys Trp Ala Ile His Lys Leu Met Cys Thr Phe Thr
 370 375 380
 Ile Asn Lys Glu Glu Phe Phe Asn Leu Phe Gly Tyr Glu Phe Asp Thr
 385 390 395 400
 Tyr Phe Ile Glu Ser Arg Asp Arg Leu Ile Ser Met Glu Thr Thr Gly
 405 410 415
 Leu Ile His Asn Ser Pro Gly Ser Leu Lys Val Thr Pro Leu Gly Glu
 420 425 430
 Leu Phe Val Arg Val Ile Ala Thr Ala Phe Asp His Tyr Phe Leu Asn
 435 440 445
 Lys Val Ser Lys Lys Glu Cys Phe Ser Ala Ser Ile
 450 455 460

<210>960

<211>281

<212>PRT

<213>Chlamydia pneumoniae

<400>960

Ser Tyr Cys Arg Ala Thr Leu Leu Gly Pro Ser Leu Leu His Val Asp
 1 5 10 15
 Ala Ala Ile Leu Phe Ala Asp Ile Leu Ser Ile Leu Asp Gly Phe Ala
 20 25 30
 Val Thr Tyr Asp Phe Ala Pro Gly Pro Arg Ile Gln Phe Ser Pro Glu
 35 40 45
 Gln Pro Phe Thr Phe Thr Ser Asp Pro Gln Thr Ile Phe Ser Tyr Leu
 50 55 60
 Leu Asp Ala Ile Arg Thr Leu Lys Gln Lys Leu Pro Val Pro Leu Ile
 65 70 75 80

Val	Phe	Ala	Ala	Ser	Pro	Phe	Thr	Leu	Ala	Cys	Tyr	Leu	Ile	Asp	Gly	85	90	95
Gly	Ala	Ser	Lys	Asp	Phe	Ser	Lys	Thr	Met	Ser	Phe	Leu	Tyr	Val	Tyr	100	105	110
Pro	Glu	Lys	Phe	Asp	Gln	Leu	Ile	Ser	Thr	Ile	Ile	Glu	Gly	Thr	Ala	115	120	125
Ile	Tyr	Leu	Lys	Thr	Gln	Met	Asp	Ala	Gly	Ala	Ala	Ala	Val	Gln	Leu	130	135	140
Phe	Glu	Ser	Ser	Ser	Leu	Arg	Leu	Pro	Ser	Ala	Leu	Phe	Thr	Arg	Tyr	145	150	155
Val	Thr	Glu	Pro	Asn	Arg	Arg	Leu	Ile	Ala	Lys	Leu	Lys	Glu	Gln	Ala	165	170	175
Ile	Pro	Val	Ser	Leu	Phe	Cys	Arg	Cys	Phe	Glu	Glu	Asn	Phe	Tyr	Thr	180	185	190
Leu	Gln	Ala	Thr	Gln	Ala	Asp	Thr	Leu	His	Pro	Asp	Tyr	His	Val	Asp	195	200	205
Leu	His	Arg	Ile	Gln	Lys	Asn	Leu	Met	Leu	Ser	Leu	Gln	Gly	Asn	Leu	210	215	220
Asp	Pro	Ala	Ile	Phe	Leu	Leu	Pro	Gln	Glu	Lys	Leu	Leu	His	Tyr	Val	225	230	235
Glu	Ala	Phe	Leu	Val	Pro	Leu	Arg	Thr	Tyr	Pro	Asn	Phe	Ile	Phe	Asn	245	250	255
Ser	Gly	His	Gly	Ile	Leu	Pro	Glu	Thr	Pro	Leu	Glu	Asn	Val	Gln	Leu	260	265	270
Val	Val	Ser	Tyr	Val	Gln	Arg	Gln	Leu								275	280	

<210>961

<211>1085

<212>PRT

<213>Chlamydia pneumoniae

<400>961

Met	Ala	Met	Asp	Phe	Asn	Pro	Val	Asn	Leu	Asp	Phe	Ser	Ile	Ser	Lys	1	5	10	15
Glu	Phe	Lys	Glu	Glu	Thr	Leu	Pro	Leu	Leu	Glu	Asn	Ile	His	Pro		20	25	30	
Gly	Ala	Thr	Ala	Phe	Leu	Ala	Ala	Lys	Met	Phe	His	Asp	Cys	Arg	Ala	35	40	45	
Ser	Val	Ile	Met	Ile	Thr	Thr	Pro	Ala	Arg	Leu	Asp	Asp	Leu	Phe	Glu	50	55	60	
Asn	Leu	Arg	Thr	Phe	Leu	Asp	Gln	Ala	Pro	Val	Glu	Phe	Pro	Ser	Ser	65	70	75	80
Glu	Ile	Asp	Leu	Ser	Pro	Lys	Leu	Val	Asn	Ile	Asp	Ala	Val	Gly	Lys	85	90	95	
Arg	Asp	His	Leu	Leu	Tyr	Ser	Leu	Asn	Gln	His	Arg	Ala	Pro	Ile	Phe	100	105	110	
Cys	Val	Thr	Thr	Leu	Lys	Ala	Leu	Leu	Glu	Lys	Thr	Arg	Ser	Pro	Gln	115	120	125	
Ala	Thr	Ser	Gln	Gln	His	Leu	Asp	Leu	Ala	Val	Gly	Asp	Val	Leu	Asp	130	135	140	
Pro	Glu	Ala	Thr	Thr	Glu	Leu	Cys	Lys	Ser	Leu	Gly	Tyr	Ser	Gln	Val	145	150	155	160
Met	Leu	Thr	Ser	Glu	Lys	Gly	Glu	Phe	Ser	Cys	Arg	Gly	Gly	Ile	Val	165	170	175	
Asp	Ile	Phe	Pro	Leu	Ser	Ser	Pro	Glu	Pro	Phe	Arg	Ile	Glu	Phe	Trp	180	185	190	
Gly	Glu	Lys	Ile	Ile	Ser	Ile	Arg	Ser	Tyr	Asn	Pro	Ser	Asp	Gln	Leu	195	200	205	
Ser	Thr	Gly	Lys	Val	Ser	Lys	Ile	Ser	Ile	Ser	Pro	Ala	Tyr	Thr	Glu	210	215	220	
Glu	Ala	Ser	Gly	Gly	Asn	Tyr	Ser	His	Ser	Leu	Leu	Asp	Tyr	Phe	Ser	225	230	235	240
Thr	Pro	Pro	Leu	Tyr	Leu	Phe	Asp	Asn	Leu	Glu	Ile	Leu	Glu	Asp	Asp	245	250	255	
Phe	Ala	Asp	Ile	Ser	Gly	Thr	Leu	Ser	Ser	Leu	Pro	Asp	Arg	Phe	Phe				

WO 99/27105

260 265 270
 Ser Ile Gly Thr Leu Tyr Asp Arg Ile Ser Thr Ser Asn Gln Val Tyr
 275 280 285
 Phe Ser Glu Thr Pro Phe Pro Asn Val Lys Asn Leu Lys Glu Asn Arg
 290 295 300
 Val Ile Ile Glu Ala Phe His Arg Asn Met Glu Ala Ser Arg Gln Ala
 305 310 315 320
 Ile Pro Ile Leu Tyr Pro Glu Gln Ile Ile Gln Asn Asp Glu Asn Pro
 325 330 335
 Leu Leu Ala Phe Leu Gln His Leu Gln Glu Tyr Met Pro Pro His Gly
 340 345 350
 Lys Pro Leu Lys Leu Ala Ile Tyr Ser Thr Lys Thr Lys Ser Leu Lys
 355 360 365
 Glu Ala Arg Ala Leu Ala Glu Thr Val Ala Arg Gly Asp Val Glu Ile
 370 375 380
 Tyr Glu Lys Thr Gly Asn Leu Thr Ser Ser Phe Ala Leu Val Asn Glu
 385 390 395 400
 Ala Phe Ala Ala Ile Ser Leu Ser Glu Phe Ala Ser Thr Lys Val Leu
 405 410 415
 Arg Arg Gln Lys Gln Arg Thr His Phe Ser Val Thr Thr Glu Val
 420 425 430
 Phe Val Pro Ile Pro Gly Glu Thr Val Val His Ile His Asn Gly Ile
 435 440 445
 Gly Lys Phe Leu Gly Ile Glu Lys Lys Pro Asn His Leu Asn Ile Glu
 450 455 460
 Thr Asp Tyr Leu Val Leu Glu Tyr Ala Asp Lys Ala Arg Leu Tyr Val
 465 470 475 480
 Pro Ser Asn Gln Ala Tyr Leu Ile Ser Arg Tyr Val Gly Thr Ser Asp
 485 490 495
 Lys Ala Ala Asp Leu His His Leu Asn Ser Ser Lys Trp Lys Arg Ser
 500 505 510
 Arg Asp Leu Thr Glu Lys Ser Leu Ile Val Tyr Ala Glu Lys Leu Leu
 515 520 525
 Gln Leu Glu Ala Gln Arg Ser Thr Thr Pro Ala Phe Val Tyr Pro Pro
 530 535 540
 His Gly Glu Ser Val Ile Lys Phe Ala Glu Thr Phe Pro Tyr Glu Glu
 545 550 555 560
 Thr Pro Asp Gln Leu Lys Thr Ile Asp Gln Ile Tyr Asn Asp Met Met
 565 570 575
 Ser Pro Lys Leu Met Asp Arg Leu Ile Cys Gly Asp Ala Gly Phe Gly
 580 585 590
 Lys Thr Glu Val Ile Met Arg Ala Ala Val Lys Ala Val Cys Asp Gly
 595 600 605
 His Arg Gln Val Ile Val Met Val Pro Thr Thr Ile Leu Ala Thr Gln
 610 615 620
 His Tyr Glu Thr Phe Lys Glu Arg Met Ala Gly Leu Pro Ile Glu Ile
 625 630 635 640
 Ala Val Leu Ser Arg Phe Ser Gln Ala Lys Val Gln Lys Leu Ile Cys
 645 650 655
 Glu Gln Val Ala Ser Gly Gln Ile Asp Ile Ile Ile Gly Thr His Lys
 660 665 670
 Leu Ile Asn Lys Ser Leu Glu Phe Lys Asn Pro Gly Leu Leu Ile Ile
 675 680 685
 Asp Glu Glu Gln Arg Phe Gly Val Lys Val Lys Asp Asn Leu Lys Glu
 690 695 700
 Arg Tyr Pro Met Ile Asp Cys Leu Thr Val Ser Ala Thr Pro Ile Pro
 705 710 715 720
 Arg Thr Leu His Met Ser Leu Ser Gly Ala Arg Asp Leu Ser Val Ile
 725 730 735
 Ala Met Pro Pro Leu Asp Arg Leu Pro Val Ser Thr Phe Val Met Glu
 740 745 750
 His Asn Thr Glu Thr Leu Thr Ala Ala Leu Arg His Glu Leu Leu Arg
 755 760 765
 Gly Gly Gln Ala Tyr Val Ile His Asn Arg Ile Glu Ser Ile Tyr Thr

770 775 780
 Leu Ala Glu Thr Ile Arg Asn Leu Ile Pro Glu Ala Arg Ile Gly Val
 785 790 795 800
 Ala His Gly Gln Met Gly Ala Glu Asp Leu Ser Asn Ile Phe Thr Lys
 805 810 815
 Phe Lys Asn Gln Lys Thr Asp Ile Leu Val Ala Thr Ala Leu Ile Glu
 820 825 830
 Asn Gly Ile Asp Ile Pro Asn Ala Asn Thr Ile Leu Ile Asp His Ala
 835 840 845
 Asp Lys Phe Gly Met Ala Asp Leu Tyr Gln Met Lys Gly Arg Val Gly
 850 855 860
 Arg Trp Asn Lys Lys Ala Tyr Cys Tyr Phe Leu Val Pro His Leu Asp
 865 870 875 880
 Arg Leu Ser Gly Pro Ala Ala Lys Arg Leu Ala Ala Leu Asn Lys Gln
 885 890 895
 Glu Tyr Gly Gly Gly Met Lys Ile Ala Leu His Asp Leu Glu Ile Arg
 900 905 910
 Gly Ala Gly Asn Ile Leu Gly Thr Asp Gln Ser Gly His Ile Gly Thr
 915 920 925
 Ile Gly Phe Asn Leu Tyr Cys Lys Leu Leu Lys Lys Ala Val Ser Ala
 930 935 940
 Leu Lys Lys His Thr Ser Pro Leu Leu Phe Asn Asp Asp Val Lys Ile
 945 950 955 960
 Glu Phe Pro Tyr Asn Ser Arg Ile Pro Asp Thr Tyr Ile Glu Thr Gly
 965 970 975
 Ser Met Arg Ile Glu Phe Tyr Gln Lys Ile Gly Asn Ala Glu Ser Ser
 980 985 990
 Glu Glu Leu Thr Ala Ile Gln Glu Glu Met Arg Asp Arg Phe Gly Pro
 995 1000 1005
 Leu Pro Gln Glu Ile Cys Trp Leu Phe Ala Leu Ala Glu Ile Arg Leu
 1010 1015 1020
 Phe Ala Leu Gln His Gly Ile Ser Ser Ile Lys Gly Thr Ala Asn Ala
 1025 1030 1035 1040
 Leu Tyr Val Gln Lys Cys Leu Ser Lys Ser Glu Gln Thr Lys Lys Thr
 1045 1050 1055
 Leu Pro Tyr Ala Leu Ser Pro Thr Pro Glu Leu Leu Val Lys Glu Val
 1060 1065 1070
 Ile Glu Ser Ile Glu Arg Gly Phe Leu Ile Asn Ala Ser
 1075 1080 1085
 <210>962
 <211>182
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>962
 Gly Gly His Trp Arg Lys Ser Arg Ser Tyr Ser Thr Pro Thr Lys Arg
 1 5 10 15
 Ser Ile Arg Arg Asp Cys Thr Leu Leu Gln Val Pro Arg Asp Gln Ile
 20 25 30
 Val Ser Arg Leu Thr Ala Thr Leu Asp Glu Arg Lys Gln Gln Asp Lys
 35 40 45
 Arg Leu Asn Glu Leu Glu Asn Ser Leu Ile Gln Thr Lys Leu Asp Lys
 50 55 60
 Leu Ile His Asn Cys His Gln Arg Gln Gly Ile Thr Cys Leu Val His
 65 70 75 80
 His Leu Ala Glu His Glu Asn His Arg Leu Gln Gln Tyr Ala Gln Cys
 85 90 95
 Leu His Gln Arg Ile Pro Glu Lys Leu Ile Ser Leu Trp Thr Thr Glu
 100 105 110
 Lys Asn Gly Lys Tyr Ile Val Leu Ser Arg Val Ser Asp Asp Leu Ile
 115 120 125
 Thr Gln Gly Val His Ala Gln Asp Leu Leu Lys Ala Val Leu Thr Pro
 130 135 140
 Cys Gly Gly Arg Trp Gly Gly Lys Asp Gln Ser Ala Gln Gly Ser Ala
 145 150 155 160

WO 99/27105

Pro Ala Leu Pro Ala Thr Glu Val Leu Asn Glu Thr Leu Trp Gln Trp
 165 170 175
 Ile Ser Thr Gln Leu Ile
 180

<210>963

<211>482

<212>PRT

<213>Chlamydia pneumoniae

<400>963

Ser Gly Cys Val Ala Arg Leu Ile Ala Lys Thr Glu Gln Leu Ser Gly
 1 5 10 15
 Lys Val Tyr His Pro Asp Asp Ser Gly Ala Ala Phe Arg Val Ile Ala
 20 25 30
 Asp His Val Arg Ser Leu Ser Phe Ala Ile Ala Asp Gly Leu Leu Pro
 35 40 45
 Gly Asn Thr Glu Arg Gly Tyr Val Leu Arg Lys Ile Leu Arg Arg Ser
 50 55 60
 Val Asn Tyr Gly Arg Arg Leu Gly Phe Arg Asn Pro Phe Leu Ala Glu
 65 70 75 80
 Ile Val Pro Ser Leu Ala Asp Ala Met Gly Glu Ala Tyr Pro Glu Leu
 85 90 95
 Lys Asn Ser Leu Ser Gln Ile Gln Lys Val Leu Thr Leu Glu Glu Glu
 100 105 110
 Ser Phe Phe Lys Thr Leu Asp Arg Gly Gly Asn Leu Leu Gln Gln Val
 115 120 125
 Leu Lys Ser Ser Ser Ser Ser Cys Ile Ser Gly Glu Asp Ala Phe
 130 135 140
 Lys Leu Lys Asp Thr Tyr Gly Met Pro Ile Asp Glu Ile Ser Leu Leu
 145 150 155 160
 Ala Lys Asp Tyr Asp Tyr Ser Val Asp Met Asp Thr Phe His Lys Leu
 165 170 175
 Glu Gln Glu Ala Lys Glu Arg Ser Arg Lys Asn Val Val Gln Ser Gln
 180 185 190
 Gly Thr Ser Glu Ser Ile Tyr Asn Glu Leu His Leu Thr Ser Glu Phe
 195 200 205
 Ile Gly Tyr Asp His Leu Ser Cys Asp Thr Phe Ile Glu Ala Ile Ile
 210 215 220
 Ser Lys Asp His Ile Val Ser Ser Leu Gln Glu Lys Gln Glu Gly Ala
 225 230 235 240
 Ile Val Leu Lys Val Ser Pro Phe Tyr Ala Glu Lys Gly Gly Gln Val
 245 250 255
 Gly Asp Ser Gly Glu Ile Phe Cys Ser Glu Gly Thr Phe Ile Val Thr
 260 265 270
 His Thr Thr Ser Pro Lys Ala Gly Leu Ile Val His His Gly Arg Ile
 275 280 285
 Ser Gln Gly Ser Leu Thr Val Glu Ala Ala Val Thr Ala Gln Val Asn
 290 295 300
 Arg Tyr Arg Arg Lys Arg Ile Ala Asn Asn His Thr Ala Cys His Leu
 305 310 315 320
 Leu His Lys Ala Leu Glu Ile Thr Leu Gly Asp His Ile Arg Gln Ala
 325 330 335
 Gly Ser Tyr Val Asp Asp Thr Lys Ile Arg Leu Asp Phe Thr His Pro
 340 345 350
 Gln Ala Ile Ser Pro Glu Asp Leu Leu Cys Ile Glu Thr Leu Val Asn
 355 360 365
 Glu Ser Ile Arg Glu Asn Glu Pro Val Asp Ile Arg Glu Ala Leu Tyr
 370 375 380
 Ser Asp Val Met Asn Ser Ser Glu Ile Lys Gln Phe Phe Gly Asp Lys
 385 390 395 400
 Tyr Ser Asp Val Val Arg Val Val Ser Ala Gly His Ser His Glu Leu
 405 410 415
 Cys Gly Gly Thr His Ala Glu Ala Thr Gly Asp Ile Gly Phe Arg
 420 425 430
 Ile Thr Lys Glu His Ala Val Ala Met Gly Ile Arg Arg Ile Glu Ala

435 440 445
Val Thr Gly Glu Lys Ala Glu Ala Thr Val His Gln Gln Ser Glu Val
450 455 460
Leu Glu Glu Ile Val Arg Tyr Tyr Lys Ser Leu Gly Ile Arg Leu Ser
465 470 475 480
Pro Gly

<210>964
<211>129
<212>PRT
<213>Chlamydia pneumoniae
<400>964

Ser Arg Arg Ile Tyr Ala Thr Val His Glu Lys Asp Asp Glu Ala Phe
1 5 10 15
Ala Leu Trp Glu Ala Tyr Leu Pro Thr Asp Arg Ile Phe Arg Leu Thr
20 25 30
Asp Lys Asp Asn Phe Trp Ser Met Ala Asn Thr Gly Pro Cys Gly Tyr
35 40 45
Cys Ser Glu Leu Leu Phe Asp Arg Gly Pro Ser Phe Gly Asn Ala Ser
50 55 60
Ser Pro Leu Asp Asp Thr Asp Gly Glu Arg Phe Leu Glu Tyr Trp Asn
65 70 75 80
Leu Val Phe Met Glu Phe Asn Arg Thr Ser Glu Gly Ser Leu Leu Ala
85 90 95
Leu Pro Asn Lys His Val Asp Thr Gly Ala Gly Leu Glu Arg Leu Val
100 105 110
Ser Leu Ile Ala Gly Thr His Thr Val Phe Glu Ala Asp Val Leu Arg
115 120 125
Asp

<210>965
<211>195
<212>PRT
<213>Chlamydia pneumoniae
<400>965

Met Leu Ser Asn Thr Ile Arg Ser Asn Phe Leu Lys Phe Tyr Ala Asn
1 5 10 15
Arg His His Thr Ile Leu Pro Ser Ser Pro Val Phe Pro His Asn Asp
20 25 30
Pro Ser Ile Leu Phe Thr Asn Ala Gly Met Asn Gln Phe Lys Asp Ile
35 40 45
Phe Leu Asn Lys Glu Lys Val Ser Tyr Ser Arg Ala Thr Thr Ser Gln
50 55 60
Lys Cys Ile Arg Ala Gly Gly Lys His Asn Asp Leu Asp Asn Val Gly
65 70 75 80
His Thr Ser Arg His Leu Thr Phe Phe Glu Met Leu Gly Asn Phe Ser
85 90 95
Phe Gly Asp Tyr Phe Lys Ala Glu Ala Ile Ala Phe Ala Trp Glu Val
100 105 110
Ser Leu Ser Val Phe Asn Phe Asn Pro Glu Gly Phe Thr Leu Pro Tyr
115 120 125
Met Lys Lys Thr Met Lys His Leu Leu Phe Gly Lys His Ile Phe Leu
130 135 140
Gln Ile Val Phe Ser Val Leu Gln Thr Lys Thr Thr Ser Gly Ala Trp
145 150 155 160
Gln Thr Gln Ala Pro Val Ala Ile Val Pro Ser Ser Ser Leu Ile Val
165 170 175
Ala Pro Val Leu Glu Thr Pro Leu Leu Pro Leu Thr Ile Leu Met Glu
180 185 190
Ser Val Ser
195

<210>966
<211>692
<212>PRT

WO 99/27105

<213>Chlamydia pneumoniae

<400>966

Leu Gly Ile Ser Tyr Ser Cys Cys Phe Tyr Ile Glu Gly Leu Gln Gly
 1 5 10 15
 Leu Leu Met Ile Asn Lys Glu Leu Asp Ile Gly Ile Leu Gly Lys Ile
 20 25 30
 Ala Gly Ala Ile Lys Gln Ile Ser Ile Glu Ser Ile Gln Lys Ala Ser
 35 40 45
 Ser Gly His Pro Gly Leu Pro Leu Gly Cys Ala Glu Leu Ala Ala Tyr
 50 55 60
 Leu Tyr Gly Tyr Val Leu Arg Gln Asn Pro Arg Asp Pro His Trp Ile
 65 70 75 80
 Asn Arg Asp Arg Phe Val Leu Ser Ala Gly His Gly Ser Ala Leu Leu
 85 90 95
 Tyr Ser Cys Leu His Leu Ala Gly Phe Asp Val Ser Leu Glu Asp Leu
 100 105 110
 Gln Glu Phe Arg Gln Leu His Ser Arg Thr Pro Gly His Pro Glu Tyr
 115 120 125
 Gly Glu Thr Val Gly Val Glu Ala Thr Thr Gly Pro Leu Gly Gln Gly
 130 135 140
 Leu Gly Asn Ala Val Gly Met Ala Leu Ser Met Lys Met Leu Glu Ser
 145 150 155 160
 Arg Phe Asn Arg Pro Gly His Glu Ile Phe Asn Gly Lys Ile Tyr Cys
 165 170 175
 Leu Ala Gly Asp Gly Cys Phe Met Glu Gly Val Ser His Glu Val Cys
 180 185 190
 Ser Phe Ala Gly Ser Leu Asn Leu Asn Asn Leu Val Val Ile Tyr Asp
 195 200 205
 Tyr Asn Asn Val Val Leu Asp Gly Tyr Leu Asn Glu Ile Ser Val Glu
 210 215 220
 Asp Thr Lys Lys Arg Phe Glu Ala Tyr Gly Trp Glu Tyr Tyr Glu Ile
 225 230 235 240
 Asp Gly Tyr Asp Phe Thr His Ile His Glu Thr Phe Ser Ser Ile Lys
 245 250 255
 Arg Gly Gln Glu Arg Pro Val Leu Val Ile Ala His Thr Ile Ile Gly
 260 265 270
 His Gly Ser Pro Lys Glu Gly Thr Asn Lys Ala His Gly Ser Pro Leu
 275 280 285
 Gly Val Glu Gly Thr His Glu Thr Lys Gln Phe Trp His Leu Pro Glu
 290 295 300
 Glu Lys Phe Phe Val Pro Ala Val Lys Asn Phe Phe Ala His Lys
 305 310 315 320
 Ile Gln Glu Asp Arg Lys Ala Gln Glu Gln Trp Leu Asp Glu Val Arg
 325 330 335
 Val Trp Ser Lys Gln Phe Pro Glu Leu His Glu Glu Phe Val Ala Leu
 340 345 350
 Thr Ser His Lys Leu Pro Lys Asn Leu Glu Ser Leu Val Gln Ser Val
 355 360 365
 Glu Met Pro Asp Ser Ile Ala Gly Arg Ala Ala Ser Asn Lys Leu Ile
 370 375 380
 Gln Val Leu Val Gln His Ile Pro Tyr Leu Ile Gly Gly Ser Ala Asp
 385 390 395 400
 Leu Ser Ser Ser Asp Gly Thr Trp Ile Ala Asn Glu Lys Val Ile His
 405 410 415
 Thr Tyr Asp Phe Ser Gly Arg Asn Ile Lys Tyr Gly Val Arg Glu Phe
 420 425 430
 Gly Met Ala Thr Ile Met Asn Gly Leu Ala Tyr Ser Gln Val Phe Arg
 435 440 445
 Pro Phe Gly Gly Thr Phe Leu Val Phe Ser Asp Tyr Met Arg Asn Ala
 450 455 460
 Ile Arg Leu Ala Ala Leu Ser Lys Leu Pro Val Ile Tyr Gln Phe Thr
 465 470 475 480
 His Asp Ser Ile Phe Val Gly Glu Asp Gly Pro Thr His Gln Pro Val
 485 490 495

Glu Gln Leu Met Ser Leu Arg Ala Ile Pro Gly Leu Tyr Val Ile Arg
 500 505 510
 Pro Ala Asp Ala Asn Glu Val Arg Gly Ala Trp Ile Ala Gly Leu Lys
 515 520 525
 His Thr Gly Pro Thr Val Ile Val Leu Ser Arg Gln Ala Leu Pro Thr
 530 535 540
 Leu Pro Ala Ala His Arg Pro Phe Lys Asp Gly Val Gly Arg Gly Ala
 545 550 555 560
 Tyr Ile Val Leu Lys Glu Ser Gly Glu Lys Pro Asp Tyr Thr Leu Phe
 565 570 575
 Ala Thr Gly Ser Glu Val Ser Leu Ala Leu Ser Val Ala Lys Glu Leu
 580 585 590
 Glu His Leu Asp Lys Gln Val Arg Val Val Ser Phe Pro Cys Trp Glu
 595 600 605
 Leu Phe Glu Ala Gln Asp Val Asp Tyr Lys Gln Ser Ile Val Gly Gly
 610 615 620
 Asp Leu Gly Ile Arg Val Ser Ile Glu Ala Gly Ser Ala Leu Gly Trp
 625 630 635 640
 Tyr Lys Tyr Ile Gly Ser Glu Gly Leu Leu Ser Leu Trp Ile Asp Ser
 645 650 655
 Asp Thr Gln Glu Leu Leu Met Met Tyr Gln Lys Asn Val Ala Leu Leu
 660 665 670
 Gln Ser Lys Ser Phe Arg Gly Phe Ser Leu Asn Ser His Cys Arg Lys
 675 680 685
 Phe Gln Ser Arg
 690

<210>967

<211>312

<212>PRT

<213>Chlamydia pneumoniae

<400>967

Pro Arg Asn Asp Lys Asn Ala Lys Asn Leu Arg Arg Lys His Tyr Lys
 1 5 10 15
 Gly Glu Arg Val Ser Lys His Thr Ser Glu Ser Arg Ile Ala Gln Asp
 20 25 30
 Met Leu Glu Arg Tyr Ser Gly Ser Ser Val Lys Gln Phe Cys Pro Tyr
 35 40 45
 Leu Leu Leu Thr Asn Phe Ser Tyr Tyr Ile Gln Thr Phe Ala Lys Leu
 50 55 60
 His Gly Val Pro Val Phe Glu Gly Ser Met Phe Ser Ala Ala His Ala
 65 70 75 80
 Pro His Leu Lys Thr Ser Ile Leu Asp Phe Lys Leu Gly Ser Pro Gly
 85 90 95
 Ala Ala Leu Thr Ile Asp Leu Cys Ser Phe Leu Pro Asp Leu Lys Ala
 100 105 110
 Ala Leu Met Leu Gly Met Cys Gly Gly Leu Arg Ser His Tyr Gln Val
 115 120 125
 Gly Asp Tyr Phe Val Pro Val Ala Ser Ile Arg Gly Glu Gly Thr Ser
 130 135 140
 Asp Ala Tyr Phe Pro Pro Glu Val Pro Ala Leu Ala Asn Phe Val Val
 145 150 155 160
 Gln Lys Ala Thr Thr Glu Val Leu Glu Asp Lys Lys Ala Asn Tyr His
 165 170 175
 Ile Gly Ile Thr His Thr Thr Asn Ile Arg Phe Trp Glu Phe Asn Lys
 180 185 190
 Lys Phe Arg Lys Lys Leu Tyr Glu Thr Lys Ala Gln Ser Ala Glu Met
 195 200 205
 Glu Cys Ala Thr Leu Phe Ala Ala Gly Tyr Arg Arg Asn Leu Pro Ile
 210 215 220
 Gly Ala Leu Leu Leu Ile Ser Asp Leu Pro Leu Arg Lys Glu Gly Ile
 225 230 235 240
 Lys Thr Lys Ser Ser Gly Asn Phe Ile Phe Asn Thr Tyr Thr Glu Asp
 245 250 255
 His Ile Leu Thr Gly Gln Glu Val Ile Glu Asn Leu Glu Lys Val Met

WO 99/27105

260 265 270
 Leu Lys Arg Ala Ala Ser Asp His Lys Lys Asp Gln Gln Tyr Arg Gly
 275 280 285
 Leu Pro His Met Glu Val Gly Glu Ala Asp Asp Thr Met Ala Ser Gly
 290 295 300
 Ser Glu Thr Ser Asp Ser Asp Tyr
 305 310

<210>968

<211>190

<212>PRT

<213>Chlamydia pneumoniae

<400>968

Met Val Arg Val Ser Thr Ser Glu Phe Arg Val Gly Leu Arg Ile Glu
 1 5 10 15
 Ile Asp Gly Gln Pro Tyr Leu Ile Leu Gln Asn Asp Phe Val Lys Pro
 20 25 30
 Gly Lys Gly Gln Ala Phe Asn Arg Ile Lys Val Lys Asn Phe Leu Thr
 35 40 45
 Gly Arg Val Ile Glu Arg Thr Tyr Lys Ser Gly Glu Ser Val Glu Thr
 50 55 60
 Ala Asp Ile Val Glu Arg Ser Met Arg Leu Leu Tyr Thr Asp Gln Glu
 65 70 75 80
 Gly Ala Thr Phe Met Asp Asp Glu Thr Phe Glu Gln Glu Val Val Phe
 85 90 95
 Trp Glu Lys Leu Glu Asn Ile Arg Gln Trp Leu Leu Glu Asp Thr Ile
 100 105 110
 Tyr Thr Leu Val Leu Tyr Asn Gly Asp Val Val Ala Val Glu Pro Pro
 115 120 125
 Ile Phe Met Glu Leu Ser Ile Ala Glu Thr Ala Pro Gly Val Arg Gly
 130 135 140
 Asp Thr Ala Ser Gly Arg Val Leu Lys Pro Ala Val Thr Asn Thr Gly
 145 150 155 160
 Ala Lys Ile Met Val Pro Ile Phe Ile Asp Glu Gly Glu Leu Val Lys
 165 170 175
 Val Asp Thr Arg Thr Gly Ser Tyr Glu Ser Arg Val Ser Lys
 180 185 190

<210>969

<211>83

<212>PRT

<213>Chlamydia pneumoniae

<400>969

Glu Lys Tyr Phe Phe Phe Thr Val Arg Asn Met Glu Ala Lys Lys Ile
 1 5 10 15
 Lys Glu Leu Ser Lys Glu Ala Gln Leu Leu Lys Lys Leu Arg Glu Lys
 20 25 30
 Ser Arg Val Leu Asp Glu Lys Asn Lys Arg Lys Ala Trp Val Ala Lys
 35 40 45
 Leu Val Ala Met Pro Glu Ser Ile Arg Glu Ile Glu Lys Glu Glu Arg
 50 55 60
 Val Glu Thr Pro Gln Leu Phe Gln Ala Ile Ala Glu Lys Ile Leu Glu
 65 70 75 80
 Glu Gly Val

<210>970

<211>314

<212>PRT

<213>Chlamydia pneumoniae

<400>970

Asn Phe Ser Leu Asp Ser Asn Thr Val Asp Gln Lys Asn Lys Ser Asn
 1 5 10 15
 Pro Arg Pro Met Gln Glu Lys Pro Arg His Val His Arg Ile Ile His
 20 25 30
 Ile Ser Asp Val His Phe His Val Leu Pro Val Asn Pro Val His Cys
 35 40 45

Phe Asn Lys Arg Leu Lys Gly Leu Leu Arg Lys Val Phe Gly Leu Val
 50 55 60
 His Phe Gln Ala Thr Thr Ile Gly Gln Arg Phe Pro Lys Val Val Arg
 65 70 75 80
 Ser Leu Gly Ala Asp Ser Val Cys Ile Thr Gly Asp Phe Ser Leu Thr
 85 90 95
 Ala Met Asp Gly Glu Phe Leu Leu Ala Lys His Phe Val Glu Thr Leu
 100 105 110
 Ala Lys His Ser Ser Val Tyr Leu Leu Pro Gly Asn His Asp Val Tyr
 115 120 125
 Thr Leu Lys Ser Leu Ala Gln Gln Thr Phe Tyr Thr His Phe Pro Asn
 130 135 140
 Asp Gln Leu Gln Gln Asn Lys Val Ser Phe His Lys Ile Thr Asp His
 145 150 155 160
 Trp Trp Leu Ile Leu Leu Asp Cys Ser Cys Leu Asn Gly Trp Phe Ser
 165 170 175
 Ala Asn Gly Val Val His Leu Ala Gln Ile Ser Ala Ile Glu Thr Phe
 180 185 190
 Leu Leu Ser Leu Ser Pro Glu Glu Asn Val Ile Ile Ala Asn His Tyr
 195 200 205
 Pro Leu Leu Ser Ser Gln Asn Pro Ser His Asp Leu Ile Asn Asn Thr
 210 215 220
 His Leu Gln Asn Val Leu Lys Lys Tyr Pro Lys Val Arg Leu Tyr Leu
 225 230 235 240
 His Gly His Glu His Gln Ala Ala Val Tyr Asn Cys Ala Asp Thr Ser
 245 250 255
 Pro Ser Tyr Ile Leu Asn Ser Gly Ser Ile Ser Leu Pro Thr Asn Ser
 260 265 270
 Arg Phe His Val Ile Asp Leu Tyr Pro Glu Lys Tyr Gln Val His Thr
 275 280 285
 Met Ile Leu Lys Asn Leu Leu Asp Phe Asp Ala Pro Leu Glu Ile Ala
 290 295 300
 Asn Glu Ala Thr Trp Asp Cys Gln Lys Leu
 305 310

<210>971

<211>519

<212>PRT

<213>Chlamydia pneumoniae

<400>971

Met Ser Glu Gln Glu Lys Leu Ser Asn Tyr Asn Ala Asp Lys Lys Leu
 1 5 10 15
 Phe Ser Gly Ile Asp Lys Leu Phe Gln Ile Val Lys Gly Ser Tyr Gly
 20 25 30
 Pro Lys Gln Ser Leu Ser Pro Thr Ser Phe Phe Lys Glu Arg Gly Phe
 35 40 45
 Tyr Ala Ile Ser Gln Thr Glu Leu Ser Asn Ser Tyr Glu Asn Leu Gly
 50 55 60
 Val Asp Phe Ala Lys Ala Met Val Asn Lys Ile His Lys Glu His Ser
 65 70 75 80
 Asp Gly Ala Thr Thr Gly Leu Ile Leu Leu His Ala Ile Leu Gln Glu
 85 90 95
 Ser Tyr Ala Ala Leu Glu Lys Gly Ile Ser Thr His Lys Leu Ile Ala
 100 105 110
 Ser Leu Lys Leu Gln Gly Glu Lys Leu Gln Glu Ala Leu Gln Gln Gln
 115 120 125
 Ser Trp Pro Ile Lys Asp Ala Leu Lys Val Arg Asn Ile Ile Phe Ser
 130 135 140
 Ser Leu His Met Pro Thr Ile Ala Asp His Phe Tyr Asn Ala Phe Ser
 145 150 155 160
 Val Val Gly Pro Glu Gly Leu Ile Ser Ile Thr Lys Glu Arg Glu Asn
 165 170 175
 Asp Lys Thr Ser Met Asp Val Phe Gln Gly Phe Lys Ile Pro Ala Gly
 180 185 190
 Tyr Ala Ser Thr Tyr Phe Val Ser Asp Thr Ala Ser Arg Leu Thr Arg

WO 99/27105

195 200 205
 Ile Ala His Pro Leu Ile Leu Ile Thr Asp Arg Lys Ile Ser Met Ile
 210 215 220
 His Ser Leu Leu Pro Leu Leu Gln Glu Ile Ser Glu Gln Asn Gln His
 225 230 235 240
 Leu Ile Ile Phe Cys Glu Asp Ile Asp Pro Asp Val Leu Ala Thr Leu
 245 250 255
 Val Val Asn Lys Leu Gln Gly Leu Leu Gln Val Thr Val Val Thr Ile
 260 265 270
 Pro Gln Leu Ser Thr Thr Asn Gln Glu Leu Ala Glu Asp Ile Ala Leu
 275 280 285
 Phe Thr Gly Thr His Ile Cys Pro Cys Gln Glu Ala Ser His Val Leu
 290 295 300
 Ala Pro Glu Met Val Thr Leu Gly Ser Cys Leu Ser Ile Glu Ile Ser
 305 310 315 320
 Glu Ser Gln Thr Thr Leu Ile Gly Gly Leu His Ile Pro Glu Val Leu
 325 330 335
 Thr Leu Lys Thr Arg Gln Leu Ala Glu Glu Ile Arg Thr Thr Ser Cys
 340 345 350
 Leu Glu Thr Lys Lys Arg Leu Ile Lys Ser Thr Asn Arg Leu Gln Ser
 355 360 365
 Ser Val Ala Ile Leu Pro Thr Asp Glu Asp Asn Glu Pro Leu Tyr Thr
 370 375 380
 Leu Ala Leu Lys Ile Met Glu Ser Ala Leu Ser Arg Gly Tyr Val Pro
 385 390 395 400
 Gly Gly Gly Val Ala Leu Phe Tyr Ala Ser Leu Thr Leu Gly Thr Pro
 405 410 415
 Lys Asp Asp Ala Asp Glu Asn Ser Ile Ala Ile Ser Leu Leu Gln Lys
 420 425 430
 Ala Cys Cys Ala Pro Leu Lys Leu Leu Ala Thr Asn Ala Asp Leu Asp
 435 440 445
 Gly Asp Ala Val Ile Ala Lys Leu Ser Ser Leu Gly Thr Thr Ser Leu
 450 455 460
 Gly Ile Ser Val Phe Ser Arg Glu Ile Glu Asp Leu Ile Ala Gly Gly
 465 470 475 480
 Ile Leu Asp Ser Leu Ala Thr Thr Ser Thr Ile Leu Ala Gln Ala Leu
 485 490 495
 Asp Thr Ala Ile Leu Val Leu Ser Ser Lys Ile Leu Ile Leu Glu Asn
 500 505 510
 Gln Tyr Glu Ile Ser Thr Leu
 515

<210>972

<211>447

<212>PRT

<213>Chlamydia pneumoniae

<400>972

Met Arg Ala Met Leu Leu Glu Asp Trp Val Ser Leu Met Leu Ser Asp
 1 5 10 15
 Val Ser Cys Pro Lys Cys Asp Lys Lys Ile Thr Gly Phe Ala Ile Asp
 20 25 30
 Ser Gln Lys Val Gln Pro Gly Asp Leu Phe Phe Ala Leu Pro Gly Asn
 35 40 45
 Ala Thr Asp Gly His Gln Phe Leu Lys His Ala Ala Thr Ala Gly Ala
 50 55 60
 Val Ala Ala Val Val Ser His Asp Tyr Gln Gly Asp Ser Phe Gly Leu
 65 70 75 80
 Glu Leu Ile Arg Val Asp Asp Thr Lys Ser Ala Leu Gln Glu Ala Gly
 85 90 95
 Ser Asn Gln Cys Asn Leu Phe Gln Gly Thr Leu Val Gly Ile Thr Gly
 100 105 110
 Ser Val Gly Lys Thr Thr Thr Lys Glu Phe Ser Lys Thr Ile Leu Ser
 115 120 125
 Ser Ile Tyr Lys Thr His Ala Ser Pro Lys Ser Tyr Asn Ser Gln Leu
 130 135 140

Thr Val Pro Leu Ser Leu Leu Met Ala Glu Gly Asp Glu Asp Val Met
 145 150 155 160
 Ile Leu Glu Met Gly Val Ser Glu Pro Gly Asn Met Gln Asp Leu Leu
 165 170 175
 Arg Ile Val Gln Pro Glu Ile Ala Val Ile Thr His Ile Asn Asp Gln
 180 185 190
 His Ala Met His Phe Pro Gln Gly Ile Gln Glu Ile Leu Lys Glu Lys
 195 200 205
 Ser Tyr Ile Leu Gln Lys Ser Lys Leu Gln Leu Leu Pro Lys Asp Ser
 210 215 220
 Pro Tyr Tyr Leu Asp Leu Arg Ser Cys Ser Pro Thr Ala Glu Lys Phe
 225 230 235 240
 Ser Phe Ser Phe Asn Asp Pro Leu Ala Asp Phe Cys Tyr Lys Ala Ile
 245 250 255
 Ser Gly Asp Ser Val Val Ile Gln Thr Pro Glu Glu Asn Tyr Cys Leu
 260 265 270
 Pro Ile Ala Phe Ser Tyr Lys Pro Ala Tyr Thr Asn Leu Leu Ile Ala
 275 280 285
 Val Ala Leu Ser Trp Ile Leu Glu Val Pro Glu Glu Gly Val Ile Arg
 290 295 300
 Ser Leu Pro Glu Leu Lys Leu Pro Pro Met Arg Phe Glu His Ser Met
 305 310 315 320
 Arg Asn Gly Met Gln Val Ile Asn Asp Ala Tyr Asn Ala Cys Pro Glu
 325 330 335
 Ala Met Ile Ala Ala Leu Asp Ala Leu Pro Leu Pro Ser Asp Gly Gly
 340 345 350
 Lys Ile Ile Leu Ile Leu Gly His Met Ala Glu Leu Gly Arg Tyr Ser
 355 360 365
 Glu Glu Gly His Ala Leu Val Ala Glu Lys Ala Ala Ser Arg Gly Asp
 370 375 380
 Met Ile Phe Phe Ile Gly Glu Lys Trp Ile Pro Val Gln Ser Val Leu
 385 390 395 400
 Lys Ser Tyr Ser Cys Glu Val Ser Phe Phe Ser Ser Ala Gln Asp Val
 405 410 415
 Lys Asp Ile Leu Lys Gln Val Ala Arg Tyr Gly Asp Val Ile Leu Leu
 420 425 430
 Lys Gly Ser Arg Ala Leu Ala Leu Glu Ser Leu Leu Ala Cys Phe
 435 440 445

<210>973

<211>349

<212>PRT

<213>Chlamydia pneumoniae

<400>973

Met Ile Pro Leu Ile Pro Met Phe Leu Lys Gln Ser Leu Phe Phe Ser
 1 5 10 15
 Leu Ala Leu Thr Gly Met Thr Thr Leu Val Leu Thr Val Ser Leu Gly
 20 25 30
 Val Pro Val Met Lys Trp Leu Lys Arg Lys Asn Tyr Arg Asp Tyr Ile
 35 40 45
 His Lys Glu Tyr Cys Glu Lys Leu Glu Met Leu His Lys Asp Lys Ala
 50 55 60
 Glu Val Pro Thr Gly Gly Gly Val Leu Leu Phe Ile Ser Leu Ile Ala
 65 70 75 80
 Ser Leu Leu Val Trp Leu Pro Trp Gly Lys Phe Ser Thr Trp Phe Phe
 85 90 95
 Ile Ile Leu Leu Thr Cys Tyr Ala Gly Leu Gly Trp Tyr Asp Asp Arg
 100 105 110
 Ile Lys Ile Lys Arg Lys Gln Gly His Gly Leu Lys Ala Lys His Lys
 115 120 125
 Phe Met Val Gln Ile Ala Ile Ala Ala Phe Thr Leu Ile Ala Leu Pro
 130 135 140
 Tyr Ile Tyr Gly Ser Thr Glu Pro Leu Trp Thr Leu Lys Ile Pro Phe
 145 150 155 160
 Met Glu Gly Met Leu Ser Leu Pro Phe Trp Leu Gly Lys Val Phe Cys

WO 99/27105

165 170 175
 Leu Gly Leu Ala Leu Val Ala Ile Ile Gly Thr Ser Asn Ala Val Asn
 180 185 190
 Leu Thr Asp Gly Leu Asp Gly Leu Ala Ala Gly Thr Met Ser Phe Ala
 195 200 205
 Ala Leu Gly Phe Ile Phe Val Ala Leu Arg Ser Ser Thr Ile Pro Ile
 210 215 220
 Ala Gln Asp Val Ala Tyr Val Leu Ala Ala Leu Val Gly Ala Cys Ile
 225 230 235 240
 Gly Phe Leu Trp Tyr Asn Gly Phe Pro Ala Gln Leu Phe Met Gly Asp
 245 250 255
 Thr Gly Ser Leu Leu Leu Gly Gly Leu Leu Gly Ser Cys Ala Val Met
 260 265 270
 Leu Arg Ala Glu Cys Ile Leu Val Val Ile Gly Gly Val Phe Val Ala
 275 280 285
 Glu Ala Gly Ser Val Ile Leu Gln Val Leu Ser Cys Arg Leu Arg Lys
 290 295 300
 Lys Arg Leu Phe Leu Cys Ser Pro Leu His His His Tyr Glu Tyr Gln
 305 310 315 320
 Gly Leu Pro Glu Thr Lys Ile Val Met Arg Phe Trp Ile Phe Ser Phe
 325 330 335
 Val Cys Ala Gly Leu Gly Ile Ala Ala Val Leu Trp Arg
 340 345

<210>974

<211>419

<212>PRT

<213>Chlamydia pneumoniae

<400>974

Met Arg Arg Ser Arg Tyr Ser Gly Cys Leu Met Glu Ile Asp Met Cys
 1 5 10 15
 Gln Arg Ile Leu Ile Leu Gly Thr Gly Ile Thr Gly Lys Ser Val Ala
 20 25 30
 Arg Phe Leu Tyr Gln Gln Gly His Tyr Leu Ile Gly Ala Asp Asn Ser
 35 40 45
 Leu Glu Ser Leu Ile Ser Val Asp His Leu His Asp Arg Leu Leu Met
 50 55 60
 Gly Ala Ser Glu Phe Pro Glu Asn Ile Asp Leu Val Ile Arg Ser Pro
 65 70 75 80
 Gly Ile Lys Pro Tyr His Pro Trp Val Glu Gln Ala Val Ser Leu Lys
 85 90 95
 Ile Pro Val Val Thr Asp Ile Gln Val Ala Leu Lys Thr Pro Glu Phe
 100 105 110
 Gln Arg Tyr Pro Ser Phe Gly Ile Thr Gly Ser Asn Gly Lys Thr Thr
 115 120 125
 Thr Thr Leu Phe Leu Thr His Leu Leu Asn Thr Leu Gly Ile Pro Ala
 130 135 140
 Ile Ala Met Gly Asn Ile Gly Leu Pro Ile Leu Asp His Met Gly Gln
 145 150 155 160
 Pro Gly Val Arg Val Val Glu Ile Ser Ser Phe Gln Leu Ala Thr Gln
 165 170 175
 Glu Glu His Ile Pro Ala Leu Ser Gly Ser Val Phe Leu Asn Phe Ser
 180 185 190
 Arg Asn His Leu Asp Tyr His Arg Asn Leu Asp Ala Tyr Phe Asp Ala
 195 200 205
 Lys Leu Arg Ile Gln Lys Cys Leu Arg Gln Asp Lys Thr Phe Trp Val
 210 215 220
 Trp Glu Glu Cys Ser Leu Gly Asn Ser Tyr Gln Ile Tyr Ser Glu Glu
 225 230 235 240
 Ile Glu Glu Ile Leu Asp Lys Gly Asp Ala Leu Lys Pro Ile Tyr Leu
 245 250 255
 His Asp Arg Asp Asn Tyr Cys Ala Ala Tyr Ala Leu Ala Asn Glu Val
 260 265 270
 Gly Trp Val Ser Pro Glu Gly Phe Leu Lys Ala Ile Arg Thr Phe Glu
 275 280 285

Lys Pro Ala His Arg Leu Glu Tyr Leu Gly Lys Lys Asp Gly Val His
 290 295 300
 Tyr Ile Asn Asp Ser Lys Ala Thr Thr Val Thr Ala Val Glu Lys Ala
 305 310 315 320
 Leu Met Ala Val Gly Lys Asp Val Ile Val Ile Leu Gly Gly Lys Asp
 325 330 335
 Lys Gly Gly Asp Phe Pro Ala Leu Ala Ser Val Leu Ser Gln Thr Thr
 340 345 350
 Lys His Val Ile Ala Met Gly Glu Cys Arg Gln Thr Ile Ala Asp Ala
 355 360 365
 Leu Ser Glu Lys Ile Pro Leu Thr Leu Ser Lys Asp Leu Gln Glu Ala
 370 375 380
 Val Ser Ile Ala Gln Thr Ile Ala Gln Glu Gly Asp Thr Val Leu Leu
 385 390 395 400
 Ser Pro Gly Cys Ala Xaa Leu Ile Ser Phe Lys Val Leu Lys Asn Ala
 405 410 415
 Xaa Leu Leu

<210>975

<211>252

<212>PRT

<213>Chlamydia pneumoniae

<400>975

Arg Thr Arg Xaa Tyr Phe Lys Leu Leu Ile Arg Arg Asn Ala Gly Ser
 1 5 10 15
 Glu Val Asn Met Asn Arg Arg Asp Met Val Ile Thr Ala Val Val Val
 20 25 30
 Asn Ala Ile Leu Leu Val Ala Leu Phe Val Thr Ser Lys Arg Ile Gly
 35 40 45
 Val Lys Asp Tyr Asp Glu Gly Phe Arg Asn Phe Ala Ser Ser Lys Val
 50 55 60
 Thr Gln Ala Val Val Ser Glu Glu Lys Val Ile Glu Lys Pro Val Val
 65 70 75 80
 Ala Glu Val Pro Ser Arg Pro Ile Ala Lys Glu Thr Leu Ala Ala Gln
 85 90 95
 Phe Ile Glu Ser Lys Pro Val Ile Val Thr Thr Pro Pro Val Pro Val
 100 105 110
 Val Ser Glu Thr Pro Glu Val Pro Thr Val Ala Val Pro Pro Gln Pro
 115 120 125
 Val Arg Glu Thr Val Lys Glu Glu Gln Ala Pro Tyr Ala Thr Val Val
 130 135 140
 Val Lys Lys Gly Asp Phe Leu Glu Arg Ile Ala Arg Ala Asn His Thr
 145 150 155 160
 Thr Val Ala Lys Leu Met Gln Ile Asn Asp Leu Thr Thr Thr Gln Leu
 165 170 175
 Lys Ile Gly Gln Val Ile Lys Val Pro Thr Ser Gln Asp Val Ser Asn
 180 185 190
 Glu Lys Thr Pro Gln Thr Gln Thr Ala Asn Pro Glu Asn Tyr Tyr Ile
 195 200 205
 Val Gln Glu Gly Asp Ser Pro Trp Thr Ile Ala Leu Arg Asn His Ile
 210 215 220
 Arg Leu Asp Asp Leu Leu Lys Met Asn Asp Leu Asp Glu Tyr Lys Ala
 225 230 235 240
 Arg Arg Leu Lys Pro Gly Asp Gln Leu Arg Ile Arg
 245 250

<210>976

<211>385

<212>PRT

<213>Chlamydia pneumoniae

<400>976

Met Lys Trp Phe Val Ile Ser Cys Leu Leu Gly Ile Phe Ser Leu Gly
 1 5 10 15
 Leu Ile Met Val Phe Glu Thr Ser Ser Ala Glu Val Leu Asp Arg Ser
 20 25 30

WO 99/27105

Leu Glu Cys Ser Thr His Lys Ala Leu Ile Arg Gln Val Thr Tyr Leu
 35 40 45
 Ile Leu Gly Leu Gly Val Ala Ser Leu Leu Tyr Met Met Glu Trp Arg
 50 55 60
 Asp Phe Leu Lys Ile Ser Pro Val Leu Leu Ser Gly Ala Ala Leu Ala
 65 70 75 80
 Leu Ile Cys Val Phe Ile Pro Gly Leu Gly Ile Cys Arg Asn Gly Ala
 85 90 95
 Arg Arg Trp Leu Gly Phe Gly Gln Leu Thr Ile Gln Pro Ser Glu Phe
 100 105 110
 Val Lys Tyr Leu Val Pro Ile Val Ala Leu Tyr Phe Leu Thr Phe Ser
 115 120 125
 Ser Leu Tyr Gln Lys Gln Leu Lys Met Phe Leu Lys Leu Thr Ala Ile
 130 135 140
 Leu Phe Ile Pro Ile Leu Leu Ile Ala Ile Glu Pro Asp Asn Gly Ser
 145 150 155 160
 Ala Ala Val Ile Ser Ala Ser Leu Ile Pro Val Phe Ile Met Thr Ser
 165 170 175
 Val Arg Leu Arg Tyr Trp Leu Leu Pro Leu Leu Cys Val Leu Ile Ala
 180 185 190
 Gly Gly Ala Leu Ala Tyr Arg Met Pro Tyr Val Arg Tyr Arg Leu Asn
 195 200 205
 Val Tyr Leu His Pro Glu Leu Asp Ile Lys Gly Arg Gly His Gln Pro
 210 215 220
 Tyr Gln Ala Lys Ile Ala Ala Gly Ser Gly Lys Leu Leu Gly Lys Gly
 225 230 235 240
 Pro Gly Ala Ser Leu Gln Lys Leu Thr Tyr Leu Pro Glu Ala Gln Asn
 245 250 255
 Asp Tyr Ile Ala Ala Ile Tyr Ala Glu Glu Phe Gly Phe Leu Gly Met
 260 265 270
 Leu Val Leu Ile Leu Leu Tyr Met Cys Phe Val Tyr Gly Gly Tyr Ala
 275 280 285
 Ile Ala Ile Lys Ala Ser Ser Leu Glu Gly Ala Ala Leu Ala Met Val
 290 295 300
 Ile Thr Leu Ile Ile Ser Met Gln Ala Phe Met Asn Leu Gly Val Val
 305 310 315 320
 Ser Gly Leu Leu Pro Ser Lys Gly Val Asn Leu Pro Phe Phe Ser Gln
 325 330 335
 Gly Gly Ser Ser Leu Ile Ala Asn Met Cys Gly Val Thr Leu Leu Leu
 340 345 350
 Lys Val Tyr Asp Glu Glu Asn Ser Lys Ser Ser Leu Gly Cys Arg Arg
 355 360 365
 Phe Arg Arg Pro His Cys Pro Ser Ser Leu Gly Lys Gly Ser Phe Phe
 370 375 380

Ser

385

<210>977

<211>357

<212>PRT

<213>Chlamydia pneumoniae

<400>977

Met Met Lys Lys Ile Arg Lys Val Ala Leu Ala Val Gly Gly Ser Gly
 1 5 10 15

Gly His Ile Val Pro Ala Leu Ser Val Lys Glu Ala Phe Ser Arg Glu
 20 25 30

Gly Ile Asp Val Leu Leu Leu Gly Lys Gly Leu Lys Asn His Pro Ser
 35 40 45

Leu Gln Gln Gly Ile Ser Tyr Arg Glu Ile Pro Ser Gly Leu Pro Thr
 50 55 60

Val Leu Asn Pro Ile Lys Ile Met Ser Arg Thr Leu Ser Leu Cys Ser
 65 70 75 80

Gly Tyr Leu Lys Ala Arg Lys Glu Leu Lys Ile Phe Asp Pro Asp Leu
 85 90 95

Val Ile Gly Phe Gly Ser Tyr His Ser Leu Pro Val Leu Leu Ala Gly

100	105	110
Leu Ser His Lys Ile Pro Leu Phe Leu His Glu Gln Asn Leu Val Pro		
115	120	125
Gly Lys Val Asn Gln Leu Phe Ser Arg Tyr Ala Arg Gly Ile Gly Val		
130	135	140
Asn Phe Ser Pro Val Thr Lys His Phe Arg Cys Pro Ala Glu Glu Val		
145	150	155
Phe Leu Pro Lys Arg Ser Phe Ser Leu Gly Ser Pro Met Met Lys Arg		
165	170	175
Cys Thr Asn His Thr Pro Thr Ile Cys Val Val Gly Gly Ser Gln Gly		
180	185	190
Ala Gln Ile Leu Asn Thr Cys Val Pro Gln Ala Leu Val Lys Leu Val		
195	200	205
Asn Lys Tyr Pro Asn Met Tyr Val His His Ile Val Gly Pro Lys Ser		
210	215	220
Asp Val Met Lys Val Gln His Val Tyr Asn Arg Gly Glu Val Leu Cys		
225	230	235
Cys Val Lys Pro Phe Glu Glu Gln Leu Leu Asp Val Leu Leu Ala Ala		
245	250	255
Asp Leu Val Ile Ser Arg Ala Gly Ala Thr Ile Leu Glu Glu Ile Leu		
260	265	270
Trp Ala Lys Val Pro Gly Ile Leu Ile Pro Tyr Pro Gly Ala Tyr Gly		
275	280	285
His Gln Glu Val Asn Ala Lys Phe Phe Val Asp Val Leu Glu Gly Gly		
290	295	300
Thr Met Ile Leu Glu Lys Glu Leu Thr Glu Lys Leu Leu Val Glu Lys		
305	310	315
Val Thr Phe Ala Leu Asp Ser His Asn Arg Glu Lys Gln Arg Asn Ser		
325	330	335
Leu Ala Ala Tyr Ser Gln Gln Arg Ser Thr Lys Thr Phe His Ala Phe		
340	345	350
Ile Cys Glu Cys Leu		
355		

<210>978

<211>812

<212>PRT

<213>Chlamydia pneumoniae

<400>978

Val His Tyr Met Lys Gly Thr Pro Gln Tyr His Phe Ile Gly Ile Gly		
1	5	10
Gly Ile Gly Met Ser Ala Leu Ala His Ile Leu Leu Asp Arg Gly Tyr		
20	25	30
Glu Val Ser Gly Ser Asp Leu Tyr Glu Ser Tyr Thr Ile Glu Ser Leu		
35	40	45
Lys Ala Lys Gly Ala Arg Cys Phe Ser Gly His Asp Ser Ser His Val		
50	55	60
Pro His Asp Ala Val Val Tyr Ser Ser Ser Ile Ala Pro Asp Asn		
65	70	75
Val Glu Tyr Leu Thr Ala Ile Gln Arg Ser Ser Arg Leu Leu His Arg		
85	90	95
Ala Glu Leu Leu Ser Gln Leu Met Glu Gly Tyr Glu Ser Ile Leu Val		
100	105	110
Ser Gly Ser His Gly Lys Thr Gly Thr Ser Ser Leu Ile Arg Ala Ile		
115	120	125
Phe Gln Glu Ala Gln Lys Asp Pro Ser Tyr Ala Ile Gly Gly Leu Ala		
130	135	140
Ala Asn Cys Leu Asn Gly Tyr Ser Gly Ser Ser Lys Ile Phe Val Ala		
145	150	155
Glu Ala Asp Glu Ser Asp Gly Ser Leu Lys His Tyr Thr Pro Arg Ala		
165	170	175
Val Val Ile Thr Asn Ile Asp Asn Glu His Leu Asn Asn Tyr Ala Gly		
180	185	190
Asn Leu Asp Asn Leu Val Gln Val Ile Gln Asp Phe Ser Arg Lys Val		
195	200	205

WO 99/27105

Thr Asp Leu Asn Lys Val Phe Tyr Asn Gly Asp Cys Pro Ile Leu Lys
 210 215 220
 Gly Asn Val Gln Gly Ile Ser Tyr Gly Tyr Ser Pro Glu Cys Gln Leu
 225 230 235 240
 His Ile Val Ser Tyr Asn Gln Lys Ala Trp Gln Ser His Phe Ser Phe
 245 250 255
 Thr Phe Leu Gly Gln Glu Tyr Gln Asp Ile Glu Leu Asn Leu Pro Gly
 260 265 270
 Gln His Asn Ala Ala Asn Ala Ala Ala Cys Gly Val Ala Leu Thr
 275 280 285
 Phe Gly Ile Asp Ile Asn Ile Ile Arg Lys Ala Leu Lys Lys Phe Ser
 290 295 300
 Gly Val His Arg Arg Leu Glu Arg Lys Asn Ile Ser Glu Ser Phe Leu
 305 310 315 320
 Phe Leu Glu Asp Tyr Ala His His Pro Val Glu Val Ala His Thr Leu
 325 330 335
 Arg Ser Val Arg Asp Ala Val Gly Leu Arg Arg Val Ile Ala Ile Phe
 340 345 350
 Gln Pro His Arg Phe Ser Arg Leu Glu Glu Cys Leu Gln Thr Phe Pro
 355 360 365
 Lys Ala Phe Gln Glu Ala Asp Glu Val Ile Leu Thr Asp Val Tyr Ser
 370 375 380
 Ala Gly Glu Ser Pro Arg Glu Ser Ile Ile Leu Ser Asp Leu Ala Glu
 385 390 395 400
 Gln Ile Arg Lys Ser Ser Tyr Val His Cys Cys Tyr Val Pro His Gly
 405 410 415
 Asp Ile Val Asp Tyr Leu Arg Asn Tyr Ile Arg Ile His Asp Val Cys
 420 425 430
 Val Ser Leu Gly Ala Gly Asn Ile Tyr Thr Ile Gly Glu Ala Leu Lys
 435 440 445
 Asp Phe Asn Pro Lys Lys Leu Ser Ile Gly Leu Val Cys Gly Gly Lys
 450 455 460
 Ser Cys Glu His Asp Ile Ser Leu Leu Ser Ala Gln His Val Ser Lys
 465 470 475 480
 Tyr Ile Ser Pro Glu Phe Tyr Asp Val Ser Tyr Phe Ile Ile Asn Arg
 485 490 495
 Gln Gly Leu Trp Arg Thr Gly Lys Asp Phe Pro His Leu Ile Glu Glu
 500 505 510
 Thr Gln Gly Asp Ser Pro Leu Ser Ser Glu Ile Ala Ser Ala Leu Ala
 515 520 525
 Lys Val Asp Cys Leu Phe Pro Val Leu His Gly Pro Phe Gly Glu Asp
 530 535 540
 Gly Thr Ile Gln Gly Phe Phe Glu Ile Leu Gly Lys Pro Tyr Ala Gly
 545 550 555 560
 Pro Ser Leu Ser Leu Ala Ala Thr Ala Met Asp Lys Leu Leu Thr Lys
 565 570 575
 Arg Ile Ala Ser Ala Val Gly Val Pro Val Val Pro Tyr Gln Pro Leu
 580 585 590
 Asn Leu Cys Phe Trp Lys Arg Asn Pro Glu Leu Cys Ile Gln Asn Leu
 595 600 605
 Ile Glu Thr Phe Ser Phe Pro Met Ile Val Lys Thr Ala His Leu Gly
 610 615 620
 Ser Ser Ile Gly Ile Phe Leu Val Arg Asp Lys Glu Glu Leu Gln Glu
 625 630 635 640
 Lys Ile Ser Glu Ala Phe Leu Tyr Asp Thr Asp Val Phe Val Glu Glu
 645 650 655
 Ser Arg Leu Gly Ser Arg Glu Ile Glu Val Ser Cys Ile Gly His Ser
 660 665 670
 Ser Ser Trp Tyr Cys Met Ala Gly Pro Asn Glu Arg Cys Gly Ala Ser
 675 680 685
 Gly Phe Ile Asp Tyr Gln Glu Lys Tyr Gly Phe Asp Gly Ile Asp Cys
 690 695 700
 Ala Lys Ile Ser Phe Asp Leu Gln Leu Ser Gln Glu Ser Leu Asp Cys
 705 710 715 720

Val Arg Glu Leu Ala Glu Arg Val Tyr Arg Ala Met Gln Gly Lys Gly
725 730 735
Ser Ala Arg Ile Asp Phe Phe Leu Asp Glu Glu Gly Asn Tyr Trp Leu
740 745 750
Ser Glu Val Asn Pro Ile Pro Gly Met Thr Ala Ala Ser Pro Phe Leu
755 760 765
Gln Ala Phe Val His Ala Gly Trp Thr Gln Glu Gln Ile Val Asp His
770 775 780
Phe Ile Ile Asp Ala Leu His Lys Phe Asp Lys Gln Gln Thr Ile Glu
785 790 795 800
Gln Ala Phe Thr Lys Glu Gln Asp Leu Val Lys Arg
805 810

<210>979

<211>192

<212>PRT

<213>Chlamydia pneumoniae

<400>979

Leu Val Asn Asp Ser Gln Leu Ser Arg Glu Ala Ser Ala Phe Arg Leu
1 5 10 15
Asp Ile Asp Phe Phe Ile Leu Asn Ile Tyr Pro Phe Phe Arg Asn Phe
20 25 30
Lys Asn Ile Glu Leu Cys Phe Phe Leu Ser Ile Ser Gln Phe Asn Leu
35 40 45
Asp Phe Met Glu Glu Phe Val Ala Tyr Ile Val Lys Asn Leu Val Thr
50 55 60
Asn Pro Glu Ala Val Glu Ile Arg Ser Ile Glu Asp Glu Asp Asn Glu
65 70 75 80
Ser Ile Lys Leu Glu Ile Arg Val Ala Ala Glu Asp Ile Gly Lys Ile
85 90 95
Ile Gly Arg Arg Gly Asn Thr Ile His Ala Leu Arg Thr Ile Leu Arg
100 105 110
Arg Val Cys Ser Arg Leu Lys Lys Lys Val Gln Ile Asp Leu Val Gln
115 120 125
Pro Glu Asn Gly Thr Asp Val Ile Ala Asp Gln Asp Tyr Ile Cys Asp
130 135 140
Asn Asp Ser Ser Asn Ser Thr Glu Asp Thr Phe Gly Glu Ser Asp Thr
145 150 155 160
Cys Cys Ser Gly His Cys His Tyr Asp Glu Asp Leu Asn Gln Glu Glu
165 170 175
Gln Glu Glu Gly Asn Met His His Ser Cys Glu Cys Ser Asn His His
180 185 190

<210>980

<211>120

<212>PRT

<213>Chlamydia pneumoniae

<400>980

Lys Phe Leu Ile Ile Lys Ser Ser Met Thr Ala Val Leu Ile Leu Thr
1 5 10 15
Ser Phe Pro Ser Glu Glu Ser Ala Arg Ser Leu Ala Arg His Leu Ile
20 25 30
Thr Glu Arg Leu Ala Ser Cys Val His Val Phe Pro Lys Gly Thr Ser
35 40 45
Thr Tyr Leu Trp Glu Gly Lys Leu Cys Glu Ser Glu Glu His His Ile
50 55 60
Gln Ile Lys Ser Ile Asp Ile Arg Phe Ser Glu Ile Cys Leu Ala Ile
65 70 75 80
Gln Glu Phe Ser Gly Tyr Glu Val Pro Glu Val Leu Leu Phe Pro Ile
85 90 95
Glu Asn Gly Asp Pro Arg Tyr Leu Asn Trp Leu Thr Ile Leu Ser Tyr
100 105 110
Pro Glu Lys Pro Pro Leu Ser Asp
115 120

<210>981

<211>213

WO 99/27105

<212>PRT

<213>Chlamydia pneumoniae

<400>981

Ile Leu Ala Ile Leu Phe Met Ile Ile Ile Lys Asn Asn Glu Leu Met
 1 5 10 15
 Ile Arg Arg Phe Phe Lys Thr Leu Phe Pro Pro Gly Pro Gln Tyr Ser
 20 25 30
 Leu Cys Tyr Ala Ser Ile Leu Ile Val Leu Ser Ser Leu Val Cys Val
 35 40 45
 Pro Thr Phe Cys Trp Leu Phe Leu Pro Glu Leu Ser Leu Ser Lys Phe
 50 55 60
 Asn Pro Ser Pro Ile Arg Asn Leu Phe Leu Val Ser Ser Thr Leu Ser
 65 70 75 80
 Lys Val Pro Pro Thr Ala Ile Ala Glu His Leu Arg Leu Ser Ala Asp
 85 90 95
 Ala Pro Thr Tyr Leu His Glu Phe Ser Ile Lys Glu Ala Glu Ser Ser
 100 105 110
 Leu His Ala Leu Gly Ile Phe Ser Ser Leu Val Ile Glu Lys Ser Pro
 115 120 125
 Asp Asn Lys Gly Ile Thr Ile Phe Tyr Thr Leu Gln Thr Pro Ile Ala
 130 135 140
 Tyr Val Gly Asn Arg Ser Asn Thr Leu Cys Asn Leu Glu Gly Ser Cys
 145 150 155 160
 Phe Leu Gly Gln Pro Tyr Phe Pro Ser Leu Asn Leu Pro Gln Ile Phe
 165 170 175
 Phe Ser Gln Glu Asp Leu Lys Met Gln Lys Leu Pro Lys Glu Lys Met
 180 185 190
 Leu Phe Thr Lys Ile Leu Leu Lys Glu Leu Ala Met Glu Ser Pro Lys
 195 200 205
 Ile Ile Asp Leu Ser
 210

<210>982

<211>107

<212>PRT

<213>Chlamydia pneumoniae

<400>982

Leu Glu Arg Leu Leu Met Asn Leu Ser Ala Lys Glu Tyr Gly Asp Ile
 1 5 10 15
 Ile Val Ile Tyr Leu Gln Gly Ser Leu Asp Ala Val Ser Val Pro Ser
 20 25 30
 Val Gln Glu Tyr Leu Glu Gln Phe Ile Gln Lys Lys His Leu Lys Ile
 35 40 45
 Ala Leu Asn Phe Thr Asp Val Ser Tyr Ile Ser Ser Ala Gly Ile Arg
 50 55 60
 Leu Leu Leu Ser Asn Phe Lys Leu Val Gln Ser Leu Gly Gly Lys Met
 65 70 75 80
 Cys Leu Cys Cys Val Lys Glu Ser Val Thr Glu Val Met Arg Ile Ala
 85 90 95
 Arg Phe Arg Gln Met Ile Leu Leu Cys Gln Val
 100 105

<210>983

<211>342

<212>PRT

<213>Chlamydia pneumoniae

<400>983

Met Leu Pro Phe Glu Phe Glu Phe Asn Thr Thr Ser Ser Pro Glu Cys
 1 5 10 15
 Asp Val Cys Leu Asp Pro Gln Lys Leu Phe Val Lys Leu Phe Lys Arg
 20 25 30
 Thr Ile Val Leu Leu Ser Gly Pro Thr Gly Ser Gly Lys Thr Asp Val
 35 40 45
 Ser Leu Ala Leu Ala Pro Met Ile Asp Gly Glu Ile Val Ser Val Asp
 50 55 60
 Ser Met Gln Val Tyr Gln Gly Met Asp Ile Gly Thr Ala Lys Val Ser

65	70	75	80
Leu Lys Ala Arg Gln Glu Ile Pro His His Leu Ile Asp Ile Arg His			
	85	90	95
Val Gln Glu Pro Phe Asn Val Val Asp Phe Tyr Tyr Glu Ala Ile Gln			
	100	105	110
Ala Cys Gln Asn Ile Leu Ser Arg Asn Lys Val Pro Ile Leu Val Gly			
	115	120	125
Gly Ser Gly Phe Tyr Phe His Ala Phe Leu Ser Gly Pro Pro Lys Gly			
	130	135	140
Pro Ala Ala Asp Pro Gln Ile Arg Glu Gln Leu Glu Ala Ile Ala Glu			
	145	150	155
Glu His Gly Val Ser Ala Leu Tyr Glu Asp Leu Leu Leu Lys Asp Pro			
	165	170	175
Glu Tyr Ala Gln Thr Ile Thr Lys Asn Asp Lys Asn Lys Ile Ile Arg			
	180	185	190
Gly Leu Glu Ile Ile Gln Leu Thr Gly Lys Lys Val Ser Asp His Glu			
	195	200	205
Trp Asp Ile Val Pro Lys Ala Ser Arg Glu Tyr Cys Cys Arg Ala Trp			
	210	215	220
Phe Leu Ser Pro Glu Thr Glu Phe Leu Lys Asn Asn Ile Gln Met Arg			
	225	230	235
Cys Glu Ala Met Leu Gln Glu Gly Leu Leu Glu Glu Val Arg Gly Leu			
	245	250	255
Leu Asn Gln Gly Ile Arg Glu Asn Pro Ser Ala Phe Lys Ala Ile Gly			
	260	265	270
Tyr Arg Glu Trp Ile Glu Phe Leu Asp Asn Gly Glu Lys Leu Glu Glu			
	275	280	285
Tyr Glu Glu Thr Lys Arg Lys Phe Val Ser Asn Ser Trp His Tyr Thr			
	290	295	300
Lys Lys Gln Lys Thr Trp Phe Lys Arg Tyr Ser Ile Phe Arg Glu Leu			
	305	310	315
Pro Thr Leu Gly Leu Ser Ser Asp Ala Ile Ala Gln Lys Ile Ala Lys			
	325	330	335
Asp Tyr Leu Leu Tyr Ser			
	340		

<210>984

<211>365

<212>PRT

<213>Chlamydia pneumoniae

<400>984

Ser Leu Leu Leu Ala Ile Phe Asn Val Asn Tyr Phe Met Asn Leu Cys			
1	5	10	15
Lys Arg Ile Ser Phe Glu Glu Gly Leu Glu Leu Phe Val Ser Ser Pro			
	20	25	30
Ile Glu Arg Leu Gln Glu Arg Ala Asp Ala Ile Arg Lys Glu Arg Tyr			
	35	40	45
Pro Ser Asn Glu Val Thr Tyr Val Leu Asp Ala Asn Pro Asn Tyr Thr			
	50	55	60
Asn Ile Cys Lys Ile Asp Cys Thr Phe Cys Ala Phe Tyr Arg Lys Pro			
	65	70	75
Lys Ser Pro Asp Ala Tyr Leu Leu Ser Phe Asp Glu Val Arg Ser Leu			
	85	90	95
Leu Gln Arg Tyr Val Ser Ser Gly Val Lys Thr Val Leu Leu Gln Gly			
	100	105	110
Gly Val His Pro Gly Leu Gly Ile Asp Tyr Leu Glu Glu Leu Val Arg			
	115	120	125
Ile Thr Val Gln Glu Phe Pro Ser Ile His Pro His Phe Phe Ser Ala			
	130	135	140
Val Glu Ile Glu His Ala Cys Arg Val Ser Gly Ile Ser Ile Glu Gln			
	145	150	155
Gly Leu Gln Arg Leu Trp Asp Ala Gly Gln Arg Thr Ile Pro Gly Gly			
	165	170	175
Gly Ala Glu Ile Leu Ser Glu Arg Val Arg Lys Ile Ile Ser Pro Lys			
	180	185	190

WO 99/27105

Lys Met Gln Pro Gly Gly Trp Ile Asn Leu His Lys Leu Ala His Leu
 195 200 205
 Met Gly Phe Arg Thr Thr Ala Thr Met Met Phe Gly His Val Glu Asn
 210 215 220
 Pro Glu Asp Ile Leu Ile His Leu Gln Thr Leu Arg Asp Ala Gln Asp
 225 230 235 240
 Ser Cys Pro Gly Phe Tyr Ser Phe Ile Pro Trp Ser Tyr Lys Pro Gly
 245 250 255
 Asn Thr Ala Leu Arg Arg Asn Val Pro Gln Gln Ala Ser Ile Glu Thr
 260 265 270
 Tyr Tyr Arg Ile Leu Ala Leu Gly Arg Ile Phe Leu Asp Asn Phe Asp
 275 280 285
 His Val Ala Ala Ser Trp Phe Gly Glu Gly Lys Ser Leu Gly Ala Lys
 290 295 300
 Ala Leu His Tyr Gly Ala Asp Asp Phe Gly Gly Val Ile Leu Asp Glu
 305 310 315 320
 Ser Val His Lys Ala Thr Gly Trp Ser Ile Gln Ser Ser Glu Glu Glu
 325 330 335
 Ile Cys Asn Ile Ile Arg Ser Glu Gly Phe Ile Pro Val Glu Arg Asn
 340 345 350
 Thr Phe Tyr Gln His Ile Ser Cys Thr Val Ser Ser Leu
 355 360 365
 <210>985
 <211>438
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>985
 Val Val Ile Met Asp Asn Ser Asp Asn Ser Phe His Thr Leu Glu Thr
 1 5 10 15
 Glu Gln Gly Ser Phe Leu Asn Asp Glu Leu Ala Val Glu Glu Val Ala
 20 25 30
 Ser Thr Glu Ser Thr Glu Ile Ser Asp Ala Thr Leu Cys Phe Ala Asp
 35 40 45
 Glu Ile Gln Glu Leu Pro Ser Pro Glu Lys Lys Val Ala Phe Ile Leu
 50 55 60
 Asn Lys Met Arg Glu Ala Leu Thr Gly Ser Ser Gln Gly Ser Asp Leu
 65 70 75 80
 Arg Leu Phe Trp Asp Leu Arg Lys Gln Cys Leu Pro Leu Phe Asn Glu
 85 90 95
 Ile Glu Asp Thr Ala Lys Arg Ala Asp His Trp Arg Cys Tyr Ile Glu
 100 105 110
 Leu Thr Lys Glu Gly Arg His Leu Lys Gly Leu Gln Asp Glu Glu Gly
 115 120 125
 Ser Phe Val Val Gly Gln Ile Asp Leu Ala Ile Thr Cys Leu Glu Lys
 130 135 140
 Asp Ile Leu Lys Phe Gln Glu Gly Thr Glu Asp Lys Ile Phe Lys Asp
 145 150 155 160
 Arg Glu Asp Asn Phe Leu Glu Ser Gln Ala Leu Asp Lys His Gln Ala
 165 170 175
 Phe Tyr Lys Gln His His Thr Ser Leu Leu Trp Leu Ser Ser Phe Ser
 180 185 190
 Ser Lys Ile Ile Asp Leu Arg Lys Glu Leu Ile Asn Val Gly Met Arg
 195 200 205
 Met Arg Leu Lys Ser Lys Phe Phe Gln Arg Leu Ser Asn Leu Gly Asn
 210 215 220
 Gln Val Phe Pro Lys Arg Lys Glu Leu Ile Glu Lys Val Ser Gln Thr
 225 230 235 240
 Phe Ala Glu Asp Val Asp Ala Phe Val Ala Lys Tyr Phe Ile Gly Ser
 245 250 255
 Asp Lys Glu Thr Leu Lys Lys Thr Val Phe Phe Leu Arg Lys Glu Ile
 260 265 270
 Lys Asn Leu Gln His Ala Ala Lys Arg Leu Phe Val Ser His Val
 275 280 285
 Phe Ala Glu Thr Arg Leu Lys Leu Ser Lys Cys Trp Asp Gln Leu Lys

290 295 300
 Gly Met Glu Lys Glu Ile Arg Gln Glu Gln Gly Arg Leu Arg Val Val
 305 310 315 320
 Ser Ala Glu Asn Ser Lys Glu Val Arg Gln Met Leu Ala Glu Val Ser
 325 330 335
 Ser Leu Leu Ile Glu Gly Asn Asp Leu Ser Lys Val Arg Lys Asp Leu
 340 345 350
 Glu Gly Ile Ser Lys Lys Ile Arg Ala Leu Asp Leu Thr His Asp Asp
 355 360 365
 Val Ile Ser Leu Lys Lys Glu Met Gln Gln Leu Phe Asp Gln Leu Arg
 370 375 380
 Glu Lys Gln Asp Ala Ala Glu His Ser Tyr Gln Glu Gln Leu Ala Lys
 385 390 395 400
 Asp Lys Gln Val Lys Lys Glu Ala Ala Arg Ser Leu Ala Glu Arg Ile
 405 410 415
 Thr Thr Phe Ser Lys Thr Cys Ser Glu Gly Thr Leu Leu Pro Asn Leu
 420 425 430
 Glu Lys Asn Gly Arg His
 435

<210>986

<211>142

<212>PRT

<213>Chlamydia pneumoniae

<400>986

Ala His His Asn Ile Leu Lys Asn Leu Leu Arg Arg Asn Ile Thr Ser
 1 5 10 15
 Glu Ser Arg Glu Glu Trp Gln Thr Leu Lys Glu Leu Leu Gly Lys Met
 20 25 30
 Ser Phe Leu Pro Pro Pro Glu Lys Ile Ser Leu Asp Asn Gln Leu Asn
 35 40 45
 Leu Ala Leu Gln Thr Ile Val Asn Phe Phe Glu Glu Gln Leu Leu Ser
 50 55 60
 Ser Pro Asp Ser Arg Glu Lys Leu Val Asn Met Arg Gln Val Leu Lys
 65 70 75 80
 Gln Arg Arg Glu Arg Arg Gln Glu Leu Lys Asp Lys Leu Glu Gln Asp
 85 90 95
 Lys Lys Leu Leu Gly Ser Ser Gly Leu Asp Phe Asp Arg Ala Met Gln
 100 105 110
 Tyr Ser Ala Leu Val Glu Glu Asp Lys Arg Ala Leu Glu Glu Leu Asp
 115 120 125
 Ala Ser Ile Leu Glu Leu Lys Gln Gln Ile Gln Gln Leu Leu
 130 135 140

<210>987

<211>119

<212>PRT

<213>Chlamydia pneumoniae

<400>987

Met Asp Ser Phe Cys Phe Asp Leu Leu Lys Val Ala Ala Lys Ala Ile
 1 5 10 15
 Asp Asp Lys Lys Gly Asn Asn Leu Val Leu Asp Val Arg Thr Ile
 20 25 30
 Ser Glu Phe Thr Asp Tyr Phe Val Phe Val Glu Gly Ser Val Asn Val
 35 40 45
 His Val Lys Ala Leu Ala Asn Thr Ile Val Glu Glu Leu Lys Lys Gln
 50 55 60
 Lys Val Ser Pro Leu His Val Glu Gly Ile Thr Asp Gly Asn Trp Val
 65 70 75 80
 Val Ile Asp Tyr Gly Phe Ile Val Val His Val Phe Val Ser Glu Ile
 85 90 95
 Arg Gly Lys Tyr Arg Leu Glu Glu Leu Trp Lys Asp Gly Phe Ile Val
 100 105 110
 Thr Ser Lys Leu Leu Ala Ser
 115

<210>988

WO 99/27105

<211>424

<212>PRT

<213>Chlamydia pneumoniae

<400>988

Leu Leu Asn Gly Val Arg Val Tyr Met Ser Lys Lys Arg Val Val Val
 1 5 10 15
 Thr Gly Phe Gly Val Val Ser Cys Leu Gly Asn Glu Val Asp Thr Phe
 20 25 30
 Tyr Asp Asn Leu Leu Ala Gly Val Ser Gly Val Arg Pro Ile Thr Ser
 35 40 45
 Phe Pro Cys Glu Asp Tyr Ala Thr Arg Phe Ala Gly Trp Ile Pro Glu
 50 55 60
 Phe Asn Pro Glu Pro Tyr Val Asp Lys Lys Gln Ala Arg Arg Val Asp
 65 70 75 80
 Pro Phe Ile Thr Tyr Ala Met Val Ala Ala Lys Lys Ala Ile Ala Met
 85 90 95
 Ser Arg Trp Asp Lys Asp His Leu Pro Ser Asp Pro Val Arg Cys Gly
 100 105 110
 Val Ile Val Gly Ser Gly Met Gly Gly Leu Ser Thr Leu Asp Gln Gly
 115 120 125
 Met Glu Arg Leu Leu Val Ile His Lys Lys Leu Ser Pro Phe Phe Ile
 130 135 140
 Pro Tyr Ile Ile Thr Asn Met Ala Pro Ala Leu Ile Ala Met Asp Phe
 145 150 155 160
 Gly Leu Met Gly Pro Asn Tyr Ser Ile Ser Thr Ala Cys Ala Thr Gly
 165 170 175
 Asn Tyr Cys Ile Asp Ala Ala Tyr Gln His Leu Val Ser Gly Arg Ala
 180 185 190
 Asp Met Ile Ile Cys Gly Gly Thr Glu Ala Ala Val Asn Arg Ile Gly
 195 200 205
 Leu Glu Gly Phe Ile Ala Asn Arg Ala Leu Ser Glu Arg Asn Asp Ala
 210 215 220
 Pro Asp Gln Ala Ser Arg Pro Trp Asp Arg Asp Arg Asp Gly Phe Val
 225 230 235 240
 Leu Gly Glu Gly Ala Gly Ile Leu Val Leu Glu Thr Leu Glu Ser Ala
 245 250 255
 Leu Arg Arg Asp Ala Pro Ile Phe Ala Glu Met Leu Gly Ser Tyr Val
 260 265 270
 Thr Cys Asp Ala Phe His Ile Thr Ala Pro Arg Asp Asp Gly Glu Gly
 275 280 285
 Ile Thr Ala Cys Val Leu Gly Ala Leu Asn Ser Ala Gly Ile Pro Lys
 290 295 300
 Glu Arg Val Asn Tyr Val Asn Ala His Gly Thr Ser Thr Pro Leu Gly
 305 310 315 320
 Asp Leu Ser Glu Val Leu Ala Val Lys Lys Ala Phe Gly Ser His Val
 325 330 335
 Arg Asn Leu Arg Met Asn Ser Thr Lys Ser Leu Ile Gly His Cys Leu
 340 345 350
 Gly Ala Ala Gly Gly Val Glu Ala Val Val Ala Ile Gln Ala Ile Leu
 355 360 365
 Thr Gly Lys Leu His Pro Thr Ile Asn Leu Asp Asn Pro Ile Ala Glu
 370 375 380
 Ile Glu Asp Phe Asp Val Val Ala Asn Lys Ala Gln Asp Trp Asp Ile
 385 390 395 400
 Asp Val Ala Met Ser Asn Ser Phe Gly Phe Gly Gly His Asn Ser Thr
 405 410 415
 Ile Leu Phe Ser Arg Tyr Val Pro
 420

<210>989

<211>150

<212>PRT

<213>Chlamydia pneumoniae

<400>989

Met Met Lys Thr Lys Tyr Glu Tyr Ser Phe Gly Val Ile Pro Ile Lys

1	5	10	15
Phe Phe Gly Thr Pro Asp Lys Asn Thr Leu Lys Ala Cys Phe Ile Cys			
	20	25	30
His Thr Arg Gly Lys His Trp Gly Phe Pro Lys Gly His Ser Glu Asp			
	35	40	45
Lys Glu Gly Pro Gln Glu Ala Glu Arg Glu Leu Val Glu Glu Thr			
	50	55	60
Gly Leu Ser Val Val Asn Phe Phe Pro Lys Val Leu Ile Glu Gln Tyr			
	65	70	75
Ser Phe Asn Asn Glu Glu Gln Val Phe Val Arg Lys Glu Val Thr Tyr			
	85	90	95
Phe Leu Ala Glu Val Arg Gly Asp Ile His Ala Asp Pro Met Glu Ile			
	100	105	110
Cys Asp Ser Gln Trp Leu Ser Leu Gln Glu Gly Leu Arg Leu Leu Ser			
	115	120	125
Phe Pro Glu Leu Arg Asp Leu Thr Val Glu Ala Asp Lys Phe Ile Asn			
	130	135	140
Asn Tyr Leu Phe Ser Ser			
145	150		

<210>990

<211>215

<212>PRT

<213>Chlamydia pneumoniae

<400>990

Met Ser Lys Lys Pro Leu Tyr Val Ala His Pro Trp His Ser Pro Thr			
1	5	10	15
Leu Thr Gln Asp Asn Tyr Glu Ser Leu Cys Cys Tyr Ile Glu Ile Thr			
	20	25	30
Pro Tyr Asp Ser Val Lys Phe Glu Leu Asp Lys Ala Thr Gly Leu Leu			
	35	40	45
Lys Val Asp Arg Pro Gln Lys Phe Ser Asn Phe Cys Pro Cys Leu Tyr			
	50	55	60
Gly Leu Leu Pro Gln Thr Tyr Cys Gly Thr Ala Ser Gly Asn Tyr Ser			
	65	70	75
Gly Glu Gln Thr Arg Arg Glu Gly Ile Gln Gly Asp Lys Asp Pro Leu			
	85	90	95
Asp Val Cys Val Leu Thr Glu Lys Asn Ile His His Gly Asn Ile Leu			
	100	105	110
Leu Gln Ala Arg Pro Ile Gly Gly Leu Arg Ile Ile Asp Ser Gly Glu			
	115	120	125
Ala Asp Asp Lys Ile Ile Ala Val Leu Glu Asp Asp Leu Val Phe Ala			
	130	135	140
Glu Ile Glu Asp Ile Ser Asp Cys Pro Gly Thr Val Leu Asp Met Ile			
	145	150	155
Gln His Tyr Phe Leu Thr Tyr Lys Ala Thr Pro Asn His Leu Ile Lys			
	165	170	175
Gly Ser Pro Ala Lys Ile Glu Ile Val Gly Ile Tyr Gly Lys Lys Glu			
	180	185	190
Ala Gln Lys Val Ile Gln Leu Ala His Glu Asp Tyr Leu Ser Tyr Ile			
	195	200	205
Gly Asp Thr Ala Glu Val Asn			
210	215		

<210>991

<211>351

<212>PRT

<213>Chlamydia pneumoniae

<400>991

Met Lys Tyr Ser Leu Asn Phe Lys Glu Ile Lys Ile Asp Asp Tyr Glu			
1	5	10	15
Arg Val Ile Glu Val Thr Cys Ser Lys Val Arg Leu His Ala Ile Ile			
	20	25	30
Ala Ile His Gln Thr Ala Val Gly Pro Ala Leu Gly Gly Val Arg Ala			
	35	40	45
Ser Leu Tyr Ser Ser Phe Glu Asp Ala Cys Thr Asp Ala Leu Arg Leu			

50 55 60
 Ala Arg Gly Met Thr Tyr Lys Ala Ile Ile Ser Asn Thr Gly Thr Gly
 65 70 75 80
 Gly Gly Lys Ser Val Ile Ile Leu Pro Gln Asp Ala Pro Ser Leu Thr
 85 90 95
 Glu Asp Met Leu Arg Ala Phe Gly Gln Ala Val Asn Ala Leu Glu Gly
 100 105 110
 Thr Tyr Ile Cys Ala Glu Asp Leu Gly Val Ser Ile Asn Asp Ile Ser
 115 120 125
 Ile Val Ala Glu Glu Thr Pro Tyr Val Cys Gly Ile Ala Asp Val Ser
 130 135 140
 Gly Asp Pro Ser Ile Tyr Thr Ala His Gly Gly Phe Leu Cys Ile Lys
 145 150 155 160
 Glu Thr Ala Lys Tyr Leu Trp Gly Ser Ser Ser Leu Arg Gly Lys Lys
 165 170 175
 Ile Ala Ile Gln Gly Ile Gly Ser Val Gly Arg Arg Leu Leu Gln Ser
 180 185 190
 Leu Phe Phe Glu Gly Ala Glu Leu Tyr Val Ala Asp Val Leu Glu Arg
 195 200 205
 Ala Val Gln Asp Ala Ala Arg Leu Tyr Gly Ala Thr Ile Val Pro Thr
 210 215 220
 Glu Glu Ile His Ala Leu Glu Cys Asp Ile Phe Ser Pro Cys Ala Arg
 225 230 235 240
 Gly Asn Val Ile Arg Lys Asp Asn Leu Ala Asp Leu Asn Cys Lys Ala
 245 250 255
 Ile Val Gly Val Ala Asn Asn Gln Leu Glu Asp Ser Ser Ala Gly Met
 260 265 270
 Met Leu His Glu Arg Gly Ile Leu Tyr Gly Pro Asp Tyr Leu Val Asn
 275 280 285
 Ala Gly Gly Leu Leu Asn Val Ala Ala Ala Ile Glu Gly Arg Val Tyr
 290 295 300
 Ala Pro Lys Glu Val Leu Leu Lys Val Glu Glu Leu Pro Ile Val Leu
 305 310 315 320
 Ser Lys Leu Tyr Asn Gln Ser Lys Thr Thr Gly Lys Asp Leu Val Ala
 325 330 335
 Leu Ser Asp Ser Phe Val Glu Asp Lys Leu Leu Ala Tyr Thr Ser
 340 345 350

<210>992

<211>325

<212>PRT

<213>Chlamydia pneumoniae

<400>992

Met His Ser Glu Leu Pro Asn Tyr Gln Asn Ile Val Glu Ser Val Val
 1 5 10 15
 Thr Glu Ile Thr Thr Gln Leu Leu Asn Tyr Arg Ser Glu His Arg Leu
 20 25 30
 Val Pro Phe Trp Glu Lys Ser Asp Gly Ser Phe Ile Thr Ala Ala Asp
 35 40 45
 Tyr Gly Ser Gln Tyr Tyr Leu Lys Gln Gln Leu Ala Lys Ala Phe Pro
 50 55 60
 Asn Ile Pro Phe Ile Gly Glu Glu Thr Leu Tyr Pro Asp Gln Asp Asn
 65 70 75 80
 Glu Lys Ile Pro Glu Ile Leu Lys Phe Thr Arg Leu Leu Thr Ser Ser
 85 90 95
 Val Ser Arg Asp Asp Leu Ile Ser Thr Leu Val Pro Pro Pro Ser Pro
 100 105 110
 Thr Ser Leu Phe Trp Leu Val Asp Pro Ile Asp Gly Thr Ala Gly Phe
 115 120 125
 Ile Arg His Arg Ala Phe Ala Val Ala Ile Ser Leu Ile Tyr Glu Tyr
 130 135 140
 Arg Pro Ile Leu Ser Val Met Ala Cys Pro Ala Tyr Asn Gln Thr Phe
 145 150 155 160
 Lys Leu Tyr Ser Ala Ala Lys Gly His Gly Leu Ser Ile Val His Ser
 165 170 175

Gln Asn Leu Asp Arg Arg Phe Val Tyr Ala Asp Arg Lys Gln Thr Lys
 180 185 190
 Gln Phe Cys Glu Ala Ser Leu Ala Ala Leu Asn Gln Gln His His Ala
 195 200 205
 Thr Arg Lys Leu Ser Leu Gly Leu Pro Asn Thr Pro Ser Pro Arg Arg
 210 215 220
 Val Glu Ser Gln Tyr Lys Tyr Ala Leu Val Ala Glu Gly Ala Val Asp
 225 230 235 240
 Phe Phe Ile Arg Tyr Pro Phe Ile Asp Ser Pro Ala Arg Ala Trp Asp
 245 250 255
 His Val Pro Gly Ala Phe Leu Val Glu Glu Ala Gly Gly Arg Val Thr
 260 265 270
 Asp Ala Leu Gly Ala Pro Leu Glu Tyr Arg Lys Glu Ser Leu Val Leu
 275 280 285
 Asn Asn His Ala Val Ile Leu Ala Ser Gly Asp Gln Glu Thr His Glu
 290 295 300
 Thr Thr Leu Ala Ala Leu Gln Asn Gln Leu Asn Val Val Pro Thr Asp
 305 310 315 320
 Lys Leu Ile Ala Leu
 325

<210>993

<211>246

<212>PRT

<213>Chlamydia pneumoniae

<400>993

Gly Glu Leu Met Leu Ile Lys Leu Trp Arg Ala Thr Tyr Glu Gly Met
 1 5 10 15
 Tyr Thr Phe Leu Val Gly Ala Leu Leu Lys Leu Arg Tyr Arg Met Gln
 20 25 30
 Val Glu Gly Trp Asp Thr Leu Asn Ile Asn Pro Lys Gln Gly Cys Leu
 35 40 45
 Phe Leu Ala Asn His Val Ala Glu Val Asp Pro Ile Ile Leu Glu Tyr
 50 55 60
 Leu Phe Trp Ser Arg Phe His Val Arg Pro Met Ala Val Glu Tyr Leu
 65 70 75 80
 Phe His Ser Arg Val Gln Trp Phe Leu Asn Ser Val Arg Ser Ile
 85 90 95
 Pro Ile Pro Gln Leu Val Pro Gly Lys Glu Ser Lys Arg Ser Leu Glu
 100 105 110
 Arg Met Asn Val Cys Tyr Glu Glu Ala Ser Arg Ala Leu Asn Arg Gly
 115 120 125
 Glu Ser Leu Leu Leu Tyr Pro Ser Gly Arg Leu Ser Arg Thr Gly Lys
 130 135 140
 Glu Glu Ile Val Asn Gln Tyr Ser Ala Tyr Val Leu Leu His Arg Val
 145 150 155 160
 Met Glu Cys Asn Val Val Leu Val Arg Val Ser Gly Leu Trp Gly Ser
 165 170 175
 Ala Phe Ser Arg Tyr Lys Gln Asn Ser Thr Pro Lys Leu Gly Pro Ala
 180 185 190
 Phe Lys Glu Ala Phe Arg Ala Leu Leu Arg Arg Gly Ile Phe Phe Met
 195 200 205
 Pro Lys Arg Phe Val Lys Ile Thr Leu Cys Gln Val Asp His Leu Phe
 210 215 220
 Leu Lys Gln Phe Pro Thr Lys Gln Asp Leu Asn Thr Phe Leu Ala Ser
 225 230 235 240
 Trp Phe Lys Ser Arg Arg
 245

<210>994

<211>567

<212>PRT

<213>Chlamydia pneumoniae

<400>994

Ile Leu Phe Trp Leu Leu Gly Leu Asn Gln Gly Asp Asp Asn Leu Pro
 1 5 10 15

WO 99/27105

Ile Glu Val Pro Leu Arg Ile Thr Arg Lys Leu Arg Arg Met His Asp
 20 25 30
 Gln Arg Asn Arg Gly His Asn Asn His Asn Leu Arg Leu Arg Pro Gly
 35 40 45
 Ser Thr Leu Leu Glu Ala Phe Leu Ile Leu Cys Ser Glu His Glu Glu
 50 55 60
 Gly Ile Ala Cys Phe Asp Glu His Leu Gly Ser Leu Ser Tyr Arg Glu
 65 70 75 80
 Leu Arg Asn Ala Ile Ile Ala Val Ala Ile Lys Val Ser Lys Phe Ser
 85 90 95
 Glu Asp Arg Val Gly Val Met Met Pro Ala Ser Ile Gly Ala Phe Ile
 100 105 110
 Ala Tyr Phe Gly Ile Leu Leu Ala Gly Lys Thr Pro Val Met Met Asn
 115 120 125
 Trp Ser Gln Gly Leu Arg Glu Leu Arg Ala Cys Thr Lys Thr Val Glu
 130 135 140
 Val Arg Arg Val Leu Thr Ser Gln Gln Phe Ile Lys His Leu Thr Glu
 145 150 155 160
 Val Gln Gly Phe Val Glu Tyr Pro Phe Asp Leu Met Tyr Met Glu Asp
 165 170 175
 Val Arg Lys Arg Leu Ser Trp Trp Glu Lys Cys Arg Ile Gly Leu Tyr
 180 185 190
 Ser Lys Cys Ser Val Pro Trp Leu Leu Arg Ile Phe Gly Val Ser Gly
 195 200 205
 Val Glu Ser Asp Asp Thr Ala Val Ile Leu Phe Thr Ser Gly Thr Glu
 210 215 220
 Lys Leu Pro Lys Ala Val Pro Leu Thr His Lys Asn Leu Met Glu Asn
 225 230 235 240
 Gln Glu Ala Cys Leu Lys Phe Phe Asp Pro Asn Thr Gln Asp Val Met
 245 250 255
 Leu Ala Phe Leu Pro Pro Phe His Ala Tyr Gly Phe Asn Ser Cys Gly
 260 265 270
 Leu Phe Pro Leu Leu Met Gly Val His Val Val Phe Ala Ser Asn Pro
 275 280 285
 Leu Asn Pro Lys Lys Leu Val Glu Phe Ile Asp Asp Lys Lys Val Thr
 290 295 300
 Phe Phe Gly Ser Thr Pro Val Phe Phe Asp Tyr Ile Leu Lys Thr Ala
 305 310 315 320
 Lys Lys Gln Asn Ser Cys Leu Glu Ser Leu Arg Leu Val Val Ile Gly
 325 330 335
 Gly Asp Ala Leu Lys Asp Thr Leu Tyr Glu Glu Thr Lys Lys Leu Gln
 340 345 350
 Pro Gln Ile Ala Leu Tyr Gln Gly Tyr Gly Ala Thr Glu Cys Ser Pro
 355 360 365
 Val Ile Ser Ile Thr Thr Lys Glu Ser Pro Arg Lys Ser Glu Cys Val
 370 375 380
 Gly Met Pro Ile Glu Gly Met Asp Val Leu Ile Ile Ser Lys Glu Thr
 385 390 395 400
 His Ile Pro Val Ser Ser Gly Glu Gln Gly Leu Ile Val Val Arg Gly
 405 410 415
 Asn Ser Val Phe Ser Gly Tyr Leu Gly Asn His Glu His Gln Ser Phe
 420 425 430
 Val Ser Leu Gly Gly Asp Gln Trp Tyr Leu Thr Gly Asp Leu Gly His
 435 440 445
 Ile Gly Pro Ser Gly Asp Leu Phe Leu Glu Gly Arg Leu Ser Arg Phe
 450 455 460
 Val Lys Ile Gly Gly Glu Met Val Ser Leu Glu Ala Leu Glu Ser Ile
 465 470 475 480
 Leu His Glu His Phe Thr Glu Asn Gln Asn Glu Asp Ala Gly Ser Leu
 485 490 495
 Val Val Cys Gly Ile Pro Gly Asp Lys Val Arg Leu Cys Leu Phe Thr
 500 505 510
 Thr Leu Ala Thr Thr Ile His Glu Val Asn Asp Ile Leu Lys Ser Ala
 515 520 525

Glu Thr Ser Ser Ile Val Lys Ile Ser Tyr Val His Gln Val Glu Ser
 530 535 540
 Ile Pro Ile Leu Gly Ile Gly Lys Pro Asp Tyr Val Ser Leu Asn Ala
 545 550 555 560
 Leu Ala Val Ser Leu Phe Gly
 565
 <210>995
 <211>376
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>995
 Val Cys Lys Glu Ser Phe Leu Thr Thr Ser Asp Val Ile Asp Phe Val
 1 5 10 15
 Thr Asn Asp Phe Leu Gly Phe Ala Arg Ser Pro Thr Ile Tyr Cys Glu
 20 25 30
 Val Ser Lys Arg Phe Gln Ile His Cys Gln Gln Phe Pro His Glu Lys
 35 40 45
 Leu Gly Ile Arg Gly Ser Arg Leu Met Val Gly Pro Ser Ser Val Ile
 50 55 60
 Asp Asp Leu Glu Ser Lys Ile Ala Ser Tyr His Gly Ala Pro Asn Ala
 65 70 75 80
 Phe Ile Val Asn Ser Gly Tyr Met Ala Asn Leu Gly Leu Cys His His
 85 90 95
 Val Ser Arg Ser Thr Asp Val Leu Leu Trp Asp Glu Glu Val His Met
 100 105 110
 Ser Val Val His Ser Leu Ser Ala Ile Ser Gly Gln His His Thr Phe
 115 120 125
 His His Asn Asn Leu Glu His Leu Glu Ser Leu Leu Gln Cys Tyr Arg
 130 135 140
 Ile Ser Ser Lys Gly Arg Ile Phe Ile Phe Val Ser Ser Val Tyr Ser
 145 150 155 160
 Phe Arg Gly Thr Leu Ala Pro Leu Glu Gln Ile Ile Ala Leu Ser Lys
 165 170 175
 Lys Tyr His Ala His Leu Ile Val Asp Glu Ala His Ala Met Gly Ile
 180 185 190
 Phe Gly Asp Asp Gly Lys Gly Leu Cys His Ala Leu Gly Tyr Glu Asn
 195 200 205
 Phe Tyr Ala Val Leu Val Thr Tyr Gly Lys Ala Leu Gly Thr Met Gly
 210 215 220
 Ala Ser Leu Leu Thr Ser Ser Glu Val Lys Tyr Asp Leu Met Gln Asn
 225 230 235 240
 Ser Pro Pro Leu Arg Tyr Ser Thr Ser Leu Ser Pro His Thr Leu Ile
 245 250 255
 Ser Ile Gly Thr Ala Tyr Asp Phe Leu Ala Ser Glu Gly Glu Ile Ala
 260 265 270
 Arg Lys Gln Val Phe Lys Leu Lys Glu His Phe His Glu Cys Phe Asp
 275 280 285
 Ser His Ala Pro Gly Cys Val Gln Pro Ile Phe Leu Pro His Thr Cys
 290 295 300
 Leu Glu Glu Ala Ile Ser Val Leu Glu Thr Thr Gly Ile His Val Gly
 305 310 315 320
 Val Val Ala Phe Ala Lys His Pro Phe Leu Arg Val Asn Leu His Ala
 325 330 335
 Tyr Asn Thr Val Asp Glu Val Asn Leu Leu Ala Gln Val Met Lys Pro
 340 345 350
 Tyr Leu Glu Lys Ser Ser His Arg Val His Ile Asn His Glu Phe His
 355 360 365
 Leu Trp Arg Glu Leu Cys Gln His
 370 375
 <210>996
 <211>758
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>996

WO 99/27105

Lys Arg Phe Thr Ala Lys Thr Lys Ser Met Gly Tyr Ile Glu Ser Ser
 1 5 10 15
 Thr Phe Arg Leu Tyr Ala Glu Val Ile Val Gly Ser Asn Ile Asn Lys
 20 25 30
 Val Leu Asp Tyr Gly Val Pro Glu Asn Leu Glu His Ile Thr Lys Gly
 35 40 45
 Thr Ala Val Thr Ile Ser Leu Arg Gly Gly Lys Lys Val Gly Val Ile
 50 55 60
 Tyr Gln Ile Lys Thr Thr Gln Cys Lys Lys Ile Leu Pro Ile Leu
 65 70 75 80
 Gly Leu Ser Asp Ser Glu Ile Val Leu Pro Gln Asp Leu Leu Asp Leu
 85 90 95
 Leu Phe Trp Ile Ser Gln Tyr Tyr Phe Ala Pro Leu Gly Lys Thr Leu
 100 105 110
 Lys Leu Phe Leu Pro Ala Ile Ser Ser Asn Val Ile Gln Pro Lys Gln
 115 120 125
 His Tyr Arg Val Val Leu Lys Gln Ser Lys Ala Lys Thr Lys Glu Ile
 130 135 140
 Leu Ala Lys Leu Glu Val Leu His Pro Ser Gln Gly Ala Val Leu Lys
 145 150 155 160
 Ile Leu Leu Gln His Ala Ser Pro Pro Gly Leu Ser Ser Leu Met Glu
 165 170 175
 Thr Ala Lys Val Ser Gln Ser Pro Ile His Ser Leu Glu Lys Leu Gly
 180 185 190
 Ile Leu Asp Ile Val Asp Ala Ala Gln Leu Glu Leu Gln Glu Asp Leu
 195 200 205
 Leu Thr Phe Phe Pro Pro Ala Pro Lys Asp Leu His Pro Glu Gln Gln
 210 215 220
 Ser Ala Ile Asp Lys Ile Phe Ser Ser Leu Lys Thr Ser Gln Phe His
 225 230 235 240
 Thr His Leu Leu Phe Gly Ile Thr Gly Ser Gly Lys Thr Glu Ile Tyr
 245 250 255
 Leu Arg Ala Thr Ser Glu Ala Leu Lys Gln Gly Lys Ser Thr Ile Leu
 260 265 270
 Leu Val Pro Glu Ile Ala Leu Thr Val Gln Thr Val Ser Leu Phe Lys
 275 280 285
 Ala Arg Phe Gly Lys Asp Val Gly Val Leu His His Lys Leu Ser Asp
 290 295 300
 Ser Asp Gln Lys Ser His Val Ala Pro Ser Phe Arg Arg Ser Leu Arg
 305 310 315 320
 Ile Leu Ile Gly Pro Arg Ser Ala Leu Phe Cys Pro Met Lys Asn Leu
 325 330 335
 Gly Leu Ile Ile Val Asp Glu Glu His Asp Pro Ala Tyr Lys Gln Thr
 340 345 350
 Glu Ser Pro Pro Cys Tyr His Ala Arg Asp Val Ala Val Met Arg Gly
 355 360 365
 Lys Leu Ala His Ala Thr Val Val Leu Gly Ser Ala Thr Pro Ser Leu
 370 375 380
 Glu Ser Tyr Thr Asn Ala Leu Ser Gly Lys Tyr Val Leu Ser Arg Leu
 385 390 395 400
 Ser Ser Arg Ala Ala Ala His Pro Ala Lys Ile Ser Leu Ile Asn
 405 410 415
 Met Asn Leu Glu Arg Glu Lys Ser Lys Thr Lys Ile Leu Phe Ser Gln
 420 425 430
 Pro Val Leu Lys Lys Ile Ala Glu Arg Leu Glu Val Gly Glu Gln Val
 435 440 445
 Leu Ile Phe Phe Asn Arg Arg Gly Tyr His Thr Asn Val Ser Cys Thr
 450 455 460
 Val Cys Lys His Thr Leu Lys Cys Pro His Cys Asp Met Val Leu Thr
 465 470 475 480
 Phe His Lys Tyr Ala Asn Val Leu Leu Cys His Leu Cys Asn Ser Ser
 485 490 495
 Pro Lys Asp Leu Pro Gln Ser Cys Pro Lys Cys Leu Gly Thr Met Thr
 500 505 510

Leu Gln Tyr Arg Gly Ser Gly Thr Glu Lys Ile Glu Lys Ile Leu Gln
 515 520 525
 Gln Ile Phe Pro Gln Ile Arg Thr Ile Arg Ile Asp Ser Asp Thr Thr
 530 535 540
 Lys Phe Lys Gly Ser His Glu Thr Leu Leu Arg Gln Phe Ala Thr Gly
 545 550 555 560
 Lys Ala Asp Val Leu Ile Gly Thr Gln Met Ile Ala Lys Gly Met Asn
 565 570 575
 Phe Ser Ala Val Thr Leu Ala Val Ile Leu Asn Gly Asp Ser Gly Leu
 580 585 590
 Tyr Ile Pro Asp Phe Arg Ala Ser Glu Gln Val Phe Gln Leu Ile Thr
 595 600 605
 Gln Val Ala Gly Arg Ser Gly Arg Ser His Leu Pro Gly Glu Ile Leu
 610 615 620
 Ile Gln Ser Phe Leu Pro Asp His Pro Thr Ile His Ser Ala Met Arg
 625 630 635 640
 Gln Asp Tyr Ser Ala Phe Tyr Ser Gln Glu Ile Thr Gly Arg Glu Leu
 645 650 655
 Cys Glu Tyr Pro Pro Phe Ile Arg Leu Ile Arg Cys Ile Phe Met Gly
 660 665 670
 Lys Cys Pro Lys Gln Thr Trp Glu Glu Ala His Arg Val His Asn Ile
 675 680 685
 Leu Lys Glu Gln Leu Glu Ser Thr Asn Pro Leu Met Pro Val Thr Pro
 690 695 700
 Cys Gly His Phe Lys Ile Lys Asp Thr Phe Arg Tyr Gln Phe Leu Ile
 705 710 715 720
 Lys Ser Ala Tyr Val Ile Pro Val Asn Lys Lys Leu His His Ala Leu
 725 730 735
 Met Leu Ala Lys Leu Ser Pro Lys Val Lys Phe Met Ile Asp Val Asp
 740 745 750
 Pro Met Thr Thr Phe Phe
 755

<210>997

<211>230

<212>PRT

<213>Chlamydia pneumoniae

<400>997

Lys His Trp Leu Phe Met Glu Asn Ser Gln Asn Phe His Asp Thr Leu
 1 5 10 15
 Cys Gln Leu Leu Asp Arg Tyr Ser Glu Glu Leu Tyr Pro Thr Leu Ala
 20 25 30
 Ser Leu Leu Asn Val Thr Leu Pro Asn Thr Ala Ile Ser Ala Ser Val
 35 40 45
 Ser Ser Ile Pro Glu Lys Ala Val Glu Val Pro Asn Ala Glu Pro Gln
 50 55 60
 Pro Ile Thr Pro Pro Pro Pro Thr Asn Leu Ser Gln Glu Lys Thr Lys
 65 70 75 80
 Pro Ser Asp Trp Lys Cys Val Pro Leu His Pro Asp Leu Ser Gln Asn
 85 90 95
 Ala Ile Leu Lys Glu Lys Tyr Pro Ala Leu Lys Asp Cys Ser Leu Pro
 100 105 110
 Ala Pro Lys Ile Pro Cys Ser Ile Phe Val Tyr Glu Glu Asn Asn Glu
 115 120 125
 Glu Val Leu Phe Phe Asn Arg Leu Ala Lys Ile Leu Thr Gln Gln Leu
 130 135 140
 Phe Pro Thr Lys Leu Thr Leu Ile His Ala Lys Thr Asn Ile Phe Val
 145 150 155 160
 Asn Asn Pro Asn Phe Phe Leu Ala Leu Ala Pro Leu Asn Val Ile Arg
 165 170 175
 Tyr Lys Ile Pro Thr Thr Asp Tyr His Gln Ser Leu Thr Gln Asn Gly
 180 185 190
 Cys Ile Phe Leu Pro Leu Tyr Ser Ser Leu Glu Tyr Glu Lys Asp Ser
 195 200 205
 Gln Leu Lys Arg Asn Leu Trp Ala Ile Leu Asn Arg Leu Pro Phe Ala

WO 99/27105

210 215 220
 Tyr Thr Pro Lys Ser Ser
 225 230
 <210>998
 <211>166
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>998
 His Glu Ile Leu Val Ala Arg Met Cys Phe Cys Arg Leu Ser Ala Ile
 1 5 10 15
 Asp Phe Thr Leu Leu Cys Cys Thr Lys Thr Cys Phe Trp Arg Asn Leu
 20 25 30
 Gln Gln Thr Arg Pro Ile Ala Ala Asn Leu Gln Trp Glu Ser Tyr
 35 40 45
 Ala Glu Ala Leu Glu His Ser Lys Gln Asp His Lys Pro Ile Cys Leu
 50 55 60
 Phe Phe Thr Gly Ser Asp Trp Cys Met Trp Cys Ile Lys Met Gln Asp
 65 70 75 80
 Gln Ile Leu Gln Ser Ser Glu Phe Lys His Phe Ala Gly Val His Leu
 85 90 95
 His Met Val Glu Val Asp Phe Pro Gln Lys Asn His Gln Pro Glu Glu
 100 105 110
 Gln Arg Gln Lys Asn Gln Glu Leu Lys Ala Gln Tyr Lys Val Thr Gly
 115 120 125
 Phe Pro Glu Leu Val Phe Ile Asp Ala Glu Gly Lys Gln Leu Ala Arg
 130 135 140
 Met Gly Phe Glu Pro Gly Gly Gly Ala Ala Tyr Val Ser Lys Val Lys
 145 150 155 160
 Ser Ala Leu Lys Leu Arg
 165
 <210>999
 <211>380
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>999
 Met Ile Pro Ser Pro Thr Pro Ile Asn Phe Arg Asp Asp Thr Ile Leu
 1 5 10 15
 Glu Thr Asp Pro Lys Pro Ser Leu Ile Met Phe Ser Ser Lys Lys Thr
 20 25 30
 Glu Ile Ala Ser Glu Arg Arg Lys Ala His Pro Thr Leu Phe Lys Val
 35 40 45
 Leu Gly Thr Ile Trp Asn Ile Val Lys Phe Ile Ile Ser Ile Ile Leu
 50 55 60
 Phe Leu Pro Leu Ala Leu Leu Trp Val Leu Lys Lys Thr Cys Gln Phe
 65 70 75 80
 Phe Ile Leu Pro Ser Ser Ile Ile Ser Gln Ser Met Ser Lys Thr Ala
 85 90 95
 Val Ala Ile Arg Arg Met Thr Phe Leu Ser His Ile Lys Gln Leu Leu
 100 105 110
 Ser Leu Lys Glu Ile Ser Ala Ala Asp Arg Val Val Ile Gln Tyr Asp
 115 120 125
 Asp Leu Val Val Asp Ser Leu Ala Ile Lys Ile Pro His Ala Leu Pro
 130 135 140
 His Arg Trp Ile Leu Tyr Ser Gln Gly Asn Ser Gly Leu Met Glu Asn
 145 150 155 160
 Leu Phe Asp Arg Gly Asp Ser Ser Leu His Gln Leu Ala Lys Ala Thr
 165 170 175
 Gly Ser Asn Leu Leu Val Phe Asn Tyr Pro Gly Ile Met Ser Ser Lys
 180 185 190
 Gly Glu Ala Lys Arg Glu Asn Leu Val Lys Ser Tyr Gln Ala Cys Val
 195 200 205
 Arg Tyr Leu Arg Asp Glu Glu Thr Gly Pro Lys Ala Asn Gln Ile Ile
 210 215 220
 Ala Phe Gly Tyr Ser Leu Gly Thr Ser Val Gln Ala Ala Ala Leu Asp

225	230	235	240
Arg Glu Val Thr Asp	Gly Ser Asp Gly Thr Ser Trp Ile Val Val Lys		
	245	250	255
Asp Arg Gly Pro Arg Ser Leu Ala Asp Val Ala Asn Gln Ile Cys Lys			
	260	265	270
Pro Ile Ala Ser Ala Ile Ile Lys Leu Val Gly Trp Asn Ile Asp Ser			
	275	280	285
Val Lys Pro Ser Glu Arg Leu Arg Cys Pro Glu Ile Phe Ile Tyr Asn			
	290	295	300
Ser Asn His Asp Gln Glu Leu Ile Ser Asp Gly Leu Phe Glu Arg Glu			
305	310	315	320
Asn Cys Val Xaa Thr Pro Phe Leu Glu Leu Pro Glu Val Lys Thr Ser			
	325	330	335
Gly Thr Lys Ile Pro Ile Pro Glu Arg Asp Leu Leu His Leu Asn Pro			
	340	345	350
Leu Ser Pro Asn Val Val Asp Arg Leu Ala Ala Val Ile Ser Asn Tyr			
	355	360	365
Leu Asp Ser Glu Asn Arg Lys Ser Gln Gln Pro Asp			
	370	375	380

<210>1000
 <211>377
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>1000

Phe Thr Leu Leu Asn Leu Ser Asn Arg Ser Asp Ile Leu Ser Gly Ile	
1	5 10 15
Phe Ser Asn Pro His Pro Val Ser Tyr Phe Ser Ser Thr His Ala Lys	
	20 25 30
Gln Leu Ser Asp Phe Ser Lys Lys His Pro Ile Leu Thr Lys Ile Val	
	35 40 45
Thr Ile Ile Val Lys Ile Phe Lys Leu Leu Ile Gly Leu Ile Ile Pro	
	50 55 60
Pro Leu Gly Ile Tyr Trp Leu Cys Gln Leu Val Cys Ser Leu Ala Leu	
65	70 75 80
Phe Pro Arg Ser Ser Met Leu Tyr Ser Val Leu Lys Thr Cys Phe Lys	
	85 90 95
Lys Tyr Arg Leu Glu Gln Glu Ile Gln Asp Tyr Phe Val Lys Asn Leu	
	100 105 110
Asp Pro Ser Phe Lys Asp Pro Ala Val Ser Glu Ser Lys Arg Ile Thr	
	115 120 125
Ile Gln Gln Asp His Leu Thr Ile Asp Thr Leu Ala Ile His Phe Ser	
	130 135 140
Thr Ala Arg Pro Lys Arg Trp Leu Leu Ile Ser Leu Gly Ser Gly Asp	
145	150 155 160
Phe Leu Glu Asp Met Ile Gly Leu Lys Asp Ser Leu Phe Leu Ser Trp	
	165 170 175
Lys Glu Leu Ala Lys Leu Leu Gly Ala Asn Ile Leu Ile Tyr Asn Tyr	
	180 185 190
Pro Gly Val Lys Ser Ser Thr Gly Lys Leu Asn Leu Glu Asn Leu Ala	
	195 200 205
Thr Val Ile Ile Tyr Val Gln Ser Thr Tyr Lys Ile Lys Phe Arg Ala	
	210 215 220
Leu Gly Leu Thr Lys Ser Ser Pro Arg Ile Phe Leu Arg Arg Gly Ser	
225	230 235 240
Pro Val Cys Ser Phe Ala Lys Asn Pro Phe Thr Asn Ser Glu Thr Ser	
	245 250 255
Trp Val Ala Val Lys Asp Arg Ala Pro His Ser Leu Pro Ala Ala Ala	
	260 265 270
Asn Ser Phe Phe Gly Pro Ile Gly Lys Leu Ile Ala Val Leu Ala Arg	
	275 280 285
Trp Lys Met Asp Ala Glu Lys Asn Ser Arg Glu Leu Pro Cys Pro Glu	
	290 295 300
Ile Leu Val Tyr Ser Ala Asp Arg Phe Arg Pro Ser Glu Val Gly Asp	
305	310 315 320

Asp Thr Ala Leu Leu Pro Glu Phe Thr Leu Ala His Ala Ile Lys Arg
 325 330 335
 Thr Pro Phe Ala Arg Ser Lys Lys Phe Ile Gly Glu Val Asn Leu Leu
 340 345 350
 His Ser Ser Pro Leu Lys His Pro Thr Ile Gln Lys Leu Ala Glu Ala
 355 360 365
 Ile Leu Glu Ser Leu Ser Arg Lys Asn
 370 375
 <210>1001
 <211>369
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>1001
 Met Ala Pro Ile His Gly Ser Asn Ala Phe Val Glu Asp Ile Leu His
 1 5 10 15
 Ser His Pro Ser Pro Gln Ala Thr Tyr Phe Ser Ser Thr Arg Ala Gln
 20 25 30
 Lys Leu His Glu Phe Lys Asp Arg His Pro Val Leu Thr Arg Ile Ala
 35 40 45
 Ser Val Ile Ile Lys Ile Phe Lys Val Leu Ile Gly Leu Ile Ile Leu
 50 55 60
 Pro Leu Gly Ile Tyr Trp Leu Cys Gln Thr Leu Cys Thr Asn Ser Ile
 65 70 75 80
 Leu Pro Ser Lys Asn Leu Leu Lys Ile Phe Lys Lys Gln Pro Asn Thr
 85 90 95
 Lys Thr Leu Lys Thr Asn Tyr Leu Arg Ala Leu Gln Asp Tyr Ser Ser
 100 105 110
 Lys Asn Arg Val Ala Ser Met Arg Arg Val Pro Ile Leu Gln Asp Asn
 115 120 125
 Val Leu Ile Asp Thr Leu Glu Ile Cys Leu Ser Gln Ala Pro Thr Asn
 130 135 140
 Arg Trp Met Leu Ile Ser Leu Gly Ser Asp Cys Ser Leu Glu Glu Ile
 145 150 155 160
 Ala Cys Lys Glu Ile Phe Asp Ser Trp Gln Arg Phe Ala Lys Leu Ile
 165 170 175
 Gly Ala Asn Ile Leu Val Tyr Asn Tyr Pro Gly Val Met Ser Ser Thr
 180 185 190
 Gly Ser Ser Ser Leu Lys Asp Leu Ala Ser Ala His Asn Ile Cys Thr
 195 200 205
 Arg Tyr Leu Lys Asp Lys Glu Gln Gly Pro Gly Ala Lys Glu Ile Ile
 210 215 220
 Thr Tyr Gly Tyr Ser Leu Gly Gly Leu Ile Gln Ala Glu Ala Leu Arg
 225 230 235 240
 Asp Gln Lys Ile Val Ala Asn Asp Asp Thr Thr Trp Ile Ala Val Lys
 245 250 255
 Asp Arg Cys Pro Leu Phe Ile Ser Pro Glu Gly Phe His Ser Cys Arg
 260 265 270
 Arg Ile Gly Lys Leu Val Ala Arg Leu Phe Gly Trp Gly Thr Lys Ala
 275 280 285
 Val Glu Arg Ser Gln Asp Leu Pro Cys Leu Glu Ile Phe Leu Tyr Pro
 290 295 300
 Thr Asp Ser Leu Arg Arg Ser Thr Val Arg Gln Asn Lys Leu Leu Ala
 305 310 315 320
 Pro Glu Leu Thr Leu Ala His Ala Ile Lys Asn Ser Pro Tyr Val Gln
 325 330 335
 Asn Lys Glu Phe Ile Glu Val Arg Leu Ser Ser Asp Ile Asp Pro Ile
 340 345 350
 Asp Ser Lys Thr Arg Val Ala Leu Ala Thr Pro Ile Leu Lys Lys Leu
 355 360 365
 Ser
 <210>1002
 <211>160
 <212>PRT

WO 9927105
<213>Chlamydia pneumoniae

<400>1002

Asn Lys Met Ser Glu Leu Ala Pro Cys Ser Thr Gly Leu Gln Met Val
1 5 10 15
Pro His Thr Gln Val His His Ala Leu Asp Thr Arg Arg Val Ile Leu
20 25 30
Thr Ile Ala Ala Cys Leu Ser Leu Ile Ala Gly Ile Val Leu Val Gly
35 40 45
Leu Gly Ala Ala Ala Ile Leu Pro Ser Leu Phe Gly Val Ile Gly Gly
50 55 60
Met Ile Leu Ile Leu Phe Ser Ser Ile Ala Leu Ile Tyr Leu Tyr Lys
65 70 75 80
Lys Thr Arg Glu Val Asp Gln Ile Ala Leu Glu Pro Leu Pro Glu Met
85 90 95
Ile Ser Lys Asp Gln Ser Ile Ile Asp Phe Val Lys Thr Arg Asp Tyr
100 105 110
Ala Ser Leu Glu Lys Lys Ala Thr Phe Ala Tyr Thr His Thr His Tyr
115 120 125
Tyr Asp Gly Ser Met Val Phe Tyr Arg Glu Ile Pro Arg Phe Met Leu
130 135 140
Gly Ser Tyr Leu Ala Leu Arg Lys Asp Met Asp Arg Gln Ala Leu Phe
145 150 155 160

<210>1003

<211>542

<212>PRT

<213>Chlamydia pneumoniae

<400>1003

Leu Gly Trp Lys Ser Asp Ile Tyr Thr Asn Ile Leu Glu Glu Arg Met
1 5 10 15
Thr Ala Arg Ala Glu Tyr Leu Asp His Glu Asp Phe Leu Tyr Arg Ser
20 25 30
His Lys Leu Gln Glu Leu Ser Glu Leu Gly Val Val Leu Tyr Pro Tyr
35 40 45
Glu Phe Pro Gly Val Phe Ser Cys Glu Asp Ile Lys Lys Thr Phe Ala
50 55 60
Ser Gln Glu Leu Gly Asn Ser Glu Ala Ala Met Ser Arg Ser Thr Pro
65 70 75 80
Arg Val Arg Phe Ala Gly Arg Leu Val Leu Phe Arg Ala Met Gly Lys
85 90 95
Asn Ala Phe Gly Gln Ile Leu Asp His Asn Gln Thr Ile Gln Val Met
100 105 110
Phe Asn Arg Glu Phe Thr Ser Val His Gly Leu Ser Glu Asp Ala Glu
115 120 125
Ile Thr Pro Ile Lys Phe Ile Glu Lys Lys Leu Asp Leu Gly Asp Ile
130 135 140
Leu Gly Ile Asp Gly Tyr Leu Phe Phe Thr His Ser Gly Glu Leu Thr
145 150 155 160
Val Leu Val Glu Thr Val Thr Leu Leu Cys Lys Ser Leu Leu Ser Leu
165 170 175
Pro Asp Lys His Ala Gly Leu Ser Asp Lys Glu Val Arg Tyr Arg Lys
180 185 190
Arg Trp Leu Asp Leu Ile Ser Ser Arg Glu Val Ser Asp Thr Phe Val
195 200 205
Lys Arg Ser Tyr Ile Ile Lys Leu Ile Arg Asn Tyr Met Asp Ala His
210 215 220
Gly Phe Leu Glu Val Glu Thr Pro Ile Leu Gln Asn Ile Tyr Gly Gly
225 230 235 240
Ala Glu Ala Lys Pro Phe Thr Thr Thr Met Glu Ala Leu His Ser Glu
245 250 255
Met Phe Leu Arg Ile Ser Leu Glu Ile Ala Leu Lys Lys Ile Leu Val
260 265 270
Gly Gly Ala Pro Arg Ile Tyr Glu Leu Gly Lys Val Phe Arg Asn Glu
275 280 285
Gly Ile Asp Arg Thr His Asn Pro Glu Phe Thr Met Ile Glu Ala Tyr

290 295 300
 Ala Ala Tyr Met Asp Tyr Lys Glu Val Met Val Phe Val Glu Asn Leu
 305 310 315
 Val Glu His Leu Val Arg Ala Val Asn His Asp Asn Thr Ser Leu Val
 325 330 335
 Tyr Ser Tyr Trp Lys His Gly Pro Gln Glu Val Asp Phe Lys Ala Pro
 340 345 350
 Trp Ile Arg Met Thr Met Lys Glu Ser Ile Ala Thr Tyr Ala Gly Ile
 355 360 365
 Asp Val Asp Val His Ser Asp Gln Lys Leu Lys Glu Ile Leu Lys Lys
 370 375 380
 Lys Thr Thr Phe Pro Glu Thr Ala Phe Ala Thr Ala Ser Arg Gly Met
 385 390 395 400
 Leu Ile Ala Ala Leu Phe Asp Glu Leu Val Ser Asp Asn Leu Ile Ala
 405 410 415
 Pro His His Ile Thr Asp His Pro Val Glu Thr Thr Pro Leu Cys Lys
 420 425 430
 Thr Leu Arg Ser Gly Asp Thr Ala Phe Val Glu Arg Phe Glu Ser Phe
 435 440 445
 Cys Leu Gly Lys Glu Leu Cys Asn Ala Tyr Ser Glu Leu Asn Asp Pro
 450 455 460
 Ile Arg Gln Arg Glu Leu Glu Gln Gln His Thr Lys Lys Glu Leu
 465 470 475 480
 Leu Pro Asp Ser Glu Cys His Pro Ile Asp Glu Glu Phe Leu Glu Ala
 485 490 495
 Leu Cys Gln Gly Met Pro Pro Ala Gly Gly Phe Gly Ile Gly Val Asp
 500 505 510
 Arg Leu Val Met Ile Leu Thr Asn Ala Ala Ser Ile Arg Asp Val Leu
 515 520 525
 Tyr Phe Pro Val Met Arg Arg Phe Asp Ala Glu Lys Thr Asn
 530 535 540
 <210>1004
 <211>308
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>1004
 Val Ala Tyr Ala Ala Ala Pro Glu Phe Leu Leu Met Ser Met Thr Lys
 1 5 10 15
 Lys Thr Gln Val Ile Leu Tyr Cys Gly Lys His Thr Ile Gln Asn Val
 20 25 30
 Met Ala Ser Phe Ile Gly Lys Val Leu Ser Gly Ile Gly Arg Pro Gly
 35 40 45
 Trp His Leu Glu Cys Ser Ile Met Ala Met Glu Leu Leu Gly Asp Ser
 50 55 60
 Leu Asp Ile His Ala Gly Val Asp Asn Ile Phe Pro His His Glu
 65 70 75 80
 Asn Glu Ile Ala Gln Ser Glu Ala Leu Ser Gly Lys Pro Phe Ala Arg
 85 90 95
 Tyr Trp Leu His Ser Glu His Leu Leu Ile Asp Gly Lys Lys Met Ser
 100 105 110
 Lys Ser Leu Gly Asn Phe Leu Thr Leu Arg Asp Leu Leu His Gln Glu
 115 120 125
 Phe Thr Gly Gln Glu Val Arg Tyr Met Leu Leu Gln Ser His Tyr Arg
 130 135 140
 Thr Gln Leu Asn Phe Thr Glu Glu Ala Leu Leu Ala Cys Arg His Ala
 145 150 155 160
 Leu Arg Arg Leu Lys Asp Phe Val Ser Arg Leu Glu Gly Val Asp Leu
 165 170 175
 Pro Gly Glu Ser Pro Leu Pro Arg Thr Leu Asp Ser Ser Ser Gln Phe
 180 185 190
 Ile Glu Ala Phe Ser Arg Ala Leu Ala Asn Asp Leu Asn Val Ser Thr
 195 200 205
 Gly Phe Ala Ser Leu Phe Asp Phe Val His Glu Ile Asn Thr Leu Ile
 210 215 220

Asp Gln Gly His Phe Ser Lys Ala Asp Ser Leu Tyr Ile Leu Asp Thr
 225 230 235 240
 Leu Lys Lys Val Asp Thr Val Leu Gly Val Leu Pro Leu Thr Thr Ser
 245 250 255
 Val Cys Ile Pro Glu Thr Val Met Gln Leu Val Ala Glu Arg Glu Glu
 260 265 270
 Ala Arg Lys Thr Lys Asn Trp Ala Met Ala Asp Thr Leu Arg Asp Glu
 275 280 285
 Ile Leu Ala Ala Gly Phe Leu Val Glu Asp Ser Lys Ser Gly Pro Lys
 290 295 300
 Val Lys Pro Leu
 305

<210>1005

<211>232

<212>PRT

<213>Chlamydia pneumoniae

<400>1005

Gly Leu Tyr Phe Tyr Asn Thr Ala Ser Gln Lys Lys Glu Leu Phe Phe
 1 5 10 15
 Pro Asn His Thr Pro Val Arg Leu Tyr Thr Cys Gly Pro Thr Val Tyr
 20 25 30
 Asp Tyr Ala His Ile Gly Asn Phe Arg Thr Tyr Val Phe Glu Asp Ile
 35 40 45
 Leu Lys Arg Thr Leu Val Phe Gly Tyr Ser Val Thr His Val Met
 50 55 60
 Asn Ile Thr Asp Val Glu Asp Lys Thr Ile Ala Gly Ala Ser Lys Lys
 65 70 75 80
 Asn Ile Pro Leu Gln Glu Tyr Thr Gln Pro Tyr Thr Glu Ala Phe Phe
 85 90 95
 Glu Asp Leu Asp Thr Leu Asn Ile Ala Arg Ala Asp Phe Tyr Pro His
 100 105 110
 Ala Thr His Tyr Ile Pro Gln Met Ile Gln Ala Ile Thr Lys Leu Leu
 115 120 125
 Glu Gln Gly Ile Ala Tyr Ile Gly Gln Asp Ala Ser Val Tyr Phe Ser
 130 135 140
 Leu Asn Arg Phe Pro Asn Tyr Gly Lys Leu Ser His Leu Asp Leu Ser
 145 150 155 160
 Ser Leu Arg Cys Cys Ser Arg Ile Ser Ala Asp Glu Tyr Asp Lys Glu
 165 170 175
 Asn Pro Ser Asp Phe Val Leu Trp Lys Ala Tyr Asn Pro Glu Arg Asp
 180 185 190
 Gly Val Ile Tyr Trp Glu Ser Pro Phe Gly Asn Arg Lys Thr Trp Met
 195 200 205
 Ala Phe Arg Met Phe Asp Tyr Gly Asp Gly Thr Ser Trp Arg Phe Phe
 210 215 220
 Gly Tyr Pro Cys Gly Arg Cys Arg
 225 230

<210>1006

<211>242

<212>PRT

<213>Chlamydia pneumoniae

<400>1006

Thr Ala Val Glu Asn Ile Arg Gln Gln Asn Leu Ala Leu Lys Ser Lys
 1 5 10 15
 Phe Lys Ile Asn Glu Leu Pro Cys Met Ile Leu Leu Ser His Glu Glu
 20 25 30
 Arg Glu Ile Tyr Arg Ile Gly Ser Phe Gly Asn Glu Thr Gly Ser Asn
 35 40 45
 Leu Gly Asp Ser Leu Cys His Ile Val Glu Ser Asp Ser Leu Leu Arg
 50 55 60
 Arg Ala Phe Pro Met Met Thr Ser Leu Ser Leu Ser Glu Leu Gln Arg
 65 70 75 80
 Tyr Tyr Arg Leu Ala Glu Glu Leu Ser His Lys Glu Phe Leu Lys His
 85 90 95

Ala Leu Glu Leu Gly Val Arg Ser Asp Asp Tyr Phe Phe Leu Ser Glu
 100 105 110
 Lys Phe Arg Leu Leu Val Glu Val Gly Lys Met Asp Ser Glu Glu Cys
 115 120 125
 Gln Arg Ile Lys Lys Arg Leu Leu Asn Lys Asp Pro Lys Asn Glu Lys
 130 135 140
 Gln Thr His Phe Thr Val Ala Leu Ile Glu Phe Gln Glu Leu Ala Lys
 145 150 155 160
 Arg Ser Arg Ala Gly Val Arg Gln Asp Ala Ser Gln Val Ile Ala Pro
 165 170 175
 Leu Glu Ser Tyr Ile Ser Gln Phe Gly Gln Gln Asp Lys Asp Asn Leu
 180 185 190
 Trp Arg Val Glu Met Met Ile Ala Gln Phe Tyr Leu Asp Ser Asp Gln
 195 200 205
 Trp His His Ala Leu Gln His Ala Glu Val Ala Phe Glu Ala Ala Pro
 210 215 220
 Asn Glu Val Arg Ser His Ile Ser Arg Ser Leu Glu Tyr Ile Arg His
 225 230 235 240
 Gln Ser

<210>1007

<211>139

<212>PRT

<213>Chlamydia pneumoniae

<400>1007

Val His Pro Leu Thr Leu Pro Lys Gln Ser Arg Val Leu Lys Arg Lys
 1 5 10 15
 Gln Phe Leu Tyr Ile Thr Arg Ser Gly Phe Cys Cys Arg Gly Ser Gln
 20 25 30
 Ala Thr Phe Tyr Val Val Pro Ser Arg His Pro Gly Thr Cys Arg Met
 35 40 45
 Gly Ile Thr Val Ser Lys Lys Phe Gly Lys Ala His Glu Arg Xaa Ser
 50 55 60
 Phe Lys Arg Val Val Arg Glu Val Phe Arg His Val Arg His Gln Leu
 65 70 75 80
 Pro Asn Cys Gln Ile Val Val Phe Pro Lys Gly His Lys Gln Arg Pro
 85 90 95
 Val Phe Ser Lys Leu Leu Gln Asp Phe Ile Asn Gln Ile Pro Glu Gly
 100 105 110
 Leu His Arg Leu Gly Lys Thr Lys Ala Thr Thr Gly Gly Glu Cys Thr
 115 120 125
 Pro Lys Ser Glu Lys Cys Val Thr Ala Pro Arg
 130 135

<210>1008

<211>101

<212>PRT

<213>Chlamydia pneumoniae

<400>1008

Met Ala Lys Lys Ser Ser Val Ala Arg Glu Ala Lys Arg Arg Arg Leu
 1 5 10 15
 Val Glu Ala Asn Phe Lys Lys Arg Ser Asp Leu Arg Lys Ile Val Lys
 20 25 30
 Ser Leu Ser Val Ser Glu Glu Glu Lys Glu Asn Ala Arg Ile Ser Leu
 35 40 45
 Asn Lys Met Lys Arg Asp Thr Ser Pro Thr Arg Leu His Asn Arg Cys
 50 55 60
 Leu Leu Thr Gly Arg Pro Arg Gly Tyr Leu Arg Lys Phe Ala Ile Ser
 65 70 75 80
 Arg Ile Cys Phe Arg Gln Met Ala Ser Met Gly Glu Ile Pro Gly Val
 85 90 95
 Ile Lys Ala Ser Trp
 100

<210>1009

<211>169

<212>PRT
 <213>Chlamydia pneumoniae
 <400>1009
 Gln Thr Ile Asn Leu Ser Gly Thr Leu Arg Thr Met Leu Pro Ile Ser
 1 5 10 15
 Ile Leu Leu Phe Tyr Val Ile Leu Gly Cys Leu Ser Ala Tyr Ile Ala
 20 25 30
 Asp Lys Lys Lys Arg Asn Val Ile Gly Trp Phe Phe Ala Gly Ala Phe
 35 40 45
 Phe Gly Phe Ile Gly Leu Val Leu Leu Leu Leu Pro Ser Arg Arg
 50 55 60
 Asn Ala Leu Glu Lys Pro Gln Asn Asp Pro Phe Asp Asn Ser Asp Leu
 65 70 75 80
 Phe Asp Asp Leu Lys Lys Ser Leu Ala Gly Asn Asp Glu Ile Pro Ser
 85 90 95
 Ser Gly Asp Leu Gln Glu Ile Val Ile Asp Thr Glu Lys Trp Phe Tyr
 100 105 110
 Leu Asn Lys Asp Arg Glu Asn Val Gly Pro Ile Ser Phe Glu Glu Leu
 115 120 125
 Val Val Leu Leu Lys Gly Lys Thr Tyr Pro Glu Glu Ile Trp Val Trp
 130 135 140
 Lys Lys Gly Met Lys Asp Trp Gln Arg Val Lys Asp Val Pro Ser Leu
 145 150 155 160
 Gln Gln Ala Leu Lys Glu Ala Ser Lys
 165

<210>1010
 <211>189
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>1010
 His Ile Asn Arg Trp Thr Ile Arg Leu Ser Leu Thr Leu Ile Ile Ser
 1 5 10 15
 Thr Val Leu Tyr Phe Phe Ser Glu Glu Ile Glu Leu Ile Gly Gly Gly
 20 25 30
 Lys Met Glu Lys Gln Asn Leu Lys Leu Asp Val Lys Glu Ile Glu Phe
 35 40 45
 Pro Glu Thr Val Phe Ser Arg Asp Ile Glu Thr Arg Val Ile Gln Val
 50 55 60
 Ile Ile Leu His Cys Leu Ala Lys Ile Asn Gly Val Ser Leu Leu Gly
 65 70 75 80
 Gly Asn Leu Ile Asp Ala Leu Phe Gly Arg Asp Ile Glu Arg Met Lys
 85 90 95
 Gly Ile Tyr Val Glu Gln Asp Ser Lys Asn His Leu Val Lys Val Arg
 100 105 110
 Val Glu Val Asn Val Asp Tyr Gly Val Ser Ile Pro Glu Lys Thr Glu
 115 120 125
 Glu Ile Gln Gly Cys Ile Val Ser Glu Ile Ser Glu Tyr Thr Gly Leu
 130 135 140
 His Val Ala Ala Val His Val Ile Ile Lys Gly Leu Thr Gln Pro Lys
 145 150 155 160
 Asp Arg Ile Asp Glu Glu Ile Glu Glu Glu Val Ser Val Gln Asp Leu
 165 170 175
 Pro Ser Pro Glu Asp Phe Leu Leu Glu Asn Ser Glu Gly
 180 185

<210>1011
 <211>603
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>1011
 Met Arg Ile Glu Asp Phe Ser Leu Lys Leu Ile Pro Ser Ser Pro Gly
 1 5 10 15
 Val Tyr Leu Met Lys Asp Val His Asp Gln Val Leu Tyr Ile Gly Lys
 20 25 30
 Ala Lys Asn Leu Lys Asn Arg Leu Ala Ser Tyr Phe His Glu Lys Gly

35 40 45
 Asp Ser Arg Glu Arg Ile Pro Phe Leu Met Lys Lys Thr Ala Ser Ile
 50 55 60
 Glu Thr Ile Val Val Ser Asn Glu Thr Glu Ala Leu Leu Glu Asn
 65 70 75 80
 Asn Leu Ile Lys Gln His His Pro Lys Tyr Asn Val Leu Leu Lys Asp
 85 90 95
 Asp Lys Thr Phe Cys Leu Ala Ile Ser Leu Ser His Ser Trp Pro
 100 105 110
 Lys Val Glu Ala Ile Arg Thr Lys Ala Ile Thr Ser Ser Gln Arg Gln
 115 120 125
 Leu Ile Phe Gly Pro Tyr Val Ser Ala Glu Ala Cys His Thr Leu Leu
 130 135 140
 Glu Val Ile Ser Gln Trp Phe Pro Leu Arg Thr Cys Ser Asp Arg Glu
 145 150 155 160
 Phe Ala Leu Arg Lys Arg Pro Cys Ile Leu Tyr Asp Met Lys Arg Cys
 165 170 175
 Leu Ala Pro Cys Val Gly Tyr Cys Thr Pro Glu Glu Tyr Gln Gly Thr
 180 185 190
 Leu Asp Lys Ala Ile Leu Phe Leu Lys Gly Lys Ile Glu Glu Val Val
 195 200 205
 Lys Asp Leu Glu Lys Val Ile Gln Lys Ala Ser Asp Asn Leu Glu Phe
 210 215 220
 Glu Gln Ala Ala Asn Tyr Tyr Arg Thr Leu Ser Leu Ile Lys Gln Ala
 225 230 235 240
 Met Ala Lys Gln Gln Val Glu Lys Phe His Phe Gln Asn Ile Asp Ala
 245 250 255
 Leu Gly Leu Tyr Arg His Lys Gln Arg Thr Ile Leu Thr Leu Leu Thr
 260 265 270
 Val Arg Ser Gly Lys Leu Leu Gly Ala Arg His Phe Ser Phe Phe Glu
 275 280 285
 Asn Ala Gln Glu Asp Gln Asp Leu Leu Ser Ser Phe Ile Leu Gln Tyr
 290 295 300
 Tyr Val Ser Gln Pro Tyr Ile Pro Lys Glu Ile Leu Thr Pro Leu Pro
 305 310 315 320
 Leu Glu Phe Pro Thr Leu Ser Tyr Val Leu Asn Ala Glu Ser Pro Pro
 325 330 335
 Arg Leu Arg Ser Pro Lys Thr Gly Tyr Gly Lys Glu Leu Leu Asp Leu
 340 345 350
 Ala Tyr Arg Asn Ala Lys Ala Tyr Ala Ala Thr Thr Leu Pro Ser Ser
 355 360 365
 Ser Ser Pro Thr Lys Thr Leu Arg Ile Ile Leu Arg Met Ser Gln Tyr
 370 375 380
 Pro Tyr Arg Ile Glu Cys Tyr Asp Asn Ala His Met Gln Gly Ala His
 385 390 395 400
 Ala Thr Gly Val Tyr Ile Val Phe Glu Asn Asn Gly Phe Asp Pro Lys
 405 410 415
 Gln Tyr Arg Thr Phe Ser Ile Asp Ser Glu Lys Thr Gln Asn Asp Leu
 420 425 430
 Ala Leu Leu Glu Glu Val Leu Leu Arg Arg Phe His Ser Leu Thr Thr
 435 440 445
 Ala Leu Pro Asp Met Ile Val Val Asp Gly Gly Lys Thr His Tyr Asn
 450 455 460
 Lys Thr Lys Lys Ile Ile Gln Thr Leu Asn Leu Thr Gly Ile Gln Val
 465 470 475 480
 Val Thr Ile Ala Lys Glu Lys Ser Asn His Ser Arg Gly Leu Asn Lys
 485 490 495
 Glu Lys Ile Phe Cys Glu Thr Phe Pro Glu Gly Phe Ser Leu Pro Pro
 500 505 510
 Thr Ser Asn Leu Leu Gln Phe Phe Gln Ile Leu Arg Asp Glu Ala His
 515 520 525
 Arg Phe Ala Ile Ser Lys His Arg Lys Lys Arg Gly Lys Ala Leu Phe
 530 535 540
 Glu Gln Glu Lys Ile Pro Gly Ile Gly Glu Val Lys Arg Lys Arg Leu

His Tyr Lys Glu Leu Thr Thr Leu Glu Asp His Cys Pro His Val Glu
 420 425 430
 Asn Phe His Ala Gly Val Lys Asp Lys Ala Gly Gln Pro Val Phe Leu
 435 440 445
 Tyr Glu Ile Leu Lys Asp Ile His Lys Lys Val Ser Ala Phe Met Ser
 450 455 460
 Pro Gly Leu Leu Ala Phe Pro Phe Val Trp Tyr Arg Glu Leu Ser Arg
 465 470 475 480
 Ser

<210>1013

<211>339

<212>PRT

<213>Chlamydia pneumoniae

<400>1013

Val Met Thr Glu Lys Lys Pro Thr Pro Met Met Glu Gln Trp His Gln
 1 5 10 15
 Cys Lys Glu Lys Ala Gly Asp Ser Val Leu Leu Phe Arg Met Gly Asp
 20 25 30
 Phe Tyr Glu Ala Phe Tyr Asp Asp Ala Val Leu Leu Ser Gln His Leu
 35 40 45
 Glu Leu Thr Leu Thr Gln Arg Gln Gly Ile Pro Met Ser Gly Ile Pro
 50 55 60
 Val Ser Thr Val Asp Thr Tyr Val Asp Arg Leu Ile Gly Lys Gly Phe
 65 70 75 80
 Lys Val Ala Val Ala Glu Gln Phe Gly Glu Pro Ala Lys Glu Lys Glu
 85 90 95
 Ser Lys Lys Ile Gly Pro Met Ala Arg Asp Ile Gln Arg Phe Val Thr
 100 105 110
 Pro Gly Thr Leu Leu Ser Ser Thr Leu Leu Gln Glu Lys Phe Asn Asn
 115 120 125
 Xaa Ile Val Ala Ile Thr Arg Ile Gly Ser Leu Phe Gly Phe Ala Cys
 130 135 140
 Leu Asp Leu Ser Thr Gly Ser Phe Phe Ile Glu Glu Cys Glu Asn Thr
 145 150 155 160
 Lys Glu Leu Val Asp Glu Ile Cys Arg Leu Ala Pro Ser Glu Val Leu
 165 170 175
 Ser Cys Asn Lys Phe Tyr Asn Lys Glu Thr Ala Ile Val Met Gln Leu
 180 185 190
 Gln Gln His Leu Lys Leu Thr Leu Ser Thr Tyr Ala Asp Trp Ala Phe
 195 200 205
 Glu His Lys Phe Ala Ser Gln Lys Leu Thr Thr His Phe Gln Val Ala
 210 215 220
 Ser Leu Asp Gly Phe Gly Leu Lys Gly Leu Val Pro Ala Ile Asn Ala
 225 230 235 240
 Ala Gly Gly Leu Leu Ser Tyr Ile Gln Asp Lys Leu Leu Leu Pro Thr
 245 250 255
 Lys His Ile Ala Ile Pro Gln Thr Arg Gly Lys Gln Gln Lys Leu Leu
 260 265 270
 Ile Asp Thr Ala Ser Gln Val Asn Leu Glu Leu Leu Ala Pro Leu Asn
 275 280 285
 Asp Pro Gln Gly Lys Asn Ser Leu Leu Arg Ile Met Asp His Thr Ser
 290 295 300
 Thr Pro Met Gly Gly Arg Leu Leu Arg Gln Ile Leu Ile Ser Pro Phe
 305 310 315 320
 Tyr Asn Pro Lys Glu Ile Leu Val Arg Gln Asp Ala Val Glu Phe Phe
 325 330 335
 Phe Gly Lys

<210>1014

<211>207

<212>PRT

<213>Chlamydia pneumoniae

<400>1014

Leu Arg Thr Ala Met Tyr Thr Glu Glu Ser Leu Asp Asn Leu Arg His
 1 5 10 15
 Ser Ile Asp Ile Val Asp Val Leu Ser Glu His Ile His Leu Lys Arg
 20 25 30
 Ser Gly Ala Thr Tyr Lys Ala Cys Cys Pro Phe His Thr Glu Lys Thr
 35 40 45
 Pro Ser Phe Ile Val Asn Pro Ala Gly Ala His Tyr His Cys Phe Gly
 50 55 60
 Cys Gly Ala His Gly Asp Ala Ile Gly Phe Leu Met Gln His Leu Gly
 65 70 75 80
 Tyr Ser Phe Thr Glu Ala Ile Leu Val Leu Ser Lys Lys Phe Gln Val
 85 90 95
 Asp Leu Val Leu Gln Pro Lys Asp Ser Gly Tyr Thr Pro Pro Gln Gly
 100 105 110
 Leu Lys Glu Glu Leu Arg His Ile Asn Ser Glu Ala Glu Thr Phe Phe
 115 120 125
 Arg Tyr Cys Leu Tyr His Leu Pro Glu Ala Arg His Ala Leu Gln Tyr
 130 135 140
 Leu Tyr His Arg Gly Phe Ser Pro Asp Thr Ile Asp Arg Phe His Leu
 145 150 155 160
 Gly Tyr Gly Pro Glu Gln Ser Leu Phe Leu Gln Ala Met Glu Glu Arg
 165 170 175
 Lys Ile Ser Gln Glu Gln Leu His Thr Ala Gly Phe Phe Gly Asn Lys
 180 185 190
 Trp Phe Leu Phe Ala Arg Arg Ile Ser Phe Leu Ser Thr Met Arg
 195 200 205

<210>1015

<211>402

<212>PRT

<213>Chlamydia pneumoniae

<400>1015

Met Val Phe Val Cys Thr Lys Asn Leu Phe Pro Val His Asp Ala Leu
 1 5 10 15
 Gly His Thr Ile Gly Phe Ser Ala Arg Lys Phe Leu Glu Asn Ser Gln
 20 25 30
 Gly Gly Lys Tyr Val Asn Thr Pro Glu Thr Pro Ile Phe Lys Lys Ser
 35 40 45
 Arg Ile Leu Phe Gly Leu Asn Phe Ser Arg Arg Arg Ile Ala Lys Glu
 50 55 60
 Xaa Lys Val Ile Leu Val Glu Gly Gln Ala Asp Cys Leu Gln Met Ile
 65 70 75 80
 Asp Ser Gly Phe Asn Cys Thr Val Ala Ala Gln Gly Thr Ala Phe Thr
 85 90 95
 Glu Glu His Val Lys Glu Leu Ser Lys Leu Gly Val Leu Lys Val Phe
 100 105 110
 Leu Leu Phe Asp Ser Asp Glu Ala Gly Asn Lys Ala Ala Leu Arg Val
 115 120 125
 Gly Asp Leu Cys Gln Thr Ala Gln Met Ser Val Phe Val Cys Lys Leu
 130 135 140
 Pro Gln Gly His Asp Pro Asp Ser Phe Leu Met Gln Arg Gly Ser Ser
 145 150 155 160
 Gly Leu Ile Ala Leu Leu Glu Gln Ser Gln Asp Tyr Leu Thr Phe Leu
 165 170 175
 Ile Ser Glu Lys Met Ser Ser Tyr Pro Lys Phe Gly Pro Arg Glu Lys
 180 185 190
 Ala Leu Leu Val Glu Glu Ala Ile Arg Gln Ile Lys His Trp Gly Ser
 195 200 205
 Pro Ile Leu Val Tyr Glu His Leu Lys Gln Leu Ala Ser Leu Met Met
 210 215 220
 Val Pro Glu Asp Met Val Leu Ser Leu Ala Asn Pro Gln Val Thr Ala
 225 230 235 240
 Glu Pro Gln Asn Ile Pro Ile Lys Gln Lys Val Pro Lys Ile His Pro
 245 250 255
 His Ile Val Met Glu Thr Asp Ile Leu Arg Cys Met Leu Phe Cys Gly

260 265 270
 Ser Asn Thr Lys Ile Leu Tyr Thr Ala Gln Phe Tyr Phe Val Pro Glu
 275 280 285
 Asp Phe Lys His Pro Glu Cys Arg Lys Leu Phe Ala Phe Met Ile Ser
 290 295 300
 Tyr Tyr Glu Lys Tyr Arg Lys Asn Val Pro Phe Asp Glu Ala Cys Gln
 305 310 315 320
 Val Leu Ser Asp Ser Gln Ile Leu Gln Leu Leu Thr Lys Arg Arg Leu
 325 330 335
 Asn Thr Glu Ala Leu Asp Thr Ile Phe Val Gln Ser Leu Gln Lys Met
 340 345 350
 Ala Asp Arg Arg Trp Arg Glu Gln Cys Lys Pro Leu Ser Leu Asn Gln
 355 360 365
 Asn Ile Gln Asp Lys Lys Leu Glu Ile Leu Glu Asp Tyr Val Gln Leu
 370 375 380
 Arg Lys Asp Arg Thr Ile Ile Thr Leu Leu Asp Pro Glu Ser Glu Leu
 385 390 395 400
 Ile Pro

<210>1016

<211>120

<212>PRT

<213>Chlamydia pneumoniae

<400>1016

Ile Lys Ile Met Met His Arg Tyr Phe Ile Pro Leu Leu Ala Leu Leu
 1 5 10 15
 Ile Phe Ser Pro Ser Leu Val Arg Ala Glu Leu Gln Pro Ser Glu Asn
 20 25 30
 Arg Lys Gly Gly Trp Pro Thr Gln Leu Ser Cys Ala Glu Gly Ser Gln
 35 40 45
 Leu Phe Cys Lys Phe Glu Ala Tyr Asn Asn Ala Ile Glu Glu Gly
 50 55 60
 Lys Pro Gly Ile Leu Val Phe Phe Ser Glu Arg Pro Thr Pro Glu Phe
 65 70 75 80
 Ala Asp Leu Thr Asn Gly Ser Phe Ser Leu Ser Thr Pro Ile Ala Lys
 85 90 95
 Gly Phe Asn Val Val Val Leu Cys Pro Gly Leu Ile Ser Pro Leu Asp
 100 105 110
 Phe Phe His Gln Asn Gly Ile Leu
 115 120

<210>1017

<211>220

<212>PRT

<213>Chlamydia pneumoniae

<400>1017

Ser Ile Phe Lys Asn Lys Ile Leu Pro Ser Tyr Phe Gly His Asn Phe
 1 5 10 15
 Asp Gln Leu Arg Arg His Tyr Met Arg Ile Ala Leu Ser Leu Leu Ser
 20 25 30
 Leu Leu Met Ile Phe Pro Ile Phe Gly Glu Glu Ser Arg Pro Gly Ser
 35 40 45
 Glu Asp Gly Asn Ser Asn Thr Gln Glu Ile Val Gly Ser Gln Asp Thr
 50 55 60
 Gln Val Cys Leu Tyr His Ser Tyr Glu Gln Gly Leu Gln Ala Ser Arg
 65 70 75 80
 Ile Glu Gly Lys Pro Leu Val Ile Val Val Leu Cys Asn Ser Gly Asp
 85 90 95
 Asp Gly Gln Ala Cys Thr Ile Gly Leu Ser Glu Thr Cys Glu Glu Val
 100 105 110
 Leu Ser Val Leu Ser Gly Ser Ile Phe Ser Glu Leu Ala Asn Phe Val
 115 120 125
 Val Leu Val Pro Ser Gly Val Asn Pro Leu Ile Tyr Pro Pro Ile Glu
 130 135 140
 Asp Pro Ile Leu Ala Glu Ile Val Lys Phe Lys Glu Leu Phe Lys Asp

145 150 155 160
 Glu Ser Phe Pro Thr Gly Leu Ser Ile Ile Val Val Gly Val Thr Pro
 165 170 175
 Glu Gly Pro Gly Asp Ile Ile Glu Val Ser Pro Val Ser Leu Thr Val
 180 185 190
 Glu Glu Glu Glu Thr Leu Pro Ser Glu Gln Thr Thr Glu Val Glu Ser
 195 200 205
 Thr Ser Glu Leu Gln Ser Glu Asp Pro Ala Ile Ala
 210 215 220
 <210>1018
 <211>1014
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>1018
 Leu Glu Ser Phe Val Ser Glu His Pro Leu Thr Leu Gln Ser Met Ile
 1 5 10 15
 Ala Thr Ile Leu Arg Phe Trp Ser Glu Gln Gly Cys Val Ile His Gln
 20 25 30
 Gly Tyr Asp Leu Glu Val Gly Ala Gly Thr Phe Asn Pro Ala Thr Phe
 35 40 45
 Leu Arg Ala Leu Gly Pro Glu Pro Tyr Lys Ala Ala Tyr Val Glu Pro
 50 55 60
 Ser Arg Arg Pro Gln Asp Gly Arg Tyr Gly Val His Pro Asn Arg Leu
 65 70 75 80
 Gln Asn Tyr His Gln Leu Gln Val Ile Leu Lys Pro Val Pro Glu Asn
 85 90 95
 Phe Leu Ser Leu Tyr Thr Glu Ser Leu Arg Ala Ile Gly Leu Asp Leu
 100 105 110
 Arg Asp His Asp Ile Arg Phe Ile His Asp Asp Trp Glu Asn Pro Thr
 115 120 125
 Ile Gly Ala Trp Gly Leu Gly Trp Glu Val Trp Leu Asn Gly Met Glu
 130 135 140
 Ile Thr Gln Leu Thr Tyr Phe Gln Ala Ile Gly Ser Lys Pro Leu Asp
 145 150 155 160
 Thr Ile Ser Gly Glu Ile Thr Tyr Gly Ile Glu Arg Ile Ala Met Tyr
 165 170 175
 Leu Gln Lys Lys Thr Ser Ile Tyr Asp Val Leu Trp Asn Asp Thr Leu
 180 185 190
 Thr Tyr Gly Gln Ile Thr Gln Ala Ser Glu Lys Ala Trp Ser Glu Tyr
 195 200 205
 Asn Phe Asp Tyr Ala Asn Thr Glu Met Trp Phe Lys His Phe Glu Asp
 210 215 220
 Phe Ala Glu Glu Ala Leu Arg Thr Leu Lys Asn Gly Leu Ser Val Pro
 225 230 235 240
 Ala Tyr Asp Phe Val Ile Lys Ala Ser His Ala Phe Asn Ile Leu Asp
 245 250 255
 Ala Arg Gly Thr Ile Ser Val Thr Glu Arg Thr Arg Tyr Ile Ala Arg
 260 265 270
 Ile Arg Gln Leu Thr Arg Leu Val Ala Asp Ser Tyr Val Glu Trp Arg
 275 280 285
 Ala Ser Leu Asn Tyr Pro Leu Leu Ser Leu Ser Ser Thr Ser Glu Pro
 290 295 300
 Lys Glu Thr Ser Glu Ser Val Val Pro Met Ile Ser Ser Thr Glu Asp
 305 310 315 320
 Leu Leu Leu Glu Ile Gly Ser Glu Glu Leu Pro Ala Thr Phe Val Pro
 325 330 335
 Ile Gly Ile Gln Gln Leu Glu Ser Leu Ala Arg Gln Val Leu Thr Asp
 340 345 350
 His Asn Ile Val Tyr Glu Gly Leu Glu Val Leu Gly Ser Pro Arg Arg
 355 360 365
 Leu Ala Leu Leu Val Lys Asn Val Ala Pro Glu Val Val Gln Lys Ala
 370 375 380
 Phe Glu Lys Lys Gly Pro Met Leu Thr Ser Leu Phe Ser Pro Asp Gly
 385 390 395 400

Asp	Val	Ser	Pro	Gln	Gly	Gln	Gln	Phe	Phe	Ala	Ser	Gln	Gly	Val	Asp	405	410	415
Ile	Ser	His	Tyr	Gln	Asp	Leu	Ser	Arg	His	Ala	Ser	Leu	Ala	Ile	Arg	420	425	430
Thr	Val	Asn	Gly	Ser	Glu	Tyr	Leu	Phe	Leu	Leu	His	Pro	Glu	Ile	Arg	435	440	445
Leu	Arg	Thr	Ala	Asp	Ile	Leu	Met	Gln	Glu	Leu	Pro	Leu	Leu	Ile	Gln	450	455	460
Arg	Met	Lys	Phe	Pro	Lys	Lys	Met	Val	Trp	Asp	Asn	Ser	Gly	Val	Glu	465	470	475
Tyr	Ala	Arg	Pro	Ile	Arg	Trp	Leu	Val	Ala	Leu	Tyr	Gly	Glu	His	Ile	485	490	495
Leu	Pro	Ile	Thr	Leu	Gly	Thr	Ile	Ile	Ala	Ser	Arg	Asn	Ser	Phe	Gly	500	505	510
His	Arg	Gln	Leu	Asp	Pro	Arg	Lys	Ile	Ser	Ile	Ser	Ser	Pro	Gln	Asp	515	520	525
Tyr	Val	Glu	Thr	Leu	Arg	Gln	Ala	Cys	Val	Val	Val	Ser	Gln	Lys	Glu	530	535	540
Arg	Arg	Met	Ile	Ile	Glu	Gln	Gly	Leu	Arg	Ala	His	Ser	Ser	Asp	Thr	545	550	555
Ile	Ser	Ala	Ile	Pro	Leu	Pro	Arg	Leu	Ile	Glu	Glu	Ala	Thr	Phe	Leu	565	570	575
Ser	Glu	His	Pro	Phe	Val	Ser	Cys	Gly	Gln	Phe	Ser	Glu	Gln	Phe	Cys	580	585	590
Ala	Leu	Pro	Lys	Glu	Leu	Leu	Ile	Ala	Glu	Met	Val	Asn	His	Gln	Lys	595	600	605
Tyr	Phe	Pro	Thr	His	Glu	Thr	Ser	Ser	Gly	Ala	Ile	Ser	Asn	Phe	Phe	610	615	620
Ile	Val	Val	Cys	Asp	Asn	Ser	Pro	Asn	Asp	Thr	Ile	Ile	Glu	Gly	Asn	625	630	635
Glu	Lys	Ala	Leu	Thr	Pro	Arg	Leu	Thr	Asp	Gly	Glu	Phe	Leu	Phe	Lys	645	650	655
Gln	Asp	Leu	Gln	Thr	Pro	Leu	Thr	Thr	Phe	Ile	Glu	Lys	Leu	Lys	Ser	660	665	670
Val	Thr	Tyr	Phe	Glu	Ala	Leu	Gly	Ser	Leu	Tyr	Asp	Lys	Val	Glu	Arg	675	680	685
Leu	Lys	Ala	His	Gln	Arg	Val	Phe	Ser	Thr	Phe	Ser	Ser	Leu	Ala	Ala	690	695	700
Ser	Glu	Asp	Leu	Asp	Ile	Ala	Ile	Gln	Tyr	Cys	Lys	Ala	Asp	Leu	Val	705	710	715
Ser	Ala	Val	Val	Asn	Glu	Phe	Pro	Glu	Leu	Gln	Gly	Ile	Met	Gly	Glu	725	730	735
Tyr	Tyr	Leu	Lys	His	Ala	Asn	Leu	Pro	Thr	Ala	Ser	Ala	Val	Ala	Val	740	745	750
Gly	Glu	His	Leu	Arg	His	Ile	Thr	Met	Gly	Gln	Lys	Leu	Ser	Thr	Ile	755	760	765
Gly	Thr	Leu	Leu	Ser	Leu	Leu	Asp	Arg	Leu	Asp	Asn	Leu	Leu	Ala	Cys	770	775	780
Phe	Ile	Leu	Gly	Leu	Lys	Pro	Thr	Ser	Ser	His	Asp	Pro	Tyr	Ala	Leu	785	790	795
Arg	Arg	Gln	Ser	Leu	Glu	Val	Leu	Thr	Leu	Val	Ser	Ala	Ser	Arg	Leu	805	810	815
Pro	Ile	Asp	Leu	Ala	Ser	Leu	Leu	Asp	Arg	Leu	Ala	Asp	His	Phe	Pro	820	825	830
Ser	Thr	Ile	Glu	Glu	Lys	Val	Trp	Asp	Lys	Ser	Lys	Thr	Ile	His	Glu	835	840	845
Ile	Leu	Glu	Phe	Ile	Trp	Gly	Arg	Leu	Lys	Thr	Phe	Met	Gly	Ser	Leu	850	855	860
Glu	Phe	Arg	Lys	Asp	Glu	Ile	Ala	Ala	Val	Leu	Ile	Asp	Ser	Ala	Thr	865	870	875
Xaa	Asn	Pro	Ile	Glu	Ile	Leu	Asp	Thr	Ala	Glu	Ala	Leu	Gln	Leu	Leu	885	890	895
Lys	Glu	Glu	His	Thr	Glu	Lys	Leu	Ala	Val	Ile	Thr	Thr	Thr	His	Asn	900	905	910

Arg Leu Lys Lys Ile Leu Ser Ser Leu Lys Leu Ser Met Thr Ser Ser
 915 920 925
 Pro Ile Glu Val Leu Gly Asp Arg Glu Ser Asn Phe Lys Gln Val Leu
 930 935 940
 Asp Ala Phe Pro Gly Phe Pro Lys Glu Thr Ser Ala His Ala Phe Leu
 945 950 955 960
 Glu Tyr Phe Leu Ser Leu Ala Asp Leu Ser Asn Asp Ile Gln Asp Phe
 965 970 975
 Leu Asn Thr Val His Ile Ala Asn Asp Asp Gly Ala Ile Arg Asn Leu
 980 985 990
 Arg Ile Ser Leu Leu Leu Thr Ala Met Asp Lys Phe Ser Leu Cys His
 995 1000 1005
 Trp Glu Ser Val Ala Val
 1010

<210>1019

<211>97

<212>PRT

<213>Chlamydia pneumoniae

<400>1019

Asn Gly Asn Asp Val Leu Lys Thr Cys Ser Leu Ile Leu Leu Asn Leu
 1 5 10 15
 Cys Arg Tyr Phe Leu Leu Val Phe Cys Thr Ala Val Phe Phe Lys Arg
 20 25 30
 Tyr Ile Leu Ile Leu Thr Arg Thr Val Arg His Thr Glu Ile Tyr Ala
 35 40 45
 Cys Gly Glu Gly Val Thr Val Ala Leu Lys Ser Met Leu Pro Ser Met
 50 55 60
 Lys Gln Glu Ser Pro Ala Leu Ala Lys Glu Asn Val Lys Arg Lys Asn
 65 70 75 80
 Val Ile Pro Trp Ser His Leu Cys Gln Asn Ile Pro Ser Pro Tyr Ser
 85 90 95
 Leu

<210>1020

<211>207

<212>PRT

<213>Chlamydia pneumoniae

<400>1020

Arg Val Gly Leu Pro Asn Tyr Ile Thr Phe Ser Arg Leu Phe Ile Thr
 1 5 10 15
 Pro Ile Phe Met Ile Leu Tyr Leu Lys Gly Lys Trp Phe Gly Ile Thr
 20 25 30
 Pro Val Val Leu Pro Tyr Val Leu Leu Ala Leu Leu Ala Ile Ser Glu
 35 40 45
 Leu Thr Asp Ala Ile Asp Gly Tyr Val Ala Arg Lys Phe Ser Gln Val
 50 55 60
 Thr Asp Leu Gly Lys Leu Leu Asp Pro Met Ala Asp Ser Ile Tyr Arg
 65 70 75 80
 Ile Ser Ile Tyr Leu Thr Phe Thr Gln Pro Pro Val Asn Leu Pro Leu
 85 90 95
 Leu Leu Val Phe Ile Phe Leu Ala Arg Asp Ser Val Ile Ser Thr Leu
 100 105 110
 Arg Thr Val Cys Ala Phe Arg Gly Arg Val Val Ala Ala Arg Ala Ser
 115 120 125
 Gly Lys Leu Lys Ala Ile Leu Gln Gly Val Ser Phe Phe Leu Ile Leu
 130 135 140
 Leu Val Met Ile Pro His Ser Leu Gly Leu Leu Ser Gln Asn Gly Leu
 145 150 155 160
 Glu Ile Phe Ala Ser Val Thr Val Ser Ile Ile Ala Val Tyr Ser Ile
 165 170 175
 Ala Ser Gly Ile Glu Tyr Phe Trp Met Asn Lys Asn Phe Leu Ser Gln
 180 185 190
 Arg Ala Lys Thr Lys Asp Ser Glu Lys Asn His Glu Ser Lys Asp
 195 200 205

<210>1021

<211>476

<212>PRT

<213>Chlamydia pneumoniae

<400>1021

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Met Arg Ile Val Gln Val Ala Val Glu Phe Thr Pro Ile Val Lys Val
 1           5           10           15
Gly Gly Leu Gly Asp Ala Val Ala Ser Leu Ser Lys Glu Leu Ala Lys
          20           25           30
Gln Asn Asp Val Glu Val Leu Leu Pro His Tyr Pro Leu Ile Ser Lys
          35           40           45
Phe Ser Ser Ser Gln Val Leu Ser Glu Arg Ser Phe Tyr Tyr Glu Phe
          50           55           60
Leu Gly Lys Gln Gln Ala Ser Ala Ile Ser Tyr Ser Tyr Glu Gly Leu
          65           70           75           80
Thr Leu Thr Ile Ile Thr Leu Asp Ser Gln Ile Glu Leu Phe Ser Thr
          85           90           95
Thr Ser Val Tyr Ser Glu Asn Asn Val Val Arg Phe Ser Ala Phe Ala
          100          105          110
Ala Ala Ala Ala Tyr Leu Gln Glu Ala Asp Pro Ala Asp Ile Val
          115          120          125
His Leu His Asp Trp His Val Gly Leu Leu Ala Gly Leu Leu Lys Asn
          130          135          140
Pro Leu Asn Pro Val His Ser Lys Ile Val Phe Thr Ile His Asn Phe
          145          150          155          160
Gly Tyr Arg Gly Tyr Cys Ser Thr Gln Leu Leu Ala Ala Ser Gln Ile
          165          170          175
Asp Asp Phe His Leu Ser His Tyr Gln Leu Phe Arg Asp Pro Gln Thr
          180          185          190
Ser Val Leu Met Lys Gly Ala Leu Tyr Cys Ser Asp Tyr Ile Thr Thr
          195          200          205
Val Ser Leu Thr Tyr Val Gln Glu Ile Ile Asn Asp Tyr Ser Asp Tyr
          210          215          220
Glu Leu His Asp Ala Ile Leu Ala Arg Asn Ser Val Phe Ser Gly Ile
          225          230          235          240
Ile Asn Gly Ile Asp Glu Asp Val Trp Asn Pro Lys Thr Asp Pro Ala
          245          250          255
Leu Ala Val Gln Tyr Asp Ala Ser Leu Leu Ser Glu Pro Asp Val Leu
          260          265          270
Phe Thr Lys Lys Glu Glu Asn Arg Ala Val Leu Tyr Glu Lys Leu Gly
          275          280          285
Ile Ser Ser Asp Tyr Phe Pro Leu Ile Cys Val Ile Ser Arg Ile Val
          290          295          300
Glu Glu Lys Gly Pro Glu Phe Met Lys Glu Ile Ile Leu His Ala Met
          305          310          315          320
Glu His Ser Tyr Ala Phe Ile Leu Ile Gly Thr Ser Gln Asn Glu Val
          325          330          335
Leu Leu Asn Glu Phe Arg Asn Leu Gln Asp Cys Leu Ala Ser Ser Pro
          340          345          350
Asn Ile Arg Leu Ile Leu Asp Phe Asn Asp Pro Leu Ala Arg Leu Thr
          355          360          365
Tyr Ala Ala Ala Asp Met Ile Cys Ile Pro Ser His Arg Glu Ala Cys
          370          375          380
Gly Leu Thr Gln Leu Ile Ala Met Arg Tyr Gly Thr Val Pro Leu Val
          385          390          395          400
Arg Lys Thr Gly Gly Leu Ala Asp Thr Val Ile Pro Gly Val Asn Gly
          405          410          415
Phe Thr Phe Phe Asp Thr Asn Asn Phe Asn Glu Phe Arg Ala Met Leu
          420          425          430
Ser Asn Ala Val Thr Thr Tyr Arg Gln Glu Pro Asp Val Trp Leu Asn
          435          440          445
Leu Ile Glu Ser Gly Met Leu Arg Ala Ser Gly Leu Asp Ala Met Ala
          450          455          460
Lys His Tyr Val Asn Leu Tyr Gln Ser Leu Leu Ser

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465

470

475

<210>1022

<211>185

<212>PRT

<213>Chlamydia pneumoniae

<400>1022

Met Glu Leu Val Val Thr Ser Arg Glu Thr Gly Lys Lys Ser Phe Leu
 1 5 10 15
 Lys Lys Ile Arg Gln Gln Gly Gly Ile Pro Ala Val Val Tyr Ser Ala
 20 25 30
 Gly Lys Ser Leu Ala Asn Ile Thr Val Asp Ala Leu Val Phe Lys Lys
 35 40 45
 Phe Leu Ser Asn Leu Glu Ser Gly Ala Leu Ser Ser Thr Val Phe Ser
 50 55 60
 Leu Ser Tyr Glu Gly Arg Ile Ile Lys Ala Leu Val Lys Asp Ile Gln
 65 70 75 80
 Tyr Gln Ile Thr Thr Tyr Asp Val Ile His Leu Asp Phe Glu Glu Leu
 85 90 95
 Val Glu Asp Arg Pro Val Lys Leu Asn Ile Pro Ile Arg Cys Ile Asn
 100 105 110
 Ala Val Asp Cys Ile Gly Val Lys Leu Gly Gly Ser Leu Arg Gln Val
 115 120 125
 Ile Arg Ala Val Arg Val Val Cys Lys Pro Lys Asp Ile Val Pro Phe
 130 135 140
 Leu Glu Leu Asp Val Arg Ser Val Gly Leu Ser Gln Thr Arg Lys Leu
 145 150 155 160
 Ser Asp Ile Lys Ile Pro Ala Gly Ile Glu Thr Ile Thr Pro Leu Lys
 165 170 175
 Glu Val Ala Ile Thr Val Ser Arg Arg
 180 185

<210>1023

<211>150

<212>PRT

<213>Chlamydia pneumoniae

<400>1023

Met Ala Lys Leu Ile Val Ala Ile Gly Asn Pro Arg His Gly Tyr Ala
 1 5 10 15
 Asn Thr Arg His Asn Ala Gly Phe Leu Leu Ala Asp Arg Leu Val Glu
 20 25 30
 Glu Leu Gln Gly Pro Pro Phe Lys Pro Leu Ser Lys Cys His Ala Leu
 35 40 45
 Met Thr Leu Val Glu Ser Ser Ser Gly Pro Leu Val Phe Ile Lys Pro
 50 55 60
 Thr Thr Phe Val Asn Leu Ser Gly Lys Ala Val Val Leu Ala Lys Lys
 65 70 75 80
 Tyr Phe Asn Val Ala Leu Ser His Ile Leu Val Leu Ala Asp Asp Val
 85 90 95
 Asn Arg Ser Phe Gly Lys Leu Arg Leu Cys Phe Asn Gly Gly Ser Gly
 100 105 110
 Gly His Asn Gly Leu Lys Ser Ile Thr Ala Ser Leu Gly Ser Asn Glu
 115 120 125
 Tyr Trp Gln Leu Arg Phe Gly Val Gly Arg Pro Leu Glu Glu Val Leu
 130 135 140
 Ser Tyr Leu Ile Ser Phe
 145 150

<210>1024

<211>112

<212>PRT

<213>Chlamydia pneumoniae

<400>1024

Met Gly Lys Lys Glu Asn Gln Leu Tyr Glu Gly Ala Tyr Val Phe Ser
 1 5 10 15
 Val Thr Leu Ser Glu Glu Ala Arg Arg Lys Ala Leu Asp Lys Val Ile
 20 25 30

Ser Gly Ile Thr Asn Tyr Gly Gly Glu Ile His Lys Ile His Asp Gln
 35 40 45
 Gly Arg Lys Lys Leu Ala Tyr Thr Ile Arg Gly Ala Arg Glu Gly Tyr
 50 55 60
 Tyr Tyr Phe Ile Tyr Phe Ser Val Ser Pro Gly Ala Ile Thr Glu Leu
 65 70 75 80
 Trp Lys Glu Tyr His Leu Asn Glu Asp Leu Leu Arg Phe Met Thr Leu
 85 90 95
 Arg Ala Asp Ser Val Lys Glu Val Leu Glu Phe Ala Ser Leu Pro Glu
 100 105 110

<210>1025

<211>82

<212>PRT

<213>Chlamydia pneumoniae

<400>1025

Met Asn Lys Pro Val His Asn Asn Glu His Arg Arg Lys Arg Phe Asn
 1 5 10 15
 Lys Lys Cys Pro Phe Val Ser Ala Gly Trp Lys Thr Ile Asp Tyr Lys
 20 25 30
 Asp Val Glu Thr Leu Lys Lys Phe Ile Thr Glu Arg Gly Lys Val Leu
 35 40 45
 Pro Arg Arg Ile Thr Gly Val Ser Ser Arg Phe Gln Gly Val Leu Ser
 50 55 60
 Gln Ala Ile Lys Arg Ala Arg His Leu Gly Leu Leu Pro Phe Val Gly
 65 70 75 80
 Glu Asp

<210>1026

<211>169

<212>PRT

<213>Chlamydia pneumoniae

<400>1026

Met Lys Gln Gln Leu Leu Leu Glu Asp Val Asp Gly Leu Gly Arg
 1 5 10 15
 Ser Gly Asp Leu Ile Thr Ala Arg Pro Gly Tyr Val Arg Asn Tyr Leu
 20 25 30
 Ile Pro Lys Lys Lys Ala Val Ile Ala Gly Ala Gly Thr Leu Arg Leu
 35 40 45
 Gln Ala Lys Leu Lys Glu Gln Arg Leu Ile Gln Ala Ala Ala Asp Lys
 50 55 60
 Ala Asp Ser Glu Arg Ile Ala Gln Ala Leu Lys Asp Ile Val Leu Glu
 65 70 75 80
 Phe Gln Val Arg Val Asp Pro Asp Asn Asn Met Tyr Gly Ser Val Thr
 85 90 95
 Ile Ala Asp Ile Ile Ala Glu Ala Ala Lys Lys Asn Ile Phe Leu Val
 100 105 110
 Arg Lys Asn Phe Pro His Ala His Tyr Ala Ile Lys Asn Leu Gly Lys
 115 120 125
 Lys Asn Ile Pro Leu Lys Leu Lys Glu Glu Val Thr Ala Thr Leu Leu
 130 135 140
 Val Glu Val Thr Ser Asp Asn Glu Tyr Val Thr Val Leu Ala Gln Gly
 145 150 155 160
 Lys Gln Thr Glu Glu Asn Gln Glu Gly
 165

<210>1027

<211>81

<212>PRT

<213>Chlamydia pneumoniae

<400>1027

Val Gly Arg Glu Cys Glu Gly Leu Phe Met Ser Tyr Lys Ile Thr Leu
 1 5 10 15
 Pro Lys Ala Asp Glu Thr Thr Ala Lys Lys Val Thr Lys Ile Ser Glu
 20 25 30
 Ala Ser Thr Leu Ile Phe Ser Val Leu Lys Glu Lys Ala Ser Leu Gly

[illegible]

<210>1028

<211>455

<212>PRT

<213>Chlamydia pneumoniae

<400>1028

400>1028

Leu	Val	Trp	Phe	Ser	Met	Ile	Leu	Pro	Tyr	Ser	Tyr	Ser	Leu	Lys
1				5				10					15	
Ile	Gly	Ala	Ala	Val	Leu	Phe	Phe	Cys	Ser	Ile	Leu	His	Thr	Phe
			20					25				30		Leu
Thr	Pro	Trp	Leu	Tyr	Thr	Leu	Cys	Gln	Ser	Tyr	Glu	His	Lys	Lys
		35				40					45			Leu
Val	Phe	Pro	Glu	Cys	Trp	Lys	Arg	Tyr	Ala	Arg	Leu	Ser	Glu	Leu
	50					55			60					Phe
Arg	Ile	Leu	Ser	Arg	Val	Glu	Ile	Val	Phe	Phe	Leu	Trp	Ala	Val
	65				70				75					Pro
Leu	Phe	Phe	Trp	Phe	Leu	Tyr	Thr	Glu	Gly	Tyr	Arg	Ile	Ser	Met
				85				90					95	Ala
Tyr	Phe	Asn	Ser	Arg	Asn	Tyr	Gly	Phe	Ala	Val	Phe	Ile	Met	Val
		100					105					110		Ile
Leu	Ile	Leu	Leu	Glu	Ser	Arg	Pro	Ile	Val	Tyr	Phe	Ala	Glu	Leu
		115					120					125		Val
Leu	Ser	Ser	Ile	Ala	Lys	Leu	Gly	Lys	Thr	Ser	Pro	Lys	Ser	Trp
	130					135					140			Trp
Trp	Thr	Leu	Met	Ile	Ala	Pro	Pro	Leu	Leu	Ser	Cys	Leu	Leu	Lys
	145				150					155				Glu
Thr	Gly	Ala	Met	Ile	Ile	Gly	Ala	Thr	Leu	Leu	Met	Arg	His	Phe
			165					170						Tyr
Val	Phe	Thr	Pro	Ser	Arg	Arg	Phe	Ala	Tyr	Ala	Thr	Ile	Gly	Leu
			180				185					190		Leu
Phe	Ser	Asn	Ile	Ser	Ile	Gly	Gly	Leu	Thr	Ser	Tyr	Val	Ser	Ser
	195					200						205		Arg
Ala	Leu	Phe	Leu	Ile	Phe	Pro	Ala	Leu	Lys	Trp	Glu	His	Ser	Phe
	210				215						220			Phe
Leu	Ser	His	Phe	Ala	Trp	Lys	Ala	Ile	Val	Ala	Ile	Leu	Ile	Ser
	225				230					235				Thr
Thr	Ile	Tyr	Tyr	Phe	Ile	Phe	Arg	Lys	Glu	Phe	Lys	Lys	Phe	Pro
			245						250					Asp
Ile	Pro	Ser	Asp	Lys	Asp	Pro	Ser	Val	Glu	Lys	Val	Pro	Trp	Trp
			260					265					270	Ile
Ile	Cys	Val	Asn	Ile	Ile	Phe	Val	Gly	Ser	Ile	Ile	Leu	Ser	Arg
	275					280						285		Ser
Thr	Pro	Leu	Phe	Met	Gly	Ala	Leu	Leu	Phe	Tyr	Leu	Gly	Phe	Gln
	290				295					300				
Lys	Phe	Thr	Ile	Phe	Tyr	Gln	Asp	Pro	Ile	Asn	Leu	Ser	Lys	Val
	305				310					315				Cys
Tyr	Val	Gly	Leu	Phe	Tyr	Ala	Gly	Leu	Val	Val	Phe	Gly	Asp	Leu
			325					330						Gln
Glu	Trp	Trp	Val	Leu	Asn	Leu	Met	Gln	Gly	Leu	Ser	Asp	Phe	Gly
			340					345					350	Tyr
Met	Thr	Val	Ser	Tyr	Thr	Leu	Ser	Ile	Phe	Leu	Asp	Asn	Ala	Leu
		355				360						365		Val
Asn	Tyr	Leu	Val	His	Asn	Leu	Ser	Val						

Ser Ser Thr Ile His Met Gly Trp Leu Phe Leu Gly Ala Leu Gly Pro
 420 425 430
 Ser Ile Ile Ser Leu Gly Val Phe Trp Leu Leu Lys Asn Val Pro Glu
 435 440 445
 Phe Leu Tyr Cys Phe Phe Arg
 450 455
 <210>1029
 <211>362
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>1029
 Pro Val Asn His Gln Leu Leu Arg Glu Tyr Tyr Pro Ala Thr Gln Ala
 1 5 10 15
 Gly Phe Ser Phe Thr Ser Ala Leu Gly Gly Asp Gly Ile Asp Leu Arg
 20 25 30
 Val Ser Gly Tyr Thr Thr Thr Val Pro Ala Leu Leu Asn Ser Ile Leu
 35 40 45
 Thr Ser Leu Pro Asn Leu Glu Ile Arg Tyr Glu Thr Phe Leu Val Tyr
 50 55 60
 Lys Lys Gln Leu Leu Glu Leu Tyr Gln Gly Ala Leu Leu Asn Cys Pro
 65 70 75 80
 Val Arg Ser Gly Leu Asp Glu Leu Ala Ser Gln Val Met Lys Glu Thr
 85 90 95
 Tyr Ser Asn Thr Thr Lys Leu Ser Ala Leu Glu Lys Leu Ser Phe Ser
 100 105 110
 Glu Phe Gln Ala Phe Ala Ser Asn Leu Phe Asn Ser Val His Leu Glu
 115 120 125
 Val Met Val Leu Gly Asn Leu Ser Glu Gln Gln Lys Lys Asp Tyr Leu
 130 135 140
 Glu Met Leu Gln Val Phe Thr Ala Ser Arg Ser Ser His Ala Thr Lys
 145 150 155 160
 Pro Phe Tyr Tyr Glu Leu Gln Ser Gln Glu Ile Ser Glu Ile His His
 165 170 175
 Asp Tyr Pro Leu Thr Ala Asn Gly Met Leu Leu Leu Leu Gln Asp Lys
 180 185 190
 Ser Ser Pro Ser Ile Gln Gly Lys Val Cys Ala Glu Met Leu Phe Glu
 195 200 205
 Trp Leu His His Ile Thr Phe Glu Glu Leu Arg Thr Gln Gln Gln Leu
 210 215 220
 Gly Tyr Met Val Gly Ala Arg Tyr Arg Glu Phe Ala Ser Arg Pro Phe
 225 230 235 240
 Gly Phe Leu Tyr Ile Arg Ser Asp Ala Tyr Ser Pro Glu Glu Leu Leu
 245 250 255
 Ala Lys Thr Ser Leu Phe Leu Asn Lys Val Ser Ala Ser Pro Glu Lys
 260 265 270
 Phe Gly Ile Ser Gln Glu Lys Phe Ala Asn Ile Arg Lys Ala Tyr Ile
 275 280 285
 Asn Lys Ile Leu Glu Pro Glu His Ser Leu Asp Met Met Asn Ser Ala
 290 295 300
 Leu Phe Ser Leu Ala Phe Glu Arg Pro Phe Val Glu Phe Ser Thr Pro
 305 310 315 320
 Asp Leu Lys Ile Ala Ile Ala Glu Thr Leu Thr Tyr Glu Glu Phe Leu
 325 330 335
 Lys Tyr Cys Gln Cys Phe Leu Ser Asn Glu Leu Gly Thr Gln Thr Ser
 340 345 350
 Val Tyr Ile Arg Gly Thr Gln Lys Thr Ser
 355 360
 <210>1030
 <211>945
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>1030
 Ile Tyr Arg Ala Ile Tyr Met Gln Phe Ser Arg Tyr Leu Arg Tyr Ala
 1 5 10 15

Phe Asp Asn Gln Tyr Leu Pro Glu Pro Leu Tyr Gln Lys Phe Ser Val
20 25 30
Phe His Gln Asn Tyr Ile Asp Ala Thr Lys Lys Ala Ala Ala Asp
35 40 45
Gln Ala Glu Val Leu Cys Leu Gln Trp Val Lys Val Ile Ile Glu Asp
50 55 60
Leu Lys Asn Pro Phe Ile Phe Pro Pro Tyr His Lys Lys Ile Arg Ala
65 70 75 80
Pro Ile Asp Leu Phe Arg Leu Ser Ile Asp Phe Phe Ser Leu Val Ile
85 90 95
Asp Asp Lys Asn Ser Arg Ile Leu Asn Leu His Arg Leu Lys Glu Ile
100 105 110
Glu Glu Tyr Ile Ala Arg Gly Asp Asn Val Val Leu Leu Ala Asn His
115 120 125
Gln Thr Glu Cys Asp Pro Gln Leu Met Tyr Tyr Ala Leu Gly Lys Thr
130 135 140
His Pro Glu Leu Met Glu Asn Met Ile Phe Val Ala Gly Asp Arg Val
145 150 155 160
Thr Ser Asp Pro Leu Ala Arg Pro Phe Ser Met Gly Cys Asp Leu Leu
165 170 175
Cys Ile Tyr Ser Lys Arg His Ile Ala Thr Pro Pro Glu Leu Arg Glu
180 185 190
Glu Lys Leu Leu His Asn Gln Lys Ser Met Gln Ile Leu Lys Thr Leu
195 200 205
Leu Asn Glu Gly Gly Lys Phe Ile Tyr Val Ala Pro Ala Gly Gly Arg
210 215 220
Asp Arg Lys Asn Ala Glu Gly Arg Leu Tyr Pro Ser Glu Phe Ser Pro
225 230 235 240
Glu Ser Ile Glu Val Phe Arg Leu Leu Ala Lys Ala Ser Asn Gln Thr
245 250 255
Thr His Phe Tyr Pro Phe Ala Leu Lys Thr Tyr Asp Ile Leu Pro Pro
260 265 270
Pro Pro Lys Ile Glu Asn Ala Ile Gly Glu Gln Arg Ala Ile Phe Phe
275 280 285
Ala Pro Val Phe Phe Asn Phe Gly Ala Glu Leu Phe Phe Asp Ala Leu
290 295 300
Cys Ser Lys Glu Glu Leu Ile His Cys Asp Lys His Ala Gln Arg Thr
305 310 315 320
Leu Arg Ala Glu Lys Val Phe Ser Ile Cys Lys Lys Ser Ile Arg Gly
325 330 335
Ile Val Arg Cys Phe Gly Asn Phe Phe Val Pro Ile Leu Ile Cys Thr
340 345 350
Ser Leu Ser Ile Thr Ser Cys Glu Gln Gln Phe Lys Val Val Pro Asn
355 360 365
Gln Cys Pro Leu Gln Val Ser Thr Pro Ala Ala Ala Asp Gln Lys Ile
370 375 380
Glu Lys Ile Ile Cys Ser Asn Gly Leu Pro Leu Leu Ile Ile Ser Asp
385 390 395 400
Pro Asn Leu Pro Thr Ser Gly Ala Ala Leu Leu Val Lys Thr Gly Asn
405 410 415
Asn Ala Asp Pro Glu Glu Tyr Pro Gly Met Ala His Phe Thr Glu His
420 425 430
Cys Val Phe Leu Gly Asn Glu Lys Tyr Pro Glu Val Ser Gly Phe Pro
435 440 445
Gly Phe Leu Ser Glu Asn Asn Gly Val His Asn Ala Phe Thr Tyr Pro
450 455 460
Asn Lys Thr Val Phe Val Phe Ser Val Glu His Ser Ala Phe Ser Asp
465 470 475 480
Ala Leu Asp Gln Phe Val His Leu Phe Ile Asn Pro Lys Phe Arg Gln
485 490 495
Glu Asp Leu Asp Arg Glu Lys Tyr Ala Val His Gln Glu Phe Ala Ala
500 505 510
His Pro Leu Ser Asp Gly Arg Arg Val His Arg Ile Gln Gln Leu Val
515 520 525

Ala Pro Gln Gly His Pro Cys Ala Arg Phe Gly Cys Gly Asn Ala Ser
 530 535 540
 Thr Leu Thr Pro Val Thr Thr Glu Lys Met Ala Glu Trp Phe Lys Leu
 545 550 555 560
 His Tyr Ser Pro Glu Asn Met Cys Ala Ile Ala Tyr Thr Ser Ala Pro
 565 570 575
 Leu Ser Lys Ala Lys Lys Gln Phe Ser Lys Ile Phe Ser Gln Ile Pro
 580 585 590
 Arg Ser Lys Asn Tyr Glu Arg Gln Glu Pro Phe Leu Pro Ser Gly Asp
 595 600 605
 Thr Ser Ser Leu Lys Asn Leu Tyr Ile Asn Gln Ala Ile Gln Pro Thr
 610 615 620
 Ser Asn Leu Glu Ile Tyr Trp His Ile Tyr Glu Ser Ser His Pro Ile
 625 630 635 640
 Pro Leu Gly Cys Tyr Lys Ala Leu Ala Glu Val Leu Arg Asn Glu Ser
 645 650 655
 Lys Asn Ser Leu Val Ser Leu Leu Lys Asn Glu Gln Leu Ile Thr Asp
 660 665 670
 Leu Asp Val Glu Phe Phe Arg Ser Ser Leu Asn Thr Gly Glu Phe Tyr
 675 680 685
 Ile Ser Tyr Glu Leu Thr Glu Lys Gly Asp Lys His Tyr Ser Gln Val
 690 695 700
 Ile Asp Ser Thr Phe Gln Tyr Leu Arg Tyr Ile Gln Glu His Gly Ile
 705 710 715 720
 Pro Asn Tyr Thr Leu Glu Glu Ile Ser Thr Ile Asn Ala Leu Asn Tyr
 725 730 735
 Cys Tyr Ser Ser Lys Ser Pro Leu Phe Asp Leu Leu Cys Lys Gln Ile
 740 745 750
 Val Ser Leu Gly Asn Glu Asp Leu Ser Thr Tyr Pro Tyr His Ser Leu
 755 760 765
 Val Tyr Pro Lys Tyr Ser Ser Glu Asp Glu Ser Ala Leu Leu Asn Leu
 770 775 780
 Val Ser Asp Pro Glu Gln Ala Arg Phe Val Leu Ser Ser Lys Asn Ser
 785 790 795 800
 Glu His Trp Glu Glu Ala Thr Gln Leu His Asp Pro Ile Phe Asp Met
 805 810 815
 Thr Tyr Tyr Val Lys Ala Leu Asp Gly Val Gln Asp Tyr Gly Lys Val
 820 825 830
 Gln Ser Leu Lys Pro Ile Ala Leu Pro Lys Pro Asn Leu Phe Ile Pro
 835 840 845
 Lys Glu Val Thr Leu Pro Gly Val His Leu Leu Lys Lys Gln Glu Phe
 850 855 860
 Pro Phe Ala Pro Ala Leu Ser Tyr Gln Asp Asp Lys Leu Thr Leu Tyr
 865 870 875 880
 His Cys Glu Asp His Tyr Tyr Thr Ala Pro Lys Leu Ser Ser Gln Ile
 885 890 895
 Arg Ile Arg Ser Pro Gln Ile Ser Arg Ser Ser Pro Gln Phe Leu Val
 900 905 910
 Ala Thr Glu Leu Tyr Cys Leu Ala Cys Glu Pro Ser Ala Phe Glu Gly
 915 920 925
 Val Leu Ser Arg Asn Ala Ser Trp Phe Phe Phe Tyr Phe Cys Phe Arg
 930 935 940

Trp

945

<210>1031

<211>521

<212>PRT

<213>Chlamydia pneumoniae

<400>1031

Ile Gly Thr Arg Lys Val Met Glu Asn Glu Ile Leu Leu Asn Ile Glu
 1 5 10 15
 Ser Lys Glu Ile Arg Tyr Ala His Leu Lys Asn Gly Gln Leu Phe Asp
 20 25 30
 Leu Thr Ile Glu Arg Lys Lys Val Arg Gln Leu Lys Gly Asn Ile Tyr

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<210>1032
<211>176
<212>PRT
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<213>Chlamydia pneumoniae

<400>1032

```

Ser Leu Ser Leu Val Ser Tyr Leu Ser Asn Pro Gln Lys Ala Leu Val
 1           5           10           15
Leu Gly Ser Lys Gly Phe Ser Met Asp Cys Val Asp Asn Leu Lys Leu
           20           25           30
Tyr Ile Phe Arg Leu Lys Leu Pro Gly Asp Thr Glu Arg Ile Ser Tyr
           35           40           45
Ser Ile Ser Pro Glu Tyr Ile Arg Glu Lys Gly Glu Glu Glu Leu Leu
           50           55           60
Asn Ser Pro Ile Glu Val Glu Gly Ser Leu Gly Arg Ile Asp Ser Asp
           65           70           75           80
Gln Trp Ile Leu Ser Leu Ser Leu Lys Thr Gln Leu Gly Leu Cys Cys
           85           90           95
Pro Val Cys Asn Asn Phe Phe Ser His Ser Val Cys Leu Pro Asp Leu
           100          105          110
Gln Arg Val Ile Ser His Asp Glu Val Gly Ser Gly Val Phe Asp Cys
           115          120          125
Arg Pro Leu Ile Arg Gln Glu Leu Leu Glu Ser Asp Cys Phe Glu
           130          135          140
Glu Cys Ser Gly Gln Gly Cys Pro Glu Arg Lys Asn Ile Leu Lys Phe
145           150           155           160
Leu Glu Asp Arg Lys Lys His Glu Gly Asn Asn Pro Phe Glu Tyr Leu
           165           170           175

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<210>1033

<211>213

<212>PRT

<213>Chlamydia pneumoniae

<400>1033

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Met Glu Val Gln Ile Gly Ile Asp Leu Met Gly Gly Asp His Ser Pro
 1           5           10           15
Leu Val Val Trp Gln Val Leu Val Asp Val Leu Lys Ser Gln Ser Ser
           20           25           30
Thr Ile Pro Phe Ala Phe Thr Leu Phe Ala Ser Glu Glu Ile Arg Lys
           35           40           45
Gln Ile Gln Glu Glu Phe Ile Ser Asp Leu Pro Gln Glu Lys Phe Pro
           50           55           60
Lys Ile Ile Ser Ala Glu Asn Phe Val Ala Met Glu Asp Ser Pro Leu
           65           70           75           80
Ala Ala Ile Arg Lys Lys Ser Ser Ser Met Ala Leu Gly Leu Asp Tyr
           85           90           95
Leu Gln Glu Asp Lys Leu Asp Ala Phe Ile Ser Thr Gly Asn Thr Gly
           100          105          110
Ala Leu Val Thr Leu Ala Arg Ala Lys Ile Pro Leu Phe Pro Ala Val
           115          120          125
Ser Arg Pro Ala Leu Leu Val Cys Val Pro Thr Met Arg Gly His Ala
           130          135          140
Val Ile Leu Asp Val Gly Ala Asn Ile Ser Val Lys Pro Glu Glu Met
145           150           155           160
Val Gly Phe Ala Arg Met Gly Leu Ala Tyr Arg Gln Cys Leu Gly Asp
           165          170          175
Ser Lys Ile Pro Thr Ile Gly Leu Leu Asn Ile Gly Ser Glu Glu Arg
           180          185          190
Lys Gly Thr Glu Ala His Arg Gln Thr Phe Arg Met Leu Arg Glu Thr
           195          200          205
Phe Gly Glu Leu Ser
           210

```

<210>1034

<211>127

<212>PRT

<213>Chlamydia pneumoniae

<400>1034

```

Arg Tyr Gly Ser Pro Ser Pro Asp Ile Pro Tyr Ala Ala Arg Asp Ile
 1           5           10           15

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Trp Arg Thr Phe Leu Gly Asn Ile Glu Ser Gly Ala Val Phe Asp Gly
 20 25 30
 Ala Ala Asp Ile Val Val Thr Asp Gly Phe Thr Gly Asn Ile Phe Leu
 35 40 45
 Lys Thr Ala Glu Gly Val Phe Glu Phe Leu Gln Arg Ile Leu Gly Asp
 50 55 60
 Lys Leu Glu Ala Asp Ile Gln Arg Arg Leu Asp Tyr Thr Phe Tyr Pro
 65 70 75 80
 Gly Ser Val Val Cys Gly Leu Ser Lys Leu Val Ile Lys Cys His Gly
 85 90 95
 Lys Ala Cys Gly Ser Ser Leu Phe His Gly Ile Leu Gly Ser Ile Asn
 100 105 110
 Leu Ala Gln Ala Arg Leu Cys Lys Arg Ile Leu Ser Asn Leu Ile
 115 120 125

<210>1035

<211>1617

<212>PRT

<213>Chlamydia pneumoniae

<400>1035

Thr Pro Leu Arg Phe Lys Val Ala Met Val Ala Lys Lys Thr Val Arg
 1 5 10 15
 Ser Tyr Arg Ser Ser Phe Ser His Ser Val Ile Val Ala Ile Leu Ser
 20 25 30
 Ala Gly Ile Ala Phe Glu Ala His Ser Leu His Ser Ser Glu Leu Asp
 35 40 45
 Leu Gly Val Phe Asn Lys Gln Phe Glu Glu His Ser Ala His Val Glu
 50 55 60
 Glu Ala Gln Thr Ser Val Leu Lys Gly Ser Asp Pro Val Asn Pro Ser
 65 70 75 80
 Gln Lys Glu Ser Glu Lys Val Leu Tyr Thr Gln Val Pro Leu Thr Gln
 85 90 95
 Gly Ser Ser Gly Glu Ser Leu Asp Leu Ala Asp Ala Asn Xaa Leu Glu
 100 105 110
 His Phe Gln His Leu Phe Glu Glu Thr Thr Val Phe Gly Ile Asp Gln
 115 120 125
 Lys Leu Val Trp Ser Asp Leu Asp Thr Arg Asn Phe Ser Gln Pro Thr
 130 135 140
 Gln Glu Pro Asp Thr Ser Asn Ala Val Ser Glu Lys Ile Ser Ser Asp
 145 150 155 160
 Thr Lys Glu Asn Arg Lys Asp Leu Glu Thr Glu Asp Pro Ser Lys Lys
 165 170 175
 Ser Gly Leu Lys Glu Val Ser Ser Asp Leu Pro Lys Ser Pro Glu Thr
 180 185 190
 Ala Val Ala Ala Ile Ser Glu Asp Leu Glu Ile Ser Glu Asn Ile Ser
 195 200 205
 Ala Arg Asp Pro Leu Gln Gly Leu Ala Phe Phe Tyr Lys Asn Thr Ser
 210 215 220
 Ser Gln Ser Ile Ser Glu Lys Asp Ser Ser Phe Gln Gly Ile Ile Phe
 225 230 235 240
 Ser Gly Ser Gly Ala Asn Ser Gly Leu Gly Phe Glu Asn Leu Lys Ala
 245 250 255
 Pro Lys Ser Gly Ala Ala Val Tyr Ser Asp Arg Asp Ile Val Phe Glu
 260 265 270
 Asn Leu Val Lys Gly Leu Ser Phe Ile Ser Cys Glu Ser Leu Glu Asp
 275 280 285
 Gly Ser Ala Ala Gly Val Asn Ile Val Val Thr His Cys Gly Asp Val
 290 295 300
 Thr Leu Thr Asp Cys Ala Thr Gly Leu Asp Leu Glu Ala Leu Arg Leu
 305 310 315 320
 Val Lys Asp Phe Ser Arg Gly Gly Ala Val Phe Thr Ala Arg Asn His
 325 330 335
 Glu Val Gln Asn Asn Leu Ala Gly Gly Ile Leu Ser Val Val Gly Asn
 340 345 350
 Lys Gly Ala Ile Val Val Glu Lys Asn Ser Ala Glu Lys Ser Asn Gly

355					360					365					
Gly	Ala	Phe	Ala	Cys	Gly	Ser	Phe	Val	Tyr	Ser	Asn	Asn	Glu	Asn	Thr
370					375					380					
Ala	Leu	Trp	Lys	Glu	Asn	Gln	Ala	Leu	Ser	Gly	Gly	Ala	Ile	Ser	Ser
385					390					395					400
Ala	Ser	Asp	Ile	Asp	Ile	Gln	Gly	Asn	Cys	Ser	Ala	Ile	Glu	Phe	Ser
				405					410					415	
Gly	Asn	Gln	Ser	Leu	Ile	Ala	Leu	Gly	Glu	His	Ile	Gly	Leu	Thr	Asp
			420					425					430		
Phe	Val	Gly	Gly	Gly	Ala	Leu	Ala	Ala	Gln	Gly	Thr	Leu	Thr	Leu	Arg
		435					440					445			
Asn	Asn	Ala	Val	Val	Gln	Cys	Val	Lys	Asn	Thr	Ser	Lys	Thr	His	Gly
		450				455					460				
Gly	Ala	Ile	Leu	Ala	Gly	Thr	Val	Asp	Leu	Asn	Glu	Thr	Ile	Ser	Glu
465					470					475					480
Val	Ala	Phe	Lys	Gln	Asn	Thr	Ala	Ala	Leu	Thr	Gly	Gly	Ala	Leu	Ser
				485					490					495	
Ala	Asn	Asp	Lys	Val	Ile	Ile	Ala	Asn	Asn	Phe	Gly	Glu	Ile	Leu	Phe
			500					505					510		
Glu	Gln	Asn	Glu	Val	Arg	Asn	His	Gly	Gly	Ala	Ile	Tyr	Cys	Gly	Cys
		515				520						525			
Arg	Ser	Asn	Pro	Lys	Leu	Glu	Gln	Lys	Xaa	Ser	Gly	Glu	Asn	Ile	Asn
		530				535					540				
Ile	Ile	Gly	Asn	Ser	Gly	Ala	Ile	Thr	Phe	Leu	Lys	Asn	Lys	Ala	Ser
545					550					555					560
Val	Leu	Glu	Val	Met	Thr	Gln	Ala	Glu	Asp	Tyr	Ala	Gly	Gly	Gly	Ala
				565					570					575	
Leu	Trp	Gly	His	Asn	Val	Leu	Leu	Asp	Ser	Asn	Ser	Gly	Asn	Ile	Gln
			580					585					590		
Phe	Ile	Gly	Asn	Ile	Gly	Gly	Arg	Asn	Phe	Trp	Ile	Gly	Glu	Tyr	Val
		595					600					605			
Gly	Gly	Gly	Ala	Ile	Leu	Ser	Thr	Asp	Arg	Val	Thr	Ile	Ser	Asn	Asn
		610				615					620				
Ser	Gly	Asp	Val	Val	Phe	Lys	Gly	Asn	Lys	Gly	Gln	Cys	Leu	Ala	Gln
625					630					635					640
Lys	Tyr	Val	Ala	Pro	Gln	Glu	Thr	Ala	Pro	Val	Glu	Ser	Asp	Ala	Ser
				645					650					655	
Ser	Thr	Asn	Lys	Asp	Glu	Lys	Ser	Leu	Asn	Ala	Cys	Ser	His	Gly	Asp
			660					665					670		
His	Tyr	Pro	Pro	Lys	Thr	Val	Glu	Glu	Glu	Val	Pro	Pro	Ser	Leu	Leu
		675					680					685			
Glu	Glu	His	Pro	Val	Val	Ser	Ser	Thr	Asp	Ile	Arg				

865		870		875		880
Ala Gly Asp Ile Leu Phe Val Ser Asn Ser Thr Gly Ser Tyr Gly Gly						
	885		890		895	
Ala Ile Phe Val Gly Ser Leu Val Ala Ser Glu Gly Ser Asn Pro Arg						
	900		905		910	
Thr Leu Thr Ile Thr Gly Asn Ser Gly Asp Ile Leu Phe Ala Lys Asn						
	915		920		925	
Ser Thr Gln Thr Ala Ala Ser Leu Ser Glu Lys Asp Ser Phe Gly Gly						
	930		935		940	
Gly Ala Ile Tyr Thr Gln Asn Leu Lys Ile Val Lys Asn Ala Gly Asn						
945	950		955		960	
Val Ser Phe Tyr Gly Asn Arg Ala Pro Ser Gly Ala Gly Val Gln Ile						
	965		970		975	
Ala Asp Gly Gly Thr Val Cys Leu Glu Ala Phe Gly Gly Asp Ile Leu						
	980		985		990	
Phe Glu Gly Asn Ile Asn Phe Asp Gly Ser Phe Asn Ala Ile His Leu						
	995		1000		1005	
Cys Gly Asn Asp Ser Lys Ile Val Glu Leu Ser Ala Val Gln Asp Lys						
	1010		1015		1020	
Asn Ile Ile Phe Gln Asp Ala Ile Thr Tyr Glu Glu Asn Thr Ile Arg						
1025	1030		1035		1040	
Gly Leu Pro Asp Lys Asp Val Ser Pro Leu Ser Ala Pro Ser Leu Ile						
	1045		1050		1055	
Phe Asn Ser Lys Pro Gln Asp Asp Ser Ala Gln His His Glu Gly Thr						
	1060		1065		1070	
Ile Arg Phe Ser Arg Gly Val Pro Lys Ile Pro Gln Ile Ala Ala Ile						
	1075		1080		1085	
Gln Glu Gly Thr Leu Ala Leu Ser Gln Asn Ala Glu Leu Trp Leu Ala						
	1090		1095		1100	
Gly Leu Lys Gln Glu Thr Gly Ser Ser Ile Val Leu Ser Ala Gly Ser						
1105	1110		1115		1120	
Ile Leu Arg Ile Phe Asp Ser Gln Val Asp Ser Ser Ala Pro Leu Pro						
	1125		1130		1135	
Thr Glu Asn Lys Glu Glu Thr Leu Val Ser Ala Gly Val Gln Ile Asn						
	1140		1145		1150	
Met Ser Ser Pro Thr Pro Asn Lys Asp Lys Ala Val Asp Thr Pro Val						
	1155		1160		1165	
Leu Ala Asp Ile Ile Ser Ile Thr Val Asp Leu Ser Ser Phe Val Pro						
	1170		1175		1180	
Glu Gln Asp Gly Thr Leu Pro Leu Pro Pro Glu Ile Ile Ile Pro Lys						
1185	1190		1195		1200	
Gly Thr Lys Leu His Ser Asn Ala Ile Asp Leu Lys Ile Ile Asp Pro						
	1205		1210		1215	
Thr Asn Val Gly Tyr Glu Asn His Ala Leu Leu Ser Ser His Lys Asp						
	1220		1225		1230	
Ile Pro Leu Ile Ser Leu Lys Thr Ala Glu Gly Met Thr Gly Thr Pro						
	1235		1240		1245	
Thr Ala Asp Ala Ser Leu Ser Asn Ile Lys Ile Asp Val Ser Leu Pro						
	1250		1255		1260	
Ser Ile Thr Pro Ala Thr Tyr Gly His Thr Gly Val Trp Ser Glu Ser						
1265	1270		1275		1280	
Lys Met Glu Asp Gly Arg Leu Val Val Gly Trp Gln Pro Thr Gly Tyr						
	1285		1290		1295	
Lys Leu Asn Pro Glu Lys Gln Gly Ala Leu Val Leu Asn Asn Leu Trp						
	1300		1305		1310	
Ser His Tyr Thr Asp Leu Arg Ala Leu Lys Gln Glu Ile Phe Ala His						
	1315		1320		1325	
His Thr Ile Ala Gln Arg Met Glu Leu Asp Phe Ser Thr Asn Val Trp						
	1330		1335		1340	
Gly Ser Gly Leu Gly Val Val Glu Asp Cys Gln Asn Ile Gly Glu Phe						
1345	1350		1355		1360	
Asp Gly Phe Lys His His Leu Thr Gly Tyr Ala Leu Gly Leu Asp Thr						
	1365		1370		1375	
Gln Leu Val Glu Asp Phe Leu Ile Gly Gly Cys Phe Ser Gln Phe Phe						

1380 1385 1390
 Gly Lys Thr Glu Ser Gln Ser Tyr Lys Ala Lys Asn Asp Val Lys Ser
 1395 1400 1405
 Tyr Met Gly Ala Ala Tyr Ala Gly Ile Leu Ala Gly Pro Trp Leu Ile
 1410 1415 1420
 Lys Gly Ala Phe Val Tyr Gly Asn Ile Asn Asn Asp Leu Thr Thr Asp
 1425 1430 1435 1440
 Tyr Gly Thr Leu Gly Ile Ser Thr Gly Ser Trp Ile Gly Lys Gly Phe
 1445 1450 1455
 Ile Ala Gly Thr Ser Ile Asp Tyr Arg Tyr Ile Val Asn Pro Arg Arg
 1460 1465 1470
 Phe Ile Ser Ala Ile Val Ser Thr Val Val Pro Phe Val Glu Ala Glu
 1475 1480 1485
 Tyr Val Arg Ile Asp Leu Pro Glu Ile Ser Glu Gln Gly Lys Glu Val
 1490 1495 1500
 Arg Thr Phe Gln Lys Thr Arg Phe Glu Asn Val Ala Ile Pro Phe Gly
 1505 1510 1515 1520
 Phe Ala Leu Glu His Ala Tyr Ser Arg Gly Ser Arg Ala Glu Val Asn
 1525 1530 1535
 Ser Val Gln Leu Ala Tyr Val Phe Asp Val Tyr Arg Lys Gly Pro Val
 1540 1545 1550
 Ser Leu Ile Thr Leu Lys Asp Ala Ala Tyr Ser Trp Lys Ser Tyr Gly
 1555 1560 1565
 Val Asp Ile Pro Cys Lys Ala Trp Lys Ala Arg Leu Ser Asn Asn Thr
 1570 1575 1580
 Glu Trp Asn Ser Tyr Leu Ser Thr Tyr Leu Ala Phe Asn Tyr Glu Trp
 1585 1590 1595 1600
 Arg Glu Asp Leu Ile Ala Tyr Asp Phe Asn Gly Gly Ile Arg Ile Ile
 1605 1610 1615
 Phe

<210>1036

<211>504

<212>PRT

<213>Chlamydia pneumoniae

<400>1036

Gln Ser Ile Leu Glu Ser Ile Ile Lys Tyr Phe Tyr Leu Ile His Asn
 1 5 10 15
 Ser Lys Met His Met Ser Asn Pro Ile Ser Leu Phe Ser Pro Ala Glu
 20 25 30
 Leu Ile Ala Lys Tyr Asn Leu Ile Pro Lys Thr Ser Pro Ile Tyr Pro
 35 40 45
 Arg Arg Thr Glu Leu Ile Ile Leu Glu Glu Asn Ala Cys Gln Thr Arg
 50 55 60
 Leu Thr Asn Val Ala Gln Val Leu His Pro Ser Ser Leu Phe Ser Met
 65 70 75 80
 Ser Lys Lys Ile Leu Asn Pro Cys Gly Cys Ser Gly Gly Pro Leu Cys
 85 90 95
 Trp Val Ile Leu Asn Ile Leu Ala Phe Ile Ile Thr Ser Val Leu Phe
 100 105 110
 Ile Ile Leu Leu Pro Val Asn Leu Ile Val Ala Gly Leu Arg Leu Phe
 115 120 125
 Met Pro Leu Pro Pro Lys Lys Ile Val Glu Asp Leu Ser Glu Pro Thr
 130 135 140
 Thr Glu Glu Thr Asn Glu Val Ile Gln Pro Phe Ile Phe Ala Leu Gln
 145 150 155 160
 Ala Leu Leu Phe Glu Asp Asn Lys Leu Arg Ser Phe Lys Ile Val Glu
 165 170 175
 Gln Ser Val Gly Lys Ala Pro Leu Pro Asn Pro Phe Leu Asn Arg Leu
 180 185 190
 Val Ala Ile Ser Pro Gln Xaa Ser Gln Glu Ala Met Arg Lys Ile Pro
 195 200 205
 Asp Leu Cys Ser Gln Leu Lys Lys Val Leu Lys Ser Leu Gly Val Leu
 210 215 220

Thr Pro Glu Trp Lys His Met Leu Lys Tyr Phe Glu Gly Leu Lys Asn
 225 230 235 240
 Glu His Asp Ser Asn Pro Asp Lys Lys Thr Phe Pro Ile Leu Ile Lys
 245 250 255
 Leu Leu Ile Glu Ala Leu Thr Gly Lys Ser Ser Leu Pro Lys Thr Pro
 260 265 270
 Ser Thr Lys Glu Lys Met Gln Ala Ala Leu Phe Ile Ala Ser Ser Cys
 275 280 285
 Lys Thr Cys Lys Pro Thr Trp Gly Glu Val Ile Thr Arg Ser Leu Asn
 290 295 300
 Arg Leu Tyr Ser Ile Ala Asn Glu Gly Asp Asn Gln Leu Leu Ile Trp
 305 310 315 320
 Val Gln Glu Phe Lys Glu Arg Glu Leu Met Ser Ile Gln Asp Gly Asp
 325 330 335
 Asp Ala Glu Glu Tyr Arg Phe Ala Ala Gln Gln His Gly Glu Arg Tyr
 340 345 350
 Thr Glu Ala Ile Glu Gln Val Leu Arg Asn Glu Ser Ala Ala Lys Leu
 355 360 365
 Gln Trp His Val Ile Asn Thr Met Lys Phe Phe His Gly Lys Asn Leu
 370 375 380
 Gly Leu Val Thr Glu His Leu Gln Asp Thr Leu Gly Ala Leu Thr Leu
 385 390 395 400
 Arg Gln Thr Thr Val Asp Thr His Gln Gly Arg Glu Asp Ala Asp Leu
 405 410 415
 Ser Ala Ala Leu Phe Leu Asn Lys Tyr Leu Asn Ser Gly Asn Gln Leu
 420 425 430
 Val Asn Ser Val Phe Lys Ser Met Gln Lys Ala Asp Pro Glu Thr Lys
 435 440 445
 Ala Leu Ile Arg Glu Phe Ala Leu Asp Ile Leu Tyr Ala Ser Leu Arg
 450 455 460
 Leu Pro Gln Thr Ser Ala His Thr Glu Val Phe Ser Thr Leu Leu Met
 465 470 475 480
 Asp Pro Glu Thr Tyr Glu Pro Asn Lys Ala Cys Ile Ala Tyr Leu Leu
 485 490 495
 Tyr Val Leu Lys Ile Ile Glu Leu
 500

<210>1037

<211>615

<212>PRT

<213>Chlamydia pneumoniae

<400>1037

Lys Gly Phe Ser Phe Ser Lys Val Gly Leu Asn Met Ile Pro Ser Gly
 1 5 10 15
 Leu Val Tyr Leu Leu Tyr Pro Leu Gly Phe Leu Ala Ser Leu Phe Phe
 20 25 30
 Gly Ser Ala Phe Ser Ile Gln Trp Trp Leu Ser Lys Lys Arg Lys Glu
 35 40 45
 Val Tyr Ala Pro Arg Ser Phe Trp Ile Leu Ser Ser Ile Gly Ala Thr
 50 55 60
 Leu Met Ile Val His Gly Thr Ile Gln Ser Gln Phe Pro Val Thr Val
 65 70 75 80
 Leu His Val Ile Asn Leu Ile Ile Tyr Leu Arg Asn Leu Asn Ile Thr
 85 90 95
 Ser Ser Arg Pro Ile Ser Phe Arg Ala Thr Leu Val Leu Met Ala Leu
 100 105 110
 Ser Val Val Phe Val Thr Leu Pro Phe Leu Tyr Val Asn Met Glu Trp
 115 120 125
 Met Ala Ser Pro Asn Ile Phe His Leu Pro Leu Pro Pro Ala Gln Leu
 130 135 140
 Ser Trp His Leu Ile Gly Cys Leu Gly Leu Ala Ile Phe Ser Gly Arg
 145 150 155 160
 Phe Leu Ile Gln Trp Phe Tyr Ile Glu Ser Asn Asn Thr Lys Asp Phe
 165 170 175
 Pro Leu Leu Phe Trp Lys Ile Gly Leu Leu Gly Gly Leu Leu Ala Leu

180 185 190
 Val Tyr Phe Ile Arg Ile Gly Asp Pro Ile Asn Ile Leu Cys Tyr Gly
 195 200 205
 Cys Gly Leu Phe Pro Ser Ile Ala Asn Leu Arg Leu Phe Tyr Lys Glu
 210 215 220
 Gln Arg Ser Thr Pro Tyr Leu Asp Thr His Cys Phe Leu Ser Ala Gly
 225 230 235 240
 Glu Ala Ser Gly Asp Ile Leu Gly Gly Lys Leu Ile Gln Ser Ile Lys
 245 250 255
 Ser Leu Tyr Pro Asn Ile Arg Phe Trp Gly Val Gly Gly Pro Ala Met
 260 265 270
 Arg Gln Glu Gly Leu Gln Pro Ile Leu Asn Met Glu Glu Phe Gln Val
 275 280 285
 Ser Gly Phe Ala Glu Val Leu Gly Ser Leu Phe Arg Leu Tyr Arg Asn
 290 295 300
 Tyr Arg Lys Ile Leu Lys Thr Ile Leu Lys His Lys Pro Ala Thr Leu
 305 310 315 320
 Ile Phe Ile Asp Phe Pro Asp Phe His Leu Leu Ile Lys Lys Leu
 325 330 335
 Arg Lys His Gly Tyr Arg Gly Lys Ile Ile His Tyr Val Cys Pro Ser
 340 345 350
 Ile Trp Ala Trp Arg Pro Lys Arg Lys Arg Ile Leu Glu Gln His Leu
 355 360 365
 Asp Met Leu Leu Leu Ile Leu Pro Phe Glu Glu Gly Leu Phe Lys Asn
 370 375 380
 Thr Ser Leu Glu Thr Val Tyr Leu Gly His Pro Leu Val Glu Glu Ile
 385 390 395 400
 Ser Asp Tyr Lys Glu Gln Ala Ser Trp Lys Glu Lys Phe Leu Asn Ser
 405 410 415
 Asp Arg Pro Ile Val Ala Ala Phe Pro Gly Ser Arg Arg Gly Asp Ile
 420 425 430
 Ser Arg Asn Leu Arg Ile Gln Val Gln Ala Phe Leu Asn Ser Ser Leu
 435 440 445
 Ser Gln Thr His Gln Phe Val Ser Ser Ser Ser Ala Lys Tyr Asp
 450 455 460
 Glu Ile Ile Glu Asp Thr Leu Lys Ala Glu Gly Cys Gln His Ser Gln
 465 470 475 480
 Ile Ile Pro Met Asn Phe Arg Tyr Glu Leu Met Arg Ser Cys Asp Cys
 485 490 495
 Ala Leu Ala Lys Cys Gly Thr Ile Val Leu Glu Thr Ala Leu Asn Gln
 500 505 510
 Thr Pro Thr Ile Val Met Cys Arg Leu Arg Pro Phe Asp Thr Phe Leu
 515 520 525
 Ala Lys Tyr Ile Phe Lys Ile Leu Leu Pro Ala Tyr Ser Leu Pro Asn
 530 535 540
 Ile Ile Met Asn Ser Val Ile Phe Pro Glu Phe Ile Gly Gly Lys Lys
 545 550 555 560
 Asp Phe His Pro Glu Glu Thr Ala Thr Ala Leu Asp Leu Leu Asn Gln
 565 570 575
 His Gly Ser Lys Glu Lys Gln Lys Glu Asp Cys Arg Lys Leu Cys Lys
 580 585 590
 Val Met Thr Thr Gly Gln Ile Ala Ser Glu Glu Phe Leu Lys Arg Ile
 595 600 605
 Phe Asp Thr Leu Pro Ala Val
 610 615
 <210>1038
 <211>430
 <212>PRT
 <213>Chlamydia pneumoniae.
 <400>1038
 Met Val Cys Glu Asn Asn Ile Leu Ser Gly Arg Gly Leu Glu Leu Leu
 1 5 10 15
 Lys Lys Lys Ser Asn Ile Thr Leu Thr Pro Thr Ile Tyr Ser Val Ser
 20 25 30

Asn His Asn Ile Lys Leu Lys Asp Phe Ser Pro His Ala Leu Ser Val
 35 40 45
 Ile Lys Thr Leu Arg Lys Ala Gly Tyr Ile Ala Tyr Ile Val Gly Gly
 50 55 60
 Cys Ile Arg Asp Leu Leu Asn Thr Thr Pro Lys Asp Phe Asp Ile
 65 70 75 80
 Ser Thr Ser Ala Lys Pro Glu Glu Ile Lys Ala Ile Phe Lys Asn Cys
 85 90 95
 Ile Leu Val Gly Lys Arg Phe Arg Leu Ala His Ile Arg Phe Ser Lys
 100 105 110
 Gln Ile Ile Glu Val Ser Thr Phe Arg Ser Gly Ser Thr Asp Glu Asp
 115 120 125
 Val Leu Ile Thr Lys Asp Asn Leu Trp Gly Thr Pro Glu Glu Asp Val
 130 135 140
 Leu Arg Arg Asp Phe Thr Ile Asn Gly Leu Phe Tyr Asp Pro Glu His
 145 150 155 160
 Glu Glu Ile Ile Asp Tyr Thr Gly Gly Val Asn Asp Leu Arg Asn Arg
 165 170 175
 Tyr Leu Arg Thr Ile Gly Asp Pro Phe Thr Arg Phe Lys Gln Asp Pro
 180 185 190
 Val Arg Met Leu Arg Leu Leu Lys Ile Leu Ser Arg Ser Pro Phe Thr
 195 200 205
 Val Glu Thr Gln Thr Gln Glu Ala Leu Ile Ala Cys Arg Gln Glu Leu
 210 215 220
 Ile Lys Ser Ser Arg Ala Arg Val Phe Glu Glu Leu Ile Lys Met Leu
 225 230 235 240
 Asn Ser Gly Ala Ala Lys Asn Phe Phe Gln Leu Leu Ile Glu Asn His
 245 250 255
 Leu Leu Glu Ile Leu Phe Pro Tyr Met Asp Lys Ala Phe Arg Leu Asn
 260 265 270
 Arg Ala Leu Glu Glu Gln Thr Ala Thr Tyr Leu Lys Ala Leu Asp Asp
 275 280 285
 Lys Ile Leu Lys Lys Glu Ala Glu Tyr Asp Arg His Gln Leu Met Ala
 290 295 300
 Ile Phe Leu Phe Pro Leu Val Asn Phe Asn Val Arg Tyr Lys His Gln
 305 310 315 320
 Lys His Pro Tyr Leu Ser Leu Thr Ser Val Phe Asp Tyr Ile Lys Asn
 325 330 335
 Phe Leu Glu Gln Phe Phe Ala Asp Ser Phe Thr Ser Cys Ser Lys Lys
 340 345 350
 Asn Phe Ile Leu Thr Ala Leu Ile Leu Gln Met Gln Tyr Arg Leu Thr
 355 360 365
 Pro Leu Ile Pro Thr Lys Lys Ala Leu Phe Phe Asn Lys Lys Leu Leu
 370 375 380
 His His Thr Arg Phe Leu Glu Ala Leu Ser Leu Leu Glu Ile Arg Ser
 385 390 395 400
 Ile Val Tyr Pro Lys Leu Asp Lys Val Tyr Val Ala Trp Ile Arg His
 405 410 415
 His Gln Thr Leu Lys Cys Lys Lys Asp Ser His Ser Gln Lys
 420 425 430

<210>1039

<211>395

<212>PRT

<213>Chlamydia pneumoniae

<400>1039

Glu Arg Ile Asp Cys Trp Leu Asn Ser Met Gly Ile Glu Thr Leu Val
 1 5 10 15
 Leu Gly Pro Ile Pro Thr Pro Gly Val Ala Phe Ile Thr Arg Ala Tyr
 20 25 30
 Arg Ala Asp Ala Gly Ile Met Ile Ser Ala Ser His Asn Pro Tyr Arg
 35 40 45
 Asp Asn Gly Ile Lys Ile Phe Ser Leu Glu Gly Phe Lys Ile Ser Asp
 50 55 60
 Val Leu Glu Gln Arg Ile Glu Thr Met Val Ser Glu Ala Asp Phe Gly

65 70 75 80
 Pro Leu Pro Glu Asp His Ala Val Gly Lys Asn Lys Arg Val Ile Asp
 85 90 95
 Ala Met Gly Arg Tyr Val Glu Phe Val Lys Ala Thr Phe Pro Lys Gly
 100 105 110
 Arg Thr Leu Lys Gly Leu Lys Ile Val Leu Asp Cys Ala His Gly Ala
 115 120 125
 Ser Tyr Lys Val Ala Pro Ser Val Phe Glu Glu Leu Asp Ala Glu Val
 130 135 140
 Ile Cys Tyr Gly Cys Glu Pro Thr Gly Ile Asn Ile Asn Glu His Cys
 145 150 155 160
 Gly Ala Leu Phe Pro Gln Val Ile Gln Lys Ala Val Ile Glu His Gln
 165 170 175
 Ala His Leu Gly Ile Ala Leu Asp Gly Asp Gly Asp Arg Ile Ile Met
 180 185 190
 Val Asp Glu Lys Gly His Ile Val Asp Gly Asp Met Ile Leu Ser Ile
 195 200 205
 Cys Ala Gly Asp Leu Lys Lys Arg Ser Ala Leu Pro His Asn Arg Val
 210 215 220
 Val Ala Thr Ile Met Thr Asn Phe Gly Val Leu Lys Tyr Leu Glu Gly
 225 230 235 240
 Leu Gly Leu Gln Val Phe Thr Ser Pro Val Gly Asp Arg His Val Leu
 245 250 255
 His Ala Met Leu Glu His Glu Val Thr Xaa Gly Gly Glu Gln Ser Gly
 260 265 270
 His Met Ile Phe Leu Asp Tyr Asn Thr Thr Gly Asp Gly Ile Val Ser
 275 280 285
 Ala Leu Gln Val Leu Arg Ile Met Ile Glu Ser Glu Ser Met Leu Ser
 290 295 300
 Asp Leu Thr Ala Pro Ile Val Lys Ser Pro Gln Thr Leu Ile Asn Val
 305 310 315 320
 Ala Val Arg Glu Lys Ile Pro Leu Glu Thr Ile Pro Leu Ile Glu Arg
 325 330 335
 Thr Leu Arg Asp Val Gln Asp Ala Leu Gly Pro Ser Gly Arg Ile Leu
 340 345 350
 Leu Arg Tyr Ser Gly Thr Glu Asn Ile Cys Arg Val Met Val Glu Gly
 355 360 365
 His Lys Lys His Gln Val Asp Cys Leu Ala Lys Ala Leu Ala Asp Val
 370 375 380
 Ile Asp Ala Glu Leu Gly Thr Gly Ser Arg Glu
 385 390 395
 <210>1040
 <211>161
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>1040
 Met Cys Gly Ile Phe Gly Tyr Leu Gly Asn Gln Asp Gly Val Ser Ile
 1 5 10 15
 Val Leu Glu Gly Leu Ala Lys Leu Glu Tyr Arg Gly Tyr Asp Ser Ala
 20 25 30
 Gly Leu Ala Ala Val Val Glu Gln Glu Leu Phe Ile Arg Lys Thr Val
 35 40 45
 Gly Arg Val Gln Glu Leu Ser Asn Leu Phe Gln Glu Arg Glu Ile Pro
 50 55 60
 Thr Ala Ser Val Ile Gly His Thr Arg Trp Ala Thr His Gly Val Pro
 65 70 75 80
 Thr Glu Ile Asn Ala His Pro His Val Asp Glu Gly Arg Ser Cys Ala
 85 90 95
 Val Val His Asn Gly Ile Ile Glu Asn Phe Lys Glu Leu Arg Arg Glu
 100 105 110
 Leu Thr Ala Gln Gly Ile Ser Phe Ala Ser Asp Thr Asp Ser Glu Ile
 115 120 125
 Ile Val Gln Leu Phe Ser Leu Tyr Tyr Gln Glu Ser Gln Asp Leu Val
 130 135 140

WO 99/27105
Phe Ser Phe Cys Gln Thr Leu Ala Gln Leu Arg Gly Ser Val Ala Ala
145 150 155 160
Leu

<210>1041

<211>307

<212>PRT

<213>Chlamydia pneumoniae

<400>1041

Arg Ser Cys Ala Leu Ile His Lys Asp His Pro His Thr Ile Leu Cys
1 5 10 15
Ala Ser Gln Glu Ser Pro Leu Ile Leu Gly Leu Gly Lys Glu Thr
20 25 30
Phe Ile Ala Ser Asp Ser Arg Ala Phe Phe Lys Tyr Thr Arg His Ser
35 40 45
Gln Ala Leu Ala Ser Gly Glu Phe Ala Ile Val Ser Gln Gly Lys Glu
50 55 60
Pro Glu Val Tyr Asn Leu Glu Leu Lys Lys Ile His Lys Asp Val Arg
65 70 75 80
Gln Ile Thr Cys Ser Glu Asp Ala Ser Asp Lys Ser Gly Tyr Gly Tyr
85 90 95
Tyr Met Leu Lys Glu Ile Tyr Asp Gln Pro Glu Val Leu Glu Gly Leu
100 105 110
Ile Gln Lys His Met Asp Glu Glu Gly His Ile Leu Ser Glu Phe Leu
115 120 125
Ser Asp Val Pro Ile Lys Ser Phe Lys Glu Ile Thr Ile Val Ala Cys
130 135 140
Gly Ser Ser Tyr His Ala Gly Tyr Leu Ala Lys Tyr Ile Ile Glu Ser
145 150 155 160
Leu Val Ser Ile Pro Val His Ile Glu Val Ala Ser Glu Phe Arg Tyr
165 170 175
Arg Arg Pro Tyr Ile Gly Lys Asp Thr Leu Gly Ile Leu Ile Ser Gln
180 185 190
Ser Gly Glu Thr Ala Asp Thr Leu Ala Ala Leu Lys Glu Leu Arg Arg
195 200 205
Arg Asn Ile Ala Tyr Leu Leu Gly Ile Cys Asn Val Pro Glu Ser Ala
210 215 220
Ile Ala Leu Gly Val Asp His Cys Leu Phe Leu Glu Ala Gly Val Glu
225 230 235 240
Ile Gly Val Ala Thr Thr Lys Ala Phe Thr Ser Gln Leu Leu Leu Leu
245 250 255
Val Phe Leu Gly Leu Lys Leu Ala Asn Val His Gly Ala Leu Thr His
260 265 270
Ala Glu Gln Cys Ser Phe Gly Gln Gly Leu Gln Ser Leu Pro Asp Leu
275 280 285
Cys Gln Lys Leu Leu Ala Gln Arg Val Ser Pro Phe Leu Gly Ala Ala
290 295 300
Leu Leu Leu

305

<210>1042

<211>182

<212>PRT

<213>Chlamydia pneumoniae

<400>1042

Leu Thr Gln Asn Asn Val Pro Leu Ala Arg Asp Tyr Lys Ala Tyr Gln
1 5 10 15
Ile Ser Val Lys Asn Phe Leu Pro Asn Glu Ser Leu His Ser Trp Ala
20 25 30
Gln Pro Tyr Ser Tyr Glu Asp Lys Phe Leu Phe Leu Gly Arg Arg Leu
35 40 45
Met Tyr Pro Val Val Met Glu Ala Ala Leu Lys Leu Lys Glu Ile Ala
50 55 60
Tyr Ile Glu Ala Asn Ala Tyr Pro Gly Gly Glu Met Lys His Gly Pro
65 70 75 80

Ile Ala Leu Ile Ser Lys Gly Thr Pro Val Ile Ala Phe Cys Gly Asp
 85 90 95
 Asp Ile Val Tyr Glu Lys Met Ile Gly Asn Met Met Glu Val Lys Ala
 100 105 110
 Arg His Ala His Val Ile Ala Ile Ala Pro Glu Ser Arg Glu Asp Ile
 115 120 125
 Ala Ala Val Ser Asp Gln Gln Ile Phe Val Pro Asp Cys His Phe Leu
 130 135 140
 Ala Ala Pro Val Leu Tyr Thr Ile Val Gly Gln Val Met Ala Tyr Ala
 145 150 155 160
 Met Ala Leu Ala Lys Gly Met Glu Ile Asp Cys Pro Arg Asn Leu Ala
 165 170 175
 Lys Ser Val Thr Val Glu
 180

<210>1043

<211>259

<212>PRT

<213>Chlamydia pneumoniae

<400>1043

Ser His Asp Leu Asp Xaa Arg Ile Lys Glu Pro Ser Glu His Ala Phe
 1 5 10 15
 Tyr Gly Gly Ile Tyr Phe Arg Ser Cys Arg Gln Asp Phe Tyr Met Pro
 20 25 30
 Cys Leu Leu Val Ser Leu Leu Leu Pro Thr Asp Cys Tyr Phe Cys Glu
 35 40 45
 Gly Gly Asn Ile Leu Cys Arg Val Phe Asn Cys Gln Asn Leu Gly Ile
 50 55 60
 Ser Trp Ile Arg His Leu Gly Pro Leu Gly Phe Ala Ile Leu Met Gly
 65 70 75 80
 Pro Ile Ile Met Ala Gly Thr Lys Val Ile Asp Tyr Cys Asn Arg Phe
 85 90 95
 Phe Met Phe Gly Leu Thr Val Ala Phe Gly Ile Phe Cys Ala Leu Gly
 100 105 110
 Phe Leu Lys Ile Gln Pro Ser Phe Leu Val Arg Ser Ser Trp Leu Thr
 115 120 125
 Thr Ile Asn Ala Phe Pro Val Phe Phe Leu Ala Phe Gly Phe Gln Ser
 130 135 140
 Ile Ile Pro Thr Leu Tyr Tyr Tyr Met Asp Lys Lys Val Gly Asp Val
 145 150 155 160
 Lys Lys Ala Ile Leu Ile Gly Thr Leu Ile Pro Leu Val Leu Tyr Val
 165 170 175
 Leu Trp Glu Val Val Val Leu Gly Ala Val Ser Leu Pro Ile Leu Ser
 180 185 190
 Gln Ala Lys Ile Gly Gly Tyr Thr Ala Val Glu Ala Leu Lys Gln Ala
 195 200 205
 His Arg Ser Trp Ala Phe Tyr Ile Ala Gly Glu Leu Phe Gly Phe Phe
 210 215 220
 Ala Leu Val Ser Ser Phe Val Gly Val Ala Leu Gly Val Met Asp Phe
 225 230 235 240
 Leu Ala Asp Gly Leu Lys Trp Asn Lys Lys Ser His Pro Asn Phe Gln
 245 250 255
 Phe Ser Phe

<210>1044

<211>241

<212>PRT

<213>Chlamydia pneumoniae

<400>1044

Glu Gly Ser Met Gly Leu Tyr Asp Arg Asp Tyr Ile Gln Asp Ser Arg
 1 5 10 15
 Val Gln Gly Thr Phe Ala Ser Arg Val Tyr Gly Trp Met Thr Ala Gly
 20 25 30
 Leu Ile Val Thr Ser Cys Val Ala Leu Gly Leu Tyr Phe Ser Gly Leu
 35 40 45

Tyr Arg Ser Leu Phe Ser Phe Trp Trp Val Trp Cys Phe Ala Thr Leu
 50 55 60
 Gly Val Ser Phe Phe Ile Asn Ser Lys Ile Gln Thr Leu Ser Val Ser
 65 70 75 80
 Ala Val Gly Gly Leu Phe Leu Leu Tyr Ser Thr Leu Glu Gly Met Phe
 85 90 95
 Phe Gly Thr Leu Leu Pro Val Tyr Ala Ala Gln Tyr Gly Gly Gly Val
 100 105 110
 Ile Trp Ala Ala Phe Gly Ser Ala Ala Leu Val Phe Gly Leu Ala Ala
 115 120 125
 Val Tyr Gly Ala Phe Thr Lys Ser Asp Leu Thr Lys Ile Ser Lys Ile
 130 135 140
 Met Thr Phe Ala Leu Ile Gly Leu Leu Leu Val Thr Leu Val Phe Ala
 145 150 155 160
 Val Val Ser Met Phe Val Ser Met Pro Leu Ile Tyr Leu Leu Ile Cys
 165 170 175
 Tyr Leu Gly Leu Val Ile Phe Val Gly Leu Thr Ala Ala Asp Ala Gln
 180 185 190
 Ala Ile Arg Arg Ile Ser Ser Thr Ile Gly Asp Asn Asn Thr Leu Ser
 195 200 205
 Tyr Lys Leu Ser Leu Met Phe Ala Leu Lys Met Tyr Cys Asn Val Ile
 210 215 220
 Met Val Phe Trp Tyr Leu Leu Gln Ile Phe Ser Ser Ser Gly Asn Arg
 225 230 235 240
 Asp

<210>1045

<211>316

<212>PRT

<213>Chlamydia pneumoniae

<400>1045

Arg Cys Ile Asn Asn Ser Leu Leu Phe Pro Ser Tyr Leu Val Ser Phe
 1 5 10 15
 Leu Leu Leu Gln Leu Thr Leu Leu Leu Ala Met Phe Lys Phe Phe Arg
 20 25 30
 Asn Lys Leu Gln Ser Leu Phe Lys Lys Asn Ile Ser Leu Asp Leu Ile
 35 40 45
 Glu Asp Ala Glu Ser Leu Phe Tyr Glu Ala Asp Phe Gly Thr Glu Leu
 50 55 60
 Thr Glu Glu Leu Cys Ala Arg Leu Arg Arg Thr Lys Lys Ala Asp Ala
 65 70 75 80
 Ser Thr Ile Lys Asp Leu Ile Thr Val Leu Leu Arg Glu Ser Leu Glu
 85 90 95
 Gly Leu Pro Ser Gln Ala Ser Gln Ser Ser Gln Thr Arg Pro Ile Val
 100 105 110
 Ser Leu Leu Leu Gly Thr Asn Gly Ser Gly Lys Thr Thr Thr Ala Ala
 115 120 125
 Lys Leu Ala His Tyr Tyr Lys Glu Arg Ser Glu Ser Val Met Leu Val
 130 135 140
 Ala Thr Asp Thr Phe Arg Ala Ala Gly Met Asp Gln Ala Arg Leu Trp
 145 150 155 160
 Ala Asn Glu Leu Gly Cys Gly Phe Val Ser Gly Gln Pro Gly Gly Asp
 165 170 175
 Ala Ala Ala Ile Ala Phe Asp Gly Ile Gln Ser Ala Ile Ala Arg Gly
 180 185 190
 Tyr Ser Arg Val Ile Ile Asp Thr Ser Gly Arg Leu His Val His Gly
 195 200 205
 Asn Leu Met Lys Glu Leu Ser Lys Ile Val Ser Val Cys Gly Lys Ala
 210 215 220
 Leu Glu Gly Ala Pro His Glu Ile Phe Met Thr Val Asp Ser Thr Leu
 225 230 235 240
 Gly Asn Asn Ala Ile Glu Gln Val Arg Val Phe His Asp Val Val Pro
 245 250 255
 Leu Ser Gly Leu Ile Phe Thr Lys Val Asp Gly Ser Ala Lys Gly Gly

260 265 270
 Thr Leu Phe Gln Ile Ala Lys Arg Leu Lys Ile Pro Thr Lys Phe Ile
 275 280 285
 Gly Tyr Gly Glu Ser Leu Lys Asp Leu Asn Glu Phe Asp Leu Asp Leu
 290 295 300
 Phe Leu Asn Lys Leu Phe Pro Glu Val Glu Lys Ile
 305 310 315
 <210>1046
 <211>386
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>1046
 Met His Leu His Glu Tyr Gln Ala Lys Asp Leu Leu Ala Ser Tyr Asp
 1 5 10 15
 Val Pro Ile Pro Pro Tyr Trp Val Val Ser Ser Glu Glu Glu Gly Glu
 20 25 30
 Leu Leu Ile Thr Lys Ser Gly Leu Asp Ser Ala Val Val Lys Val Gln
 35 40 45
 Val His Ala Gly Gly Arg Gly Lys His Gly Gly Val Ile Val Ala Lys
 50 55 60
 Ser Ser Ala Gly Ile Leu Gln Ala Val Ala Lys Leu Leu Gly Met His
 65 70 75 80
 Phe Thr Ser Asn Gln Thr Ala Asp Gly Phe Leu Pro Val Glu Lys Val
 85 90 95
 Leu Ile Ser Pro Leu Val Ala Ile Gln Arg Glu Tyr Tyr Val Ala Val
 100 105 110
 Ile Met Asp Arg Lys His Arg Cys Pro Val Leu Met Leu Ser Lys Ala
 115 120 125
 Gly Gly Met Asp Ile Glu Glu Val Ala His Ser Ser Pro Glu Gln Ile
 130 135 140
 Leu Thr Leu Pro Leu Thr Ser Tyr Gly His Ile Tyr Ser Tyr Gln Leu
 145 150 155 160
 Arg Gln Ala Thr Lys Phe Met Glu Trp Glu Gly Glu Val Met His Gln
 165 170 175
 Gly Val Gln Leu Ile Lys Lys Leu Ala Lys Cys Phe Tyr Glu Asn Asp
 180 185 190
 Val Ser Leu Leu Glu Ile Asn Pro Leu Val Leu Thr Leu Glu Gly Glu
 195 200 205
 Leu Leu Val Leu Asp Ser Lys Ile Thr Ile Asp Asp Asn Ala Leu Tyr
 210 215 220
 Arg His Pro Asn Leu Glu Val Leu Tyr Asp Pro Ser Gln Glu Asn Val
 225 230 235 240
 Arg Asp Val Leu Ala Lys Gln Ile Gly Leu Ser Tyr Ile Ala Leu Ser
 245 250 255
 Gly Asn Ile Gly Cys Ile Val Asn Gly Ala Gly Leu Ala Met Ser Thr
 260 265 270
 Leu Asp Ile Leu Lys Leu His Gly Gly Asn Ala Ala Asn Phe Leu Asp
 275 280 285
 Val Gly Gly Gly Ala Ser Gln Lys Gln Ile Gln Glu Ala Val Ser Leu
 290 295 300
 Val Leu Ser Asp Glu Ser Val Lys Val Leu Phe Ile Asn Ile Phe Gly
 305 310 315 320
 Xaa Ile Met Asp Cys Ser Val Val Ala Ser Gly Leu Val Ala Val Met
 325 330 335
 Glu Thr Arg Asp Gln Val Val Pro Thr Val Ile Arg Leu Glu Gly Thr
 340 345 350
 Asn Val Glu Leu Gly Lys Glu Ile Val Gln Gln Ser Gly Ile Pro Cys
 355 360 365
 Gln Phe Val Ser Ser Met Glu Gly Ala Arg Arg Ala Val Glu Leu
 370 375 380
 Ser Met
 385
 <210>1047
 <211>300

<212>PRT

<213>Chlamydia pneumoniae

<400>1047

Val Cys Arg Phe Arg Arg Tyr Met Phe His Ser Leu Ser Lys Asn Thr
 1 5 10 15
 Pro Ile Ile Thr Gln Gly Ile Thr Gly Lys Ala Gly Ser Phe His Thr
 20 25 30
 Glu Gln Cys Leu Ala Tyr Gly Thr Asn Phe Val Gly Gly Val Thr Pro
 35 40 45
 Gly Lys Gly Gly Thr Leu Trp Leu Asp Leu Pro Val Tyr Asp Ser Val
 50 55 60
 Leu Glu Ala Lys Gln Ala Thr Gly Cys Arg Ala Thr Met Ile Phe Val
 65 70 75 80
 Pro Pro Pro Tyr Ala Ala Glu Ala Ile Leu Glu Ala Glu Glu Ala Gly
 85 90 95
 Ile Glu Leu Ile Val Cys Ile Thr Glu Gly Ile Pro Val Arg Asp Met
 100 105 110
 Leu Glu Val Ala Arg Val Met Asp Asn Ser Thr Ser Gln Leu Ile Gly
 115 120 125
 Pro Asn Cys Pro Gly Ile Ile Lys Pro Gly Glu Cys Lys Ile Gly Ile
 130 135 140
 Met Pro Gly Tyr Ile His Leu Pro Gly Asn Ile Gly Val Val Ser Arg
 145 150 155 160
 Ser Gly Thr Leu Thr Tyr Glu Ala Val Trp Gln Leu Thr Gln Leu Lys
 165 170 175
 Ile Gly Gln Ser Ile Cys Val Gly Ile Gly Gly Asp Pro Leu Asn Gly
 180 185 190
 Thr Ser Phe Ile Asp Val Leu Gln Ala Leu Glu Glu Asp Pro Tyr Thr
 195 200 205
 Glu Leu Ile Leu Met Ile Gly Glu Ile Gly Gly Ser Ala Glu Glu Glu
 210 215 220
 Ala Ala Ala Trp Ile Gln Ala His Cys Thr Lys Pro Val Val Ala Phe
 225 230 235 240
 Ile Ala Gly Val Thr Ala Pro Lys Gly Lys Arg Met Gly His Ala Gly
 245 250 255
 Ala Ile Ile Ser Gly Asn Ser Gly Asp Ala Lys Ser Lys Ile Gln Val
 260 265 270
 Leu Arg Glu Ser Gly Val Thr Val Val Glu Ser Pro Ala His Ile Gly
 275 280 285
 Lys Thr Val Asp Ala Val Leu Arg Ala Lys Glu Leu
 290 295 300

<210>1048

<211>369

<212>PRT

<213>Chlamydia pneumoniae

<400>1048

Ile Leu Met Leu Val Tyr Cys Phe Asp Pro Ser Val Pro Thr Ser Pro
 1 5 10 15
 Glu His Arg Leu Met Ala Ala Leu Asp Arg Trp Phe Phe Leu Gly Gly
 20 25 30
 His Arg Val Arg Ile Leu Thr Leu Glu Gly Asn His Tyr Arg Ala Phe
 35 40 45
 Gln Glu Asn Met Ser Ile Ser Thr Val Glu Lys Ile Leu Lys Leu Ile
 50 55 60
 Ser Tyr Leu Leu Ile Pro Ile Val Leu Ile Ala Leu Leu Ile Arg Cys
 65 70 75 80
 Phe Leu His Ser Arg Phe Lys Cys Asn Trp Lys Cys Asp Ser Leu Ser
 85 90 95
 Asp Ala Arg Val Pro His Asp Val Gln Pro Phe Asn Asp Phe Gln Leu
 100 105 110
 Phe Asn Asn Gln Glu Arg Leu Asn Ile Trp Lys Asn Arg Arg Tyr Val
 115 120 125
 Ser Gly Ile Asp Val Leu Met Val Pro Val Asp Tyr Leu Arg Ser Gln
 130 135 140

Phe Pro Gly Phe Lys Glu Ile Pro Glu Ala Ile Arg Cys Glu Asn Tyr
 145 150 155 160
 Val Ser Asp Gly Gln Phe Ser Glu Glu Ser Lys Thr Ser Tyr Leu Arg
 165 170 175
 Ala Met Leu Thr Asp Ile Val Gly Tyr Ile Leu Ser Leu Asp Glu Thr
 180 185 190
 Tyr Trp Thr Asn Val Ile Leu Lys Ile Arg Ala Met Cys Ile Thr Phe
 195 200 205
 Glu Ser Phe Pro Gly Lys Glu Ala Asp Pro Asn Tyr Ser Pro Arg Val
 210 215 220
 Thr His His Tyr Phe Asp Glu Ser Trp Lys Ala Leu Ala Arg His Val
 225 230 235 240
 Leu Gly Glu Gly Asn Met Val Asn Arg Leu Asp Glu Ala Leu Ile Arg
 245 250 255
 Thr Glu Lys Pro Gly Lys Glu Gly Glu Cys Ile Thr Lys Gln Phe Leu
 260 265 270
 Lys Asp Tyr Cys Lys Lys His Leu Glu Val Met Ser Cys Pro Asp Phe
 275 280 285
 Ile Glu Ser Leu Val Asp Glu Lys Ile Arg Glu Phe Arg Cys Pro Ser
 290 295 300
 Ile Leu Asn Ser Ala Val Cys Asp Val Ile Asp Arg Lys Cys Gln Glu
 305 310 315 320
 His Leu Leu Lys Ala Ile Ile Asn Glu Ala Asn Arg Arg Leu Pro Gly
 325 330 335
 Met Lys Asn Ser Ser Phe Thr Met Arg Gly Asn Gln Val Leu Phe Tyr
 340 345 350
 Thr Ile Phe Ser Pro Pro Lys Leu Pro Pro Ala Ala Ser Ser Val Tyr
 355 360 365
 Phe

<210>1049

<211>358

<212>PRT

<213>Chlamydia pneumoniae

<400>1049

Leu Tyr Ile Asn Gln Phe Ala Asn Ile Leu Lys Ser Ser Phe Leu Met
 1 5 10 15
 Glu Val Tyr Ser Phe Ser Pro Ser Val Arg Thr Ser Phe Gln His Arg
 20 25 30
 Val Met Ala Ala Leu Asp Asn Trp Phe Phe Leu Gly Gly Arg Arg Leu
 35 40 45
 Lys Val Val Ser Leu Asp Ser Cys Asn Ser Gly Gln Ala Cys Glu Glu
 50 55 60
 Tyr Val Pro Ile Ser Thr Thr Glu Lys Val Leu Lys Ile Leu Ser Tyr
 65 70 75 80
 Leu Leu Ile Pro Ile Val Ile Ile Ala Leu Leu Ile Arg Tyr Leu Leu
 85 90 95
 His Ser Asn Phe Thr Ala Lys Val Ser Gln Lys Pro Trp Leu Lys Thr
 100 105 110
 Leu Gln Leu Gly Ile Asp Ile Lys Ser Phe Ile Leu Pro Gly Ser His
 115 120 125
 Val Asn Thr Met Asp Ser Ala Thr Leu Phe Lys Ala Ile Arg Leu Glu
 130 135 140
 Gly Lys Arg Val Asp Val Glu Tyr His Arg Leu His Ser Ser Asp Lys
 145 150 155 160
 Val Val Phe Tyr Ile Pro Ala Gln Lys Leu Pro Asp Asp Leu Arg Leu
 165 170 175
 Thr His Trp Leu Pro Glu Lys Glu Thr Arg Lys Thr Glu Tyr Val Arg
 180 185 190
 His Met Leu Ala His Val Met Gly Tyr Leu Thr Ser Gln Gly Lys Glu
 195 200 205
 Arg Leu Gln Gln Val Val Gln Asp Ser Arg Ser Ser Thr Ser Leu Gly
 210 215 220
 Ala Glu Lys Val Leu Gln Tyr Arg Phe Ile Asp His Pro Gln Ser Gln

.. BNSDOCID: <WO_9927105A2.1>

Arg Ser

<210>1051

<211>245

<212>PRT

<213>Chlamydia pneumoniae

<400>1051

Gly Ile Asp Met Ile Thr Lys Gln Leu Arg Ser Trp Leu Ala Val Leu
 1 5 10 15
 Val Gly Ser Ser Leu Leu Ala Leu Pro Leu Ser Gly Gln Ala Val Gly
 20 25 30
 Lys Lys Glu Ser Arg Val Ser Glu Leu Pro Gln Asp Val Leu Leu Lys
 35 40 45
 Glu Ile Ser Gly Gly Phe Ser Lys Val Ala Thr Lys Ala Thr Pro Ala
 50 55 60
 Val Val Tyr Ile Glu Ser Phe Pro Lys Ser Gln Ala Val Thr His Pro
 65 70 75 80
 Ser Pro Gly Arg Arg Gly Pro Tyr Glu Asn Pro Phe Asp Tyr Phe Asn
 85 90 95
 Asp Glu Phe Phe Asn Arg Phe Phe Gly Leu Pro Ser Gln Arg Glu Lys
 100 105 110
 Pro Gln Ser Lys Glu Ala Val Arg Gly Thr Gly Phe Leu Val Ser Pro
 115 120 125
 Asp Gly Tyr Ile Val Thr Asn Asn His Val Val Glu Asp Thr Gly Lys
 130 135 140
 Ile His Val Thr Leu His Asp Gly Gln Lys Tyr Pro Ala Thr Val Ile
 145 150 155 160
 Gly Leu Asp Pro Lys Thr Asp Leu Ala Val Ile Lys Ile Lys Ser Gln
 165 170 175
 Asn Leu Pro Tyr Leu Ser Phe Gly Asn Ser Asp His Leu Lys Val Gly
 180 185 190
 Asp Trp Ala Ile Ala Ile Gly Asn Pro Phe Gly Leu Gln Ala Thr Val
 195 200 205
 Thr Val Val Ser Ser Val Leu Lys Glu Glu Ile Asn Ser Thr Leu Gln
 210 215 220
 Ile Leu Lys Ile Leu Phe Arg Gln Met Leu Arg Leu Ile Gln Ala Thr
 225 230 235 240
 Leu Glu Ala Leu Phe
 245

<210>1052

<211>317

<212>PRT

<213>Chlamydia pneumoniae

<400>1052

Ile Pro Lys Pro Pro Val Ser Phe Phe Trp Lys Leu Arg Pro Leu Lys
 1 5 10 15
 Ser Arg Arg Leu Gly Asn Cys Asn Trp Lys Ser Leu Arg Ser Ser Ser
 20 25 30
 Tyr Gly His Arg Ser Val Ile Ser Ala Lys Gly Arg Asn Gln Leu His
 35 40 45
 Ile Ala Asp Phe Glu Asp Phe Ile Gln Thr Asp Ala Ala Ile Asn Pro
 50 55 60
 Gly Asn Ser Gly Gly Pro Leu Leu Asn Ile Asp Gly Gln Val Ile Gly
 65 70 75 80
 Val Asn Thr Ala Ile Val Ser Gly Ser Gly Gly Tyr Ile Gly Ile Gly
 85 90 95
 Phe Ala Ile Pro Ser Leu Met Ala Asn Arg Ile Ile Asp Gln Leu Ile
 100 105 110
 Arg Asp Gly Gln Val Thr Arg Gly Phe Leu Gly Val Thr Leu Gln Pro
 115 120 125
 Ile Asp Ala Glu Leu Ala Ala Cys Tyr Lys Leu Glu Lys Val Tyr Gly
 130 135 140
 Ala Leu Val Thr Asp Val Val Lys Gly Ser Pro Ala Asp Lys Ala Gly
 145 150 155 160

Leu Lys Gln Glu Asp Val Ile Ile Ala Tyr Asn Gly Lys Glu Val Asp
 165 170 175
 Ser Leu Ser Met Phe Arg Asn Ala Val Ser Leu Met Asn Pro Asp Thr
 180 185 190
 Arg Ile Val Leu Lys Val Val Arg Glu Gly Lys Val Ile Glu Ile Pro
 195 200 205
 Val Thr Val Ser Gln Ala Pro Lys Glu Asp Gly Met Ser Ala Leu Gln
 210 215 220
 Arg Val Gly Ile Arg Val Gln Asn Leu Thr Pro Glu Thr Ala Lys Lys
 225 230 235 240
 Leu Gly Ile Ala Pro Glu Thr Lys Gly Ile Leu Ile Ile Ser Val Glu
 245 250 255
 Pro Gly Ser Val Ala Ala Ser Ser Gly Ile Ala Pro Gly Gln Leu Ile
 260 265 270
 Leu Ala Val Asn Arg Gln Lys Val Ser Ser Ile Glu Asp Leu Asn Arg
 275 280 285
 Thr Leu Lys Asp Ser Asn Asn Glu Asn Ile Leu Leu Met Val Ser Gln
 290 295 300
 Gly Asp Val Ile Arg Phe Ile Ala Leu Lys Pro Glu Glu
 305 310 315

<210>1053

<211>104

<212>PRT

<213>Chlamydia pneumoniae

<400>1053

Arg Phe Ser Tyr Glu Ile Leu Pro Gly Gly Ser Arg Gly Trp Arg Ser
 1 5 10 15
 Ser Ala Asn Leu Pro Ile Val Lys Val Leu Gln Glu Ile Tyr Ser Asp
 20 25 30
 Leu Tyr Asn Glu Glu Cys Leu Arg Leu Val Met Pro Ala Thr Ile Pro
 35 40 45
 Ile Gly Pro Leu Leu Gly Glu Ala Ala Gln Thr Ser Pro Ile Ile Cys
 50 55 60
 Gly Thr Ser Tyr Leu Ser Asp Asp Ile His Ala Ala Glu Glu His Phe
 65 70 75 80
 Ser Met Asp Gln Leu Lys Lys Gly Phe Leu Ser Ile Cys Gln Leu Leu
 85 90 95
 Asp Lys Leu Pro Lys Ile Lys Glu
 100

<210>1054

<211>393

<212>PRT

<213>Chlamydia pneumoniae

<400>1054

Met Leu Asn His Ala Lys Lys His Ala Lys Pro Tyr Val Leu Ile Phe
 1 5 10 15
 Phe Ser Thr Lys Asp Lys Leu Ser Tyr Cys Asp Ile Ile Phe Asn Asn
 20 25 30
 Cys Ser Gly Lys Pro Met Asn Leu Asp Ser Lys His Phe Asp Ile Asn
 35 40 45
 Ser Ala Asn Phe Leu Glu Glu Phe Ala Lys Phe Ile Ser Phe Pro Ser
 50 55 60
 Ile Ser Ala Asp Ser Asp His Leu Gln Asp Cys Glu Asn Cys Ala His
 65 70 75 80
 Phe Leu Val Asp His Val Asn Lys Ile Phe Asp Val Glu Leu Trp Glu
 85 90 95
 Thr Pro Gly His Pro Pro Ile Ile Tyr Ala Ser Tyr Lys Ser Glu Asp
 100 105 110
 Pro Leu Ser Pro Thr Leu Met Leu Tyr Asn His Tyr Asp Val Gln Pro
 115 120 125
 Ala Gln Leu Ser Asp Gly Trp Lys Gly Asp Pro Phe Ile Leu Arg Glu
 130 135 140
 Glu Asn Gly Asn Leu Tyr Ala Arg Gly Ala Ser Asp Asn Lys Gly Gln
 145 150 155 160

Cys Phe Tyr Thr Leu Lys Ala Leu Gln His Tyr Tyr Glu Ser Gln Gly
 165 170 175
 Asn Phe Pro Leu Asn Ile Ile Trp Leu Ile Glu Gly Glu Glu Ser
 180 185 190
 Gly Ser Leu Ala Leu Phe Thr Trp Leu Glu Lys Lys Lys Glu Ala Leu
 195 200 205
 Arg Ala Asp Tyr Leu Leu Ile Val Asp Gly Gly Phe Leu Ser Glu Lys
 210 215 220
 His Pro Tyr Val Ser Ile Gly Ala Arg Gly Ile Val Ser Met Lys Ile
 225 230 235 240
 Ser Leu Glu Glu Gly Asn Lys Asp Met His Ser Gly Val Leu Gly Gly
 245 250 255
 Ile Ala Tyr Asn Thr Asn Arg Ala Leu Ser Glu Ile Leu Ser Ser Leu
 260 265 270
 His His Pro Asp Asn Ser Ile Ala Ile Glu Gly Phe Tyr Asp Asp Leu
 275 280 285
 Ala Leu Pro Ser Asp Ser Asp Arg Pro Asp Leu Pro Lys Ser Asp Thr
 290 295 300
 Leu Arg Glu Cys Glu Glu Asn Leu Gly Phe Arg Pro Gln Gly Tyr Glu
 305 310 315 320
 Ala Ser Tyr Ser Pro Glu Glu Ser Ala Leu Arg Pro Thr Val Glu Ile
 325 330 335
 Asn Gly Ile Ser Gly Gly Tyr Thr Gly Pro Gly Phe Lys Thr Val Ile
 340 345 350
 Pro Tyr Arg Ala Thr Ala Tyr Leu Ser Cys Arg Leu Val Pro Asn Gln
 355 360 365
 Asp Pro Asp Lys Ala Ala His Gln Val Ile His His Leu Lys Gln Gln
 370 375 380
 Val Pro Ser Ser Leu Lys Val Leu Leu
 385 390

<210>1055

<211>978

<212>PRT

<213>Chlamydia pneumoniae

<400>1055

Val Thr Glu Ser Met Lys Ala Gly Asp Thr Tyr Arg Asn Phe Ile Ile
 1 5 10 15
 Lys Ser Cys Lys Asp Leu Pro Glu Ile Glu Ser Lys Leu Leu Glu Ala
 20 25 30
 Glu His Lys Pro Thr Gly Ala Ser Ile Met Met Ile Val Asn Asn Asp
 35 40 45
 Glu Glu Asn Val Phe Asn Ile Cys Phe Arg Thr Cys Pro Gln Thr Ser
 50 55 60
 Asn Gly Val Ala His Val Leu Glu His Met Val Leu Cys Gly Ser Glu
 65 70 75 80
 Asn Tyr Pro Val Arg Asp Pro Phe Phe Ser Met Thr Arg Arg Ser Leu
 85 90 95
 Asn Thr Phe Ile Asn Ala Phe Thr Gly Pro Asp Phe Thr Cys Tyr Pro
 100 105 110
 Ala Ala Ser Gln Ile Pro Glu Asp Phe Tyr Asn Leu Leu Ser Val Tyr
 115 120 125
 Ile Asp Ala Val Phe His Pro Leu Leu Thr Lys Gln Ser Phe Leu Gln
 130 135 140
 Glu Ala Trp Arg Tyr Glu Phe Asn Ser Glu Asn His Leu Cys Tyr Thr
 145 150 155 160
 Gly Val Val Phe Asn Glu Met Lys Gly Ala Met Met Ser Gly Glu Ala
 165 170 175
 Arg Leu Ser Glu Ala Leu Asn Ala Ala Ile Phe Pro Ser Val Thr Tyr
 180 185 190
 Gly Val Asn Ser Gly Gly Glu Pro Arg Glu Ile Val Thr Leu Ser His
 195 200 205
 Glu Asp Val Arg Ala Phe His Gln Ser Gln Tyr Ser Ile Asn Arg Cys
 210 215 220
 Leu Phe Tyr Phe Tyr Gly Asn Ile Lys Pro Ser Arg His Leu Asp Phe

225		230		235		240
Leu Glu Glu Lys Leu	Leu Arg Gln Ala Thr Lys Leu Glu Lys Gln Ala					
	245		250		255	
Val Ser Val Pro Leu	Gln Lys Arg Phe Lys Glu Pro Val Arg Asn Ile					
	260		265		270	
Leu Thr Tyr Pro Val	Asp His Gln Glu Glu Asp Lys Val Leu Phe Gly					
	275		280		285	
Ile Ser Trp Leu Thr	Cys Ser Ile Leu Glu Gln Gln Glu Leu Leu Ala					
	290		295		300	
Leu His Val Leu Glu	Ile Ile Leu Met Gly Thr Asp Ala Ser Pro Leu					
305		310		315		320
Lys Ser Arg Leu Leu	Lys Ser Gly Phe Cys Lys Gln Thr Glu Met Ser					
	325		330		335	
Ile Glu Asn Asp Ile	Arg Glu Ile Pro Met Thr Leu Val Cys Lys Gly					
	340		345		350	
Cys Ser Pro Ala Gly	Ala Gln Lys Leu Glu Ala Leu Ile Phe Ala Ser					
	355		360		365	
Leu Glu Glu Ile Ile	Arg Glu Gly Ile Ser Glu Asn Ile Val Glu Gly					
	370		375		380	
Ala Val His Gln Leu	Glu Leu Ser Arg Lys Glu Ile Thr Gly Tyr Ser					
385		390		395		400
Leu Pro Tyr Gly Leu	Ser Leu Phe Phe Arg Ser Gly Leu Leu Lys Gln					
	405		410		415	
His Gly Gly Ser Ala	Glu Asp Gly Leu Arg Ile His Asn Leu Phe Ser					
	420		425		430	
Glu Leu Arg Asn Ser	Leu Lys Asn Ser Asp Tyr Leu Ala Lys Leu Ile					
	435		440		445	
Arg Lys Tyr Phe Leu	Asp Asn Pro His Phe Ala Arg Val Ile Leu Leu					
	450		455		460	
Pro Asp Thr Glu Leu	Val Ala Lys Asp Asn Lys Asp Glu Gln Gln Leu					
465		470		475		480
Leu Leu Ser Val Ser	Glu Lys Leu Thr Asp Glu Asn Lys Glu Lys Ile					
	485		490		495	
Gln Gln Asn Val Arg	Glu Leu Thr Glu Ser Gln Glu Gln Lys Glu Asp					
	500		505		510	
Leu Asn Gly Ile Leu	Pro Asn Leu Ala Leu Asp Lys Val Pro Thr Ser					
	515		520		525	
Gly Lys Glu Phe Pro	Leu Ile Lys Glu Gly Leu Ser Gln Gly Glu Val					
	530		535		540	
Leu His His Glu Cys	Phe Thr Asn Asp Ile Val Phe Ile Asp Val Val					
545		550		555		560
Leu Asp Ile Pro Pro	Leu Ser Gly Glu Glu Leu Pro Trp Leu Arg Leu					
	565		570		575	
Leu Val Phe Leu Met	Leu Gln Leu Gly Cys Gly Gly Arg Ser Tyr Lys					
	580		585		590	
Glu His Leu Glu Phe	Leu Leu Glu His Thr Gly Gly Val Asp Val Ser					
	595		600		605	
Tyr Asp Phe Ser Pro	His Ala Asn Lys Asn Ser Phe Leu Ser Pro Ser					
	610		615		620	
Val Ser Ile Arg Gly	Lys Ala Leu Ser Ser Lys Ser Glu Lys Leu Cys					
625		630		635		640
Gly Ile Val Ser Asp	Met Leu Thr Ser Val Asp Phe Thr Asp Ile Pro					
	645		650		655	
Arg Ile Arg Glu Leu	Leu Met Gln His Asn Glu Ala Leu Thr Asn Ser					
	660		665		670	
Val Arg Asn Ser Pro	Met Ser Tyr Ala Val Ser Met Ala Cys Ser Gly					
	675		680		685	
Asn Ser Ile Thr Gly	Ala Met Ser Tyr Leu Thr Thr Gly Leu Pro Tyr					
	690		695		700	
Val Lys Lys Ile Arg	Glu Leu Thr Lys Asn Phe Asp Gln Asn Ile Asp					
705		710		715		720
Glu Ala Val Val Ile	Leu Gln Arg Leu Tyr Thr Lys Cys Phe Ser Gly					
	725		730		735	
Lys Arg Gln Ile Val	Ile Ser Gly Ser Ala His Asn Tyr Gln Gln Leu					

740 745 750
 Lys Asp Asn Lys Phe Tyr Gly Leu Leu Asp Tyr Leu Ile Val Ile Pro
 755 760 765
 Glu Pro Trp Glu Asn Pro Ser Ile Asn Leu Tyr Val Thr Ser Arg Gly
 770 775 780
 Leu His Ile Pro Ala Arg Ala Phe Asn Ala Leu Ala Phe Pro Ile
 785 790 795 800
 Gly Asp Ile Ala Tyr Asp His Pro Asp Ala Ala Ala Leu Thr Val Ala
 805 810 815
 Ala Glu Ile Leu Asp Asn Val Val Leu His Thr Lys Ile Arg Glu Gln
 820 825 830
 Gly Gly Ala Tyr Gly Ser Gly Ala Ala Ala Asn Leu Ser Arg Gly Ser
 835 840 845
 Phe Tyr Cys Tyr Ser Tyr Arg Asp Pro Glu Ile Ala Thr Thr Tyr Lys
 850 855 860
 Thr Phe Leu Lys Gly Val Ser Glu Ile Ala Ser Gly Asn Phe Thr Lys
 865 870 875 880
 Glu Asp Ile Tyr Glu Gly Ala Leu Gly Val Val Gln Gly Leu Asp Met
 885 890 895
 Pro Val Ala Pro Gly Ser Arg Ala Ser Val Ala Phe Tyr Arg Leu Lys
 900 905 910
 Ser Gly Arg Ile Pro Val Leu Arg Gln Ala Phe Arg Arg Ser Val Leu
 915 920 925
 Glu Val Thr Lys Glu His Ile Cys Met Val Met Asp Lys Tyr Leu Glu
 930 935 940
 Ser Thr Val Gln Glu Thr Thr Leu Ile Ser Phe Ala Gly Glu Glu Met
 945 950 955 960
 Leu Arg Asn Asn Val Leu Thr Leu Asp Lys Asp Phe Pro Ile Val Pro
 965 970 975
 Ala Ile

<210>1056

<211>418

<212>PRT

<213>Chlamydia pneumoniae

<400>1056

Lys Lys Glu Leu Ala Ser Val Met Asn Leu Pro Val Ser Leu Ala Cys
 1 5 10 15
 Leu Leu Leu Ser Gly Cys Val Phe Phe Leu Gly Val Phe Val Ser Ser
 20 25 30
 Ser Leu Tyr Ala Arg Lys Lys Arg Ala Phe Leu Glu Lys Ile Gln Lys
 35 40 45
 Leu Glu His Glu Asn Gln Leu Leu Gln Thr Ser Leu Asn Leu Ser Arg
 50 55 60
 His Gln Glu Gln Leu Ile Glu Asp Phe Ser Asn Arg Leu Ala Leu Ser
 65 70 75 80
 Ser His Lys Leu Ile Lys Asp Met Lys Glu Glu Ala Gln Asn Tyr Phe
 85 90 95
 Gly Asp Thr Ser Lys Ser Phe Gln Ser Ile Leu Ser Pro Ile Gln Thr
 100 105 110
 Thr Leu Thr Thr Phe Lys Gln Ser Leu Glu Thr Phe Glu Thr Lys His
 115 120 125
 Ala Glu Asp Arg Gly Arg Leu Lys Glu Gln Ile Ser Gln Leu Leu Ala
 130 135 140
 Val Glu Lys Lys Leu Glu His Glu Thr His Val Leu Thr Asp Ile Leu
 145 150 155 160
 Lys His Pro Gly Ser Arg Gly Arg Trp Gly Glu Ile Gln Leu Glu Arg
 165 170 175
 Ile Leu Glu Leu Ala Gly Met Leu Lys Tyr Cys Asp Tyr Asp Ser Gln
 180 185 190
 Thr Thr Ser Ala Gln Gly Ala Phe Arg Ala Asp Ile Ile Ile Arg Leu
 195 200 205
 Pro Gln Asp Arg Cys Leu Ile Ile Asp Ala Lys Ala Pro Ile Ser Asp
 210 215 220

Ser Tyr Phe Ser Val Glu Glu Ile Asp Lys Gly Asp Leu Val Asp Lys
 225 230 235 240
 Ile Lys Glu His Ile Lys Thr Leu Lys Ser Lys Ser Tyr Trp Glu Lys
 245 250 255
 Phe His Gln Ser Pro Glu Tyr Val Ile Leu Phe Leu Pro Gly Glu Ser
 260 265 270
 Leu Phe Asn Asp Ala Ile Arg Leu Ala Pro Glu Leu Met Glu Ile Gly
 275 280 285
 Ala Ser Ser Asn Val Ile Leu Ser Ser Pro Leu Thr Leu Leu Ala Leu
 290 295 300
 Leu Lys Thr Ile Ala Tyr Met Trp Lys Gln Glu Asn Leu Gln Lys Gln
 305 310 315 320
 Ile Gln Glu Val Ser Leu Leu Gly Lys Glu Leu His Arg Arg Leu Gln
 325 330 335
 Val Val Phe Thr His Phe Gln Lys Ile Gly Lys Asn Leu Asn Gln Thr
 340 345 350
 Val Gln Ser Tyr Asn Asp Met Thr Ser Ser Phe Gln Tyr Arg Val Leu
 355 360 365
 Pro Thr Leu Arg Lys Phe Glu Gly Leu Glu Thr Ser Ser Ser His Gln
 370 375 380
 Ile Glu Glu Pro Thr Pro Ile Glu Ser Leu Ala Thr Ser Phe Pro His
 385 390 395 400
 Thr Cys Asp Ile Asp Thr Asn Leu Ala Val Ile Glu Ser Leu Glu Lys
 405 410 415
 Gln Asp

<210>1057

<211>265

<212>PRT

<213>Chlamydia pneumoniae

<400>1057

Met Ala Gly Leu Asp Leu Glu Ala Arg Gly Lys Arg Arg Val Val Thr
 1 5 10 15
 Pro Asn Ala Ile Thr Ala Phe Gly Leu Cys Cys Gly Leu Phe Ile Ile
 20 25 30
 Phe Lys Ser Val Leu Arg Thr Ser Ser Ser Val Glu Leu Phe His Arg
 35 40 45
 Leu Gln Gly Leu Ser Leu Leu Leu Ile Ser Ala Met Ile Ala Asp Phe
 50 55 60
 Ser Asp Gly Ala Ile Ala Arg Ile Met Lys Ala Glu Ser Ala Phe Gly
 65 70 75 80
 Ala Gln Phe Asp Ser Leu Ser Asp Ala Val Thr Phe Gly Ile Ala Pro
 85 90 95
 Pro Leu Ile Ala Ile Lys Ser Leu Asp Gly Ile Tyr Val Gly Asn Phe
 100 105 110
 Phe Ser Ser Leu Leu Leu Ile Thr Ser Ile Ile Tyr Ser Leu Cys Gly
 115 120 125
 Val Leu Arg Leu Val Arg Tyr Asn Leu Phe Ser Gln Lys Thr Val Asp
 130 135 140
 Val Ser Lys Pro Tyr Cys Phe Ile Gly Leu Pro Ile Pro Ala Ala Ala
 145 150 155 160
 Ala Ser Ile Val Ser Leu Ala Leu Phe Leu Ala Ser Asp Phe Phe Pro
 165 170 175
 Asp Leu Pro Ala Gln Leu Arg Val Gly Leu Leu Ser Phe Ala Leu Leu
 180 185 190
 Phe Ile Gly Gly Leu Met Ile Ser Pro Trp Lys Phe Pro Gly Val Lys
 195 200 205
 His Phe Arg Phe Asn Val Ser Ser Phe Leu Leu Val Val Thr Ile Gly
 210 215 220
 Leu Ala Ala Cys Leu Phe Phe Ser Gly Leu Val Asp His Phe Val Glu
 225 230 235 240
 Val Phe Phe Leu Val Ser Trp Leu Tyr Thr Leu Val Gly Phe Pro Ile
 245 250 255
 Phe Ser Ile Ile Tyr Arg Lys Lys Ser

260 265
 <210>1058
 <211>1047
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>1058
 Gly Lys Val Met Val Glu Val Glu Glu Lys His Tyr Thr Ile Val Lys
 1 5 10 15
 Arg Asn Gly Met Phe Val Pro Phe Asn Gln Asp Arg Ile Phe Gln Ala
 20 25 30
 Leu Glu Ala Ala Phe Arg Asp Thr Arg Ser Leu Glu Thr Ser Ser Pro
 35 40 45
 Leu Pro Lys Asp Leu Glu Glu Ser Ile Ala Gln Ile Thr His Lys Val
 50 55 60
 Val Lys Glu Val Leu Ala Lys Ile Ser Glu Gly Gln Val Val Thr Val
 65 70 75 80
 Glu Arg Ile Gln Asp Leu Val Glu Ser Gln Leu Tyr Ile Ser Gly Leu
 85 90 95
 Gln Asp Val Ala Arg Asp Tyr Ile Val Tyr Arg Asp Gln Arg Lys Ala
 100 105 110
 Glu Arg Gly Asn Ser Ser Ser Ile Ile Ala Ile Ile Arg Arg Asp Gly
 115 120 125
 Gly Ser Ala Lys Phe Asn Pro Met Lys Ile Ser Ala Ala Leu Glu Lys
 130 135 140
 Ala Phe Arg Ala Thr Leu Gln Ile Asn Gly Met Thr Pro Pro Ala Thr
 145 150 155 160
 Leu Ser Glu Ile Asn Asp Leu Thr Leu Arg Ile Val Glu Asp Val Leu
 165 170 175
 Ser Leu His Gly Glu Glu Ala Ile Asn Leu Glu Glu Ile Gln Asp Ile
 180 185 190
 Val Glu Lys Gln Leu Met Val Ala Gly Tyr Tyr Asp Val Ala Lys Asn
 195 200 205
 Tyr Ile Leu Tyr Arg Glu Ala Arg Ala Arg Ala Arg Ala Asn Lys Asp
 210 215 220
 Gln Asp Gly Gln Glu Glu Phe Val Pro Gln Glu Glu Thr Tyr Val Val
 225 230 235 240
 Gln Lys Glu Asp Gly Thr Thr Tyr Leu Leu Arg Lys Thr Asp Leu Glu
 245 250 255
 Lys Arg Phe Ser Trp Ala Cys Lys Arg Phe Pro Lys Thr Thr Asp Ser
 260 265 270
 Gln Leu Leu Ala Asp Met Ala Phe Met Asn Leu Tyr Ser Gly Ile Lys
 275 280 285
 Glu Asp Glu Val Thr Thr Ala Cys Ile Met Ala Ala Arg Ala Asn Ile
 290 295 300
 Glu Arg Glu Pro Asp Tyr Ala Phe Ile Ala Ala Glu Leu Leu Thr Ser
 305 310 315 320
 Ser Leu Tyr Glu Glu Thr Leu Gly Cys Ser Ser Gln Asp Pro Asn Leu
 325 330 335
 Ser Glu Ile His Lys Lys His Phe Lys Glu Tyr Ile Leu Asn Gly Glu
 340 345 350
 Glu Tyr Arg Leu Asn Pro Gln Leu Lys Asp Tyr Asp Leu Asp Ala Leu
 355 360 365
 Ser Glu Val Leu Asp Leu Ser Arg Asp Gln Gln Phe Ser Tyr Met Gly
 370 375 380
 Val Gln Asn Leu Tyr Asp Arg Tyr Phe Asn Leu His Glu Gly Arg Arg
 385 390 395 400
 Leu Glu Thr Ala Gln Ile Phe Trp Met Arg Val Ser Met Gly Leu Ala
 405 410 415
 Leu Asn Glu Gly Glu Gln Lys Asn Phe Trp Ala Ile Thr Phe Tyr Asn
 420 425 430
 Leu Leu Ser Thr Phe Arg Tyr Thr Pro Ala Thr Pro Thr Leu Phe Asn
 435 440 445
 Ser Gly Met Arg His Ser Gln Leu Ser Ser Cys Tyr Leu Ser Thr Val
 450 455 460

Lys	Asp	Asp	Leu	Ser	His	Ile	Tyr	Lys	Val	Ile	Ser	Asp	Asn	Ala	Leu	465	470	475	480
Leu	Ser	Lys	Trp	Ala	Gly	Gly	Ile	Gly	Asn	Asp	Trp	Thr	Asp	Val	Arg	485	490		495
Ala	Thr	Gly	Ala	Val	Ile	Lys	Gly	Thr	Asn	Gly	Lys	Ser	Gln	Gly	Val	500	505		510
Ile	Pro	Phe	Ile	Lys	Val	Ala	Asn	Asp	Thr	Ala	Ile	Ala	Val	Asn	Gln	515	520		525
Gly	Gly	Lys	Arg	Lys	Gly	Ala	Met	Cys	Val	Tyr	Leu	Glu	Asn	Trp	His	530	535		540
Leu	Asp	Tyr	Glu	Asp	Phe	Leu	Glu	Leu	Arg	Lys	Asn	Thr	Gly	Asp	Glu	545	550	555	560
Arg	Arg	Arg	Thr	His	Asp	Ile	Asn	Thr	Ala	Ser	Trp	Ile	Pro	Asp	Leu	565	570		575
Phe	Phe	Lys	Arg	Leu	Glu	Lys	Lys	Gly	Met	Trp	Thr	Leu	Phe	Ser	Pro	580	585		590
Asp	Asp	Val	Pro	Gly	Leu	His	Glu	Ala	Tyr	Gly	Leu	Glu	Phe	Glu	Lys	595	600		605
Leu	Tyr	Glu	Glu	Tyr	Glu	Arg	Lys	Val	Glu	Ser	Gly	Glu	Ile	Arg	Leu	610	615		620
Tyr	Lys	Lys	Val	Glu	Ala	Glu	Val	Leu	Trp	Arg	Lys	Met	Leu	Ser	Met	625	630	635	640
Leu	Tyr	Glu	Thr	Gly	His	Pro	Trp	Ile	Thr	Phe	Lys	Asp	Pro	Ser	Asn	645	650		655
Ile	Arg	Ser	Asn	Gln	Asp	His	Val	Gly	Val	Val	Arg	Cys	Ser	Asn	Leu	660	665		670
Cys	Thr	Glu	Ile	Leu	Leu	Asn	Cys	Ser	Glu	Ser	Glu	Thr	Ala	Val	Cys	675	680		685
Asn	Leu	Gly	Ser	Ile	Asn	Leu	Val	Glu	His	Ile	Arg	Asn	Asp	Lys	Leu	690	695	700	
Asp	Glu	Glu	Lys	Leu	Lys	Glu	Thr	Ile	Ser	Ile	Ala	Ile	Arg	Ile	Leu	705	710	715	720
Asp	Asn	Val	Ile	Asp	Leu	Asn	Phe	Tyr	Pro	Thr	Pro	Glu	Ala	Lys	Gln	725	730		735
Ala	Asn	Leu	Thr	His	Arg	Ala	Val	Gly	Leu	Gly	Val	Met	Gly	Phe	Gln	740	745		750
Asp	Val	Leu	Tyr	Glu	Leu	Asn	Ile	Ser	Tyr	Ala	Ser	Gln	Glu	Ala	Val	755	760		765
Glu	Phe	Ser	Asp	Glu	Cys	Ser	Glu	Ile	Ile	Ala	Tyr	Tyr	Ala	Ile	Leu	770	775		780
Ala	Ser	Ser	Leu	Leu	Ala	Lys	Glu	Arg	Gly	Thr	Tyr	Ala	Ser	Tyr	Ser	785	790	795	800
Gly	Ser	Lys	Trp	Asp	Arg	Gly	Tyr	Leu	Pro	Leu	Asp	Thr	Ile	Glu	Leu	805	810		815
Leu	Lys	Glu	Thr	Arg	Gly	Glu	His	Asn	Val	Leu	Val	Asp	Thr	Ser	Ser	820	825		830
Lys	Lys	Asp	Trp	Thr	Pro	Val	Arg	Asp	Thr	Ile	Gln	Lys	Tyr	Gly	Met	835	840		845
Arg	Asn	Ser	Gln	Val	Met	Ala	Ile	Ala	Pro	Thr	Ala	Thr	Ile	Ser	Asn	850	855		860
Ile	Ile	Gly	Val	Thr	Gln	Ser	Ile	Glu	Pro	Met	Tyr	Lys	His	Leu	Phe	865	870	875	880
Val	Lys	Ser	Asn	Leu	Ser	Gly	Glu	Phe	Thr	Ile	Pro	Asn	Thr	Tyr	Leu	885	890		895
Ile	Lys	Lys	Leu	Lys	Glu	Leu	Gly	Leu	Trp	Asp	Ala	Glu	Met	Leu	Asp	900	905		910
Asp	Leu	Lys	Tyr	Phe	Asp	Gly	Ser	Leu	Leu	Glu	Ile	Glu	Arg	Ile	Pro	915	920		925
Asn	His	Leu	Lys	Lys	Leu	Phe	Leu	Thr	Ala	Phe	Glu	Ile	Glu	Pro	Glu	930	935		940
Trp	Ile	Ile	Glu	Cys	Thr	Ser	Arg	Arg	Gln	Lys	Trp	Ile	Asp	Met	Gly	945	950	955	960
Val	Ser	Leu	Asn	Leu	Tyr	Leu	Ala	Glu	Pro	Asp	Gly	Lys	Lys	Leu	Ser	965	970		975

Asn Met Tyr Leu Thr Ala Trp Lys Lys Gly Leu Lys Thr Thr Tyr Tyr
 980 985 990
 Leu Arg Ser Gln Ala Ala Thr Ser Val Glu Lys Ser Phe Ile Asp Ile
 995 1000 1005
 Asn Lys Arg Gly Ile Gln Pro Arg Trp Met Lys Asn Lys Ser Ala Ser
 1010 1015 1020
 Thr Ser Ile Val Val Glu Arg Lys Thr Thr Pro Val Cys Ser Met Glu
 1025 1030 1035 1040
 Glu Gly Cys Glu Ser Cys Gln
 1045

<210>1059

<211>365

<212>PRT

<213>Chlamydia pneumoniae

<400>1059

Leu Phe Asn Gly Arg Arg Leu Arg Ile Leu Ser Ile Thr Glu Lys Arg
 1 5 10 15
 Gly Ala Lys Met Glu Ala Asp Ile Leu Asp Gly Lys Leu Lys Arg Val
 20 25 30
 Glu Val Ser Lys Lys Gly Leu Val Asn Cys Asn Gln Val Asp Val Asn
 35 40 45
 Gln Leu Val Pro Ile Lys Tyr Lys Trp Ala Trp Glu His Tyr Leu Asn
 50 55 60
 Gly Cys Ala Asn Asn Trp Leu Pro Thr Glu Val Pro Met Ala Arg Asp
 65 70 75 80
 Ile Glu Leu Trp Lys Ser Asp Glu Leu Ser Glu Asp Glu Arg Arg Val
 85 90 95
 Ile Leu Leu Asn Leu Gly Phe Phe Ser Thr Ala Glu Ser Leu Val Gly
 100 105 110
 Asn Asn Ile Val Leu Ala Ile Phe Lys His Ile Thr Asn Pro Glu Ala
 115 120 125
 Arg Gln Tyr Leu Leu Arg Gln Ala Phe Glu Glu Ala Val His Thr His
 130 135 140
 Thr Phe Leu Tyr Ile Cys Glu Ser Leu Gly Leu Asp Glu Gly Glu Val
 145 150 155 160
 Phe Asn Ala Tyr Asn Glu Arg Ala Ser Ile Arg Ala Lys Asp Asp Phe
 165 170 175
 Gln Met Thr Leu Thr Val Asp Val Leu Asp Pro Asn Phe Ser Val Gln
 180 185 190
 Ser Ser Glu Gly Leu Gly Gln Phe Ile Lys Asn Leu Val Gly Tyr Tyr
 195 200 205
 Ile Ile Met Glu Gly Ile Phe Phe Tyr Ser Gly Phe Val Met Ile Leu
 210 215 220
 Ser Phe His Arg Gln Asn Lys Met Thr Gly Ile Gly Glu Gln Tyr Gln
 225 230 235 240
 Tyr Ile Leu Arg Asp Glu Thr Ile His Leu Asn Phe Gly Ile Asp Leu
 245 250 255
 Ile Asn Gly Ile Lys Glu Glu Asn Pro Glu Val Trp Thr Thr Glu Leu
 260 265 270
 Gln Glu Glu Ile Val Ala Leu Ile Glu Lys Ala Val Glu Leu Glu Ile
 275 280 285
 Glu Tyr Ala Lys Asp Cys Leu Pro Arg Gly Ile Leu Gly Leu Arg Ser
 290 295 300
 Ser Met Phe Ile Asp Tyr Val Arg His Ile Ala Asp Arg Arg Leu Glu
 305 310 315 320
 Arg Ile Gly Leu Lys Pro Ile Tyr His Ser Arg Asn Pro Phe Pro Trp
 325 330 335
 Met Ser Glu Thr Met Asp Leu Asn Lys Glu Lys Asn Phe Phe Glu Thr
 340 345 350
 Arg Val Thr Glu Tyr Gln Thr Ala Gly Asn Leu Ser Trp
 355 360 365

<210>1060

<211>228

<212>PRT

<213>Chlamydia pneumoniae

<400>1060

Phe Leu Leu Phe Met Lys Pro Gln Asp Leu Ser Pro Pro Phe Leu Trp
1 5 10 15
Lys Glu Arg Arg Pro Cys Ile Gln Asp Gly Val Leu Tyr Val Pro Arg
20 25 30
His Tyr Phe Glu His Gln Asn Phe Ser Thr Ser Tyr His Gln Glu Phe
35 40 45
Phe Gln Asn His Thr Ser Ile Ala Cys Glu Leu Cys Ser Gly Asn Gly
50 55 60
Asp Trp Val Val Ala Gln Ala Gln Lys Asp Pro Gln Val Leu Trp Ile
65 70 75 80
Ala Val Glu Gln Arg Phe Asp Arg Val Arg Lys Ile Trp Ser Lys Met
85 90 95
Ile Asn His Gln Ile Gln Asn Leu Arg Ile Val Cys Gly Thr Ala Glu
100 105 110
Thr Phe Phe Gln Tyr Tyr Val Pro Asp Gln Phe Leu Gln Arg Leu Val
115 120 125
Val Asn Phe Pro Asp Pro Trp Pro Lys Met Arg His Arg Lys His Arg
130 135 140
Leu Leu Gln Pro Ser Phe Val Gln Glu Ile Ser Arg Ser Leu Gln Asp
145 150 155 160
Ser Ala Val Phe Ala Leu Ala Thr Asp Asp Lys Thr Tyr Leu Leu Glu
165 170 175
Ser Ile Glu Ala Leu Gln Thr His Leu Ala Pro Arg Met Glu Thr Pro
180 185 190
Tyr Tyr Ile Lys Met Thr Asp Thr Tyr Gly Asn Ser Trp Phe Glu Asn
195 200 205
Leu Trp Arg Thr Lys Gly Gln Glu Ile Phe Tyr Thr Glu Phe Ile Lys
210 215 220

Lys Ala Gly Ile

225

<210>1061

<211>175

<212>PRT

<213>Chlamydia pneumoniae

<400>1061

Met Phe Ala Tyr Arg Thr Leu Leu Thr His Asn Val Val Gln Val Ser
1 5 10 15
His Glu Ile Phe Lys Thr Thr Val Val Pro Gly Asp Thr Val Ile Asp
20 25 30
Ala Thr Cys Gly Asn Gly Asn Asp Ser Leu Phe Leu Ala Arg Leu Leu
35 40 45
Gln Gly Glu Gly Arg Leu Val Val Tyr Asp Ile Gln Lys Glu Ala Leu
50 55 60
Ser Asn Ala Leu Leu Leu Phe Glu Thr His Leu Ser Glu Gln Glu Arg
65 70 75 80
Ser Val Ile Glu Met Lys Glu Gln Ser His Glu His Ile Leu Glu Lys
85 90 95
Asp Val Lys Leu Ile His Tyr Asn Leu Gly Tyr Leu Pro Lys Gly Asn
100 105 110
Lys Glu Ile Thr Thr Leu Ala Arg Thr Thr Glu Ile Ser Leu Glu Tyr
115 120 125
Ala Leu Asn Ile Val Arg Pro Asp Gly Leu Ile Thr Val Val Cys Tyr
130 135 140
Pro Gly His Pro Glu Gly Glu Lys Glu Thr His Ser Val Glu Ser Leu
145 150 155 160
Ala Gln Arg Leu His Pro Lys Glu Trp Cys Val Ser His Phe Met
165 170 175

<210>1062

<211>97

<212>PRT

<213>Chlamydia pneumoniae

<400>1062

Arg Ser Pro Ile Arg Ser Leu Leu Leu Ala Val Phe Ser Val Ile Leu
 1 5 10 15
 Lys Glu Leu Leu Leu Ala Ser Leu Leu Thr Gln Pro Gly Leu Lys Gly
 20 25 30
 Leu Ala Ile Gly Gly Ala Gln Ile Ser Pro Leu His Ala Asn Phe Ile
 35 40 45
 Ile Asn Thr Gly Lys Ala Thr Ser Asp Glu Val Lys Gln Leu Ile Ala
 50 55 60
 Ile Ile Gln Ser Thr Leu Lys Thr Gln Gly Ile Asp Leu Glu His Glu
 65 70 75 80
 Ile Arg Ile Ile Pro Tyr Gln Pro Lys Ile His Ser Pro Val Ser Glu
 85 90 95
 Lys

<210>1063

<211>263

<212>PRT

<213>Chlamydia pneumoniae

<400>1063

Met Lys Glu Ala Ala Pro Met His Phe Pro Phe Pro Val Arg Arg Ser
 1 5 10 15
 Val Trp Leu Asn Arg Tyr Ser Thr Phe Arg Ile Gly Gly Pro Ala Asn
 20 25 30
 Tyr Phe Lys Ala Ile His Thr Ile Glu Glu Ala Arg Glu Val Ile Arg
 35 40 45
 Phe Leu His Ser Ile Asn Tyr Pro Phe Leu Ile Ile Gly Lys Gly Ser
 50 55 60
 Asn Cys Leu Phe Asp Asp Arg Gly Phe Asp Gly Phe Val Leu Tyr Asn
 65 70 75 80
 Ala Ile Tyr Gly Lys Gln Phe Leu Glu Asp Ala Arg Ile Lys Ala Tyr
 85 90 95
 Ser Gly Leu Ser Phe Ala Ala Leu Gly Lys Ala Thr Ala Tyr Asn Gly
 100 105 110
 Tyr Ser Gly Leu Glu Phe Ala Ala Gly Ile Pro Gly Ser Val Gly Gly
 115 120 125
 Ala Ile Phe Met Asn Ala Gly Thr Asn Glu Ser Asp Ile Ser Ser Val
 130 135 140
 Val Arg Asn Val Glu Thr Ile Asn Ser Glu Gly Glu Leu Cys Ser Tyr
 145 150 155 160
 Ser Val Glu Glu Leu Glu Leu Ser Tyr Arg Ser Ser Arg Phe His Arg
 165 170 175
 Gln Gln Glu Phe Ile Leu Ser Ala Thr Phe Gln Leu Ser Lys Lys Gln
 180 185 190
 Val Ser Ala Asp His Ser Lys Ser Ile Leu Gln His Arg Leu Met Thr
 195 200 205
 Gln Pro Tyr Thr Gln Pro Ser Ala Gly Cys Ile Phe Arg Asn Pro Glu
 210 215 220
 Gly Thr Ser Ala Gly Lys Leu Ile Asp Ala Ala Trp Val Glu Gly Ile
 225 230 235 240
 Ser Asn Arg Arg Gly Thr Asn Phe Ser Val Ala Cys Lys Leu His Tyr
 245 250 255
 Gln Tyr Trp Gln Gly His Phe
 260

<210>1064

<211>179

<212>PRT

<213>Chlamydia pneumoniae

<400>1064

Leu Arg Thr Ser Leu Ala Val Lys Cys Val Leu Leu Thr Ile Phe Trp
 1 5 10 15
 Leu Leu Val Met Ala Thr Leu Ser Pro Glu Lys Phe Ser Gly Ser Pro
 20 25 30
 Ile Ser Ile Ser Lys Glu Phe Pro Gln Gln Lys Met Arg Glu Ile Ile
 35 40 45

Leu Gln Met Leu Tyr Ala Leu Asp Met Ala Pro Ser Ala Glu Asp Ser
 50 55 60
 Leu Val Pro Leu Leu Met Ser Gln Thr Ala Val Ser Gln Lys His Val
 65 70 75 80
 Leu Val Ala Leu Asn Gln Thr Lys Ser Ile Leu Glu Lys Ser Gln Glu
 85 90 95
 Leu Asp Leu Ile Ile Gly Asn Ala Leu Lys Asn Lys Ser Phe Asp Ser
 100 105 110
 Leu Asp Leu Val Glu Lys Asn Val Leu Arg Leu Thr Leu Phe Glu His
 115 120 125
 Phe Tyr Ser Pro Pro Ile Asn Lys Ala Ile Leu Ile Ala Glu Ala Ile
 130 135 140
 Arg Leu Val Lys Lys Phe Ser Tyr Ser Glu Ala Cys Pro Phe Ile Gln
 145 150 155 160
 Ala Ile Leu Asn Asp Ile Phe Thr Asp Ser Ser Leu Asn Glu Asn Ser
 165 170 175
 Leu Ser Ile

<210>1065

<211>187

<212>PRT

<213>Chlamydia pneumoniae

<400>1065

Ser Val Ala Leu Asn Phe Lys Ile Asn Arg Gln Ile Arg Ala Pro Lys
 1 5 10 15
 Val Arg Leu Ile Gly Ser Ala Gly Glu Gln Leu Gly Ile Leu Ala Ile
 20 25 30
 Lys Asp Ala Leu Asp Leu Ala Arg Glu Ala Gly Leu Asp Leu Val Glu
 35 40 45
 Val Ala Ser Asn Ser Glu Pro Pro Val Cys Lys Ile Met Asp Tyr Gly
 50 55 60
 Lys Tyr Arg Tyr Gly Leu Thr Lys Lys Glu Lys Asp Ser Lys Lys Ala
 65 70 75 80
 Gln His Gln Val Arg Ile Lys Glu Val Lys Leu Lys Pro Asn Ile Asp
 85 90 95
 Glu Asn Asp Phe Ser Thr Lys Leu Lys Gln Ala Arg Thr Phe Val Glu
 100 105 110
 Lys Gly Asn Lys Val Lys Ile Thr Cys Met Phe Arg Gly Arg Glu Leu
 115 120 125
 Ala Tyr Pro Glu His Gly Phe Lys Val Val Gln Lys Met Ser Gln Gly
 130 135 140
 Leu Glu Asp Ile Gly Phe Val Glu Ala Glu Pro Lys Leu Ala Gly Arg
 145 150 155 160
 Ser Leu Ile Cys Val Val Ala Pro Gly Thr Val Lys Thr Lys Lys Lys
 165 170 175
 Gln Glu Lys Ser His Ala Gln Asp Glu Asn Gln
 180 185

<210>1066

<211>121

<212>PRT

<213>Chlamydia pneumoniae

<400>1066

Met Val Arg Ala Thr Gly Ser Val Ala Ser Arg Arg Arg Arg Lys Arg
 1 5 10 15
 Ile Leu Lys Gln Ala Lys Gly Phe Trp Gly Asp Arg Lys Gly His Ile
 20 25 30
 Arg Gln Ser Arg Ser Ser Val Met Arg Ala Met Ala Phe Asn Tyr Met
 35 40 45
 His Arg Lys Asp Arg Lys Gly Asp Phe Arg Ser Leu Trp Ile Ala Arg
 50 55 60
 Leu Asn Val Ala Ser Arg Ile His Ser Leu Ser Tyr Ser Arg Leu Ile
 65 70 75 80
 Asn Gly Leu Lys Cys Ala Asn Ile Ser Leu Asn Arg Lys Met Leu Ser
 85 90 95

Glu Ile Ala Ile His Asn Pro Glu Gly Phe Ala Glu Ile Ala Asn Gln
 100 105 110
 Ala Lys Lys Ala Leu Glu Ala Thr Val
 115 120

<210>1067

<211>339

<212>PRT

<213>Chlamydia pneumoniae

<400>1067

Met Glu Met Lys Glu Glu Ile Glu Ala Val Lys Gln Gln Phe His Ser
 1 5 10 15
 Glu Leu Asp Gln Val Asn Ser Ser Gln Ala Leu Ala Asp Leu Lys Val
 20 25 30
 Arg Tyr Leu Gly Lys Lys Gly Ile Phe Arg Ser Phe Ser Glu Lys Leu
 35 40 45
 Lys Gln Cys Thr Asp Lys Ala Lys Leu Gly Ser Leu Ile Asn Asp Phe
 50 55 60
 Lys Thr Tyr Val Glu Asp Leu Leu Gln Glu Lys Ser Leu Val Leu Leu
 65 70 75 80
 Ala Ser Glu Gln Ala Glu Ala Phe Ser Lys Glu Lys Ile Asp Ser Ser
 85 90 95
 Leu Pro Gly Asp Ser Gln Pro Ser Gly Arg His Ile Leu Lys Ser
 100 105 110
 Ile Leu Asp Asp Val Val Asp Ile Phe Val His Leu Gly Phe Cys Val
 115 120 125
 Arg Glu Ala Pro Asn Ile Glu Ser Glu Ala Asn Asn Phe Thr Leu Leu
 130 135 140
 Asn Phe Thr Glu Asp His Pro Ala Arg Gln Met His Asp Thr Phe Tyr
 145 150 155 160
 Leu Asn Ala Thr Thr Val Leu Arg Thr His Thr Ser Asn Val Gln Ala
 165 170 175
 Arg Glu Leu Lys Lys Gln Gln Pro Pro Ile Lys Val Val Ala Pro Gly
 180 185 190
 Leu Cys Phe Arg Asn Glu Asp Ile Ser Ala Arg Ser His Val Leu Phe
 195 200 205
 His Gln Val Glu Ala Phe Tyr Val Asp His Asn Val Thr Phe Ser Asp
 210 215 220
 Leu Thr Ala Ile Leu Ser Ala Phe Tyr His Ser Phe Phe Gln Arg Lys
 225 230 235 240
 Thr Glu Leu Arg Phe Arg His Ser Tyr Phe Pro Phe Val Glu Pro Gly
 245 250 255
 Ile Glu Val Asp Val Ser Cys Glu Cys Cys Gly Lys Gly Cys Ala Leu
 260 265 270
 Cys Lys His Thr Gly Trp Leu Glu Val Ala Gly Ala Gly Met Ile His
 275 280 285
 Pro Gln Val Leu Arg Asn Gly Asn Val Asp Pro Glu Ile Tyr Ser Gly
 290 295 300
 Tyr Ala Val Gly Met Gly Ile Glu Arg Leu Ala Met Leu Lys Tyr Gly
 305 310 315 320
 Val Ser Asp Ile Arg Leu Phe Ser Glu Asn Asp Leu Arg Phe Leu Gln
 325 330 335
 Gln Phe Ser

<210>1068

<211>690

<212>PRT

<213>Chlamydia pneumoniae

<400>1068

Leu Phe Trp Phe His Arg Gly Gly Arg Met Lys Arg Ser Arg Arg Asn
 1 5 10 15
 Phe Glu Gln Ala Leu Glu Asn Leu Glu Lys Leu Lys Glu Ile Ser Leu
 20 25 30
 Ala Thr Ser Asn Asp Ser Tyr Leu Asn Asn Pro Ala Arg Phe Asn Gln
 35 40 45

Arg Lys Gln Thr Gly Ser Ser Val Met Glu Met Lys Glu Ala Leu Lys
 50 55 60
 Asn Val Glu Asn Tyr Leu Leu Glu Ile Ser Cys Val Ser Lys Ser His
 65 70 75 80
 Ala Asp Lys Ala Leu Lys Glu Ser Asp Phe Leu Ile Ala Gly Val Gln
 85 90 95
 Asn Val Phe Ser Phe Leu Glu Asn Gln Glu Asp Leu Tyr Lys Ser Leu
 100 105 110
 Leu Asp Glu Tyr Ser Glu Val Thr Lys Ala Tyr Asp Glu Val Lys Lys
 115 120 125
 Asn Leu Lys Glu Val Pro Thr Tyr Asp Leu Ser Thr Asp Glu Glu Thr
 130 135 140
 Glu Glu His Lys Glu Pro Glu Cys Phe Leu Asn Asn Leu Val Glu Val
 145 150 155 160
 Lys Arg Asp Arg Ser Tyr Glu Leu Phe Tyr Met Leu Asp Glu Gln Asp
 165 170 175
 Lys Arg Phe Tyr Asn Asp Ala Leu Val Gln Ile Ile Tyr Lys Gln Asn
 180 185 190
 Lys Leu His Glu Thr Val Asn Glu Gly Asp Pro Leu Thr Lys Thr Leu
 195 200 205
 Leu Trp Asn Ser Glu Glu Val Lys Asn Ile Ala Ser Ser Leu Val Ile
 210 215 220
 Val Asn Asp Met Pro Leu Arg Leu Phe Tyr Gln Arg Ala Leu Ser His
 225 230 235 240
 Leu Asp Ile Glu Ala Val Val Lys Val His Asn Ala Val Met Ala Leu
 245 250 255
 Phe Phe Ser Arg Tyr Glu Ala Thr Met Val Phe Lys Ser Pro Lys Lys
 260 265 270
 His Asn Ile Trp Tyr Phe Asn Asp Phe Leu Leu Phe Leu Arg Glu Ala
 275 280 285
 Trp Lys Asp Leu Asn Asn Asn Val Ile Asp Ser Gln Glu Arg Lys Gln
 290 295 300
 Thr Lys Leu Leu Ala Ser Ala Leu Ser Leu Gly Ile Phe Glu Ser Lys
 305 310 315 320
 Leu Val Phe Glu Glu Ala Ser Arg Tyr Leu Tyr Phe Asn Ile Gln Thr
 325 330 335
 Lys Leu Glu Asn Ala Asn Gly Lys Lys Pro Leu Ser Pro Gly Gln Tyr
 340 345 350
 Leu Thr Asp Ala Tyr Glu Glu Leu His Arg Leu Ile Ser Lys Tyr Pro
 355 360 365
 Asn Gly Pro Leu Phe Lys Ala Met Asp Arg Val Leu Glu His Glu Ser
 370 375 380
 Arg Pro Tyr Asp Pro Met Ile Leu Gly Ile Leu Pro Ser Leu Glu Gly
 385 390 395 400
 Thr Leu Lys Leu His Gly Lys Ser Ile Asp Ile Ile Arg Ser Pro Ser
 405 410 415
 Pro Val Thr Gln Ser Ser Ile Leu Tyr Ala Asn Cys Asn Glu Glu Phe
 420 425 430
 Leu Gly Phe Leu Asn Ala Lys Ala His Arg Ser Glu Val Thr Leu Val
 435 440 445
 Leu Asn Ile Gln Asn Arg Ile Ser Arg Lys Glu Arg Ala Arg Ser Arg
 450 455 460
 Val Ile Glu Glu Ala Leu Glu Gln Glu Glu His Ala Pro Tyr Val His
 465 470 475 480
 Ala Phe Ser Phe Pro Glu Pro Glu Glu Leu Leu Gln Asn Leu Glu Ser
 485 490 495
 Ile His Gly Asp Ile Glu Thr Phe Ala Asp Phe Phe Ser Ile Leu Gln
 500 505 510
 Glu Glu Phe His Lys Pro Leu Leu Ala Ser Ser Phe Phe Leu Thr Lys
 515 520 525
 Glu Leu Lys Glu Phe Val Gly Ser Phe Leu Lys Glu Lys Leu Thr Ala
 530 535 540
 Leu Lys Asp Ile Phe Phe Ala Lys Lys Lys Ile Leu Phe Arg Asn Asp
 545 550 555 560

Lys Leu Leu Leu Leu His Leu Leu Ser Tyr Leu Ile Val Phe Lys Leu
 565 570 575
 Ile Glu Arg Thr Asn Pro Asn Ser Ile Val Val Val Ser Lys Asp Gly
 580 585 590
 Leu Asp Tyr Val Ser Val Phe Ile Ala Gly Phe Ala Phe Phe Ser Arg
 595 600 605
 Glu Ala Phe Trp Asp Glu His Ser Leu Lys Leu Leu Thr Asn Val
 610 615 620
 Leu Ser Pro Thr Leu Val Ala Arg Asp Arg Leu Val Phe Val Ser His
 625 630 635 640
 Ile Glu Leu Leu Ser Lys Phe Val Asn Cys Leu Lys Lys Asn Arg Gln
 645 650 655
 Gly Phe Ser Ser Leu Lys Ser Phe Phe Lys Asp Asp Ile Glu Gly Trp
 660 665 670
 Glu Phe Thr Gly Tyr Leu His Glu Leu Thr Glu Val Ser His Lys His
 675 680 685
 Asn Leu
 690

<210>1069

<211>367

<212>PRT

<213>Chlamydia pneumoniae

<400>1069

Arg Met Leu Ile Trp Lys Arg His Leu Leu Thr Arg Phe Trp Phe Ala
 1 5 10 15
 Leu Thr Ser Leu Leu Val Leu Ala Leu Ile Phe Tyr Ala Ser Ile His
 20 25 30
 His Ser Leu His Thr Leu Lys Gly Ala Ser Thr Ala Ala Ser Gly Ala
 35 40 45
 Ser Val Lys Leu Ser Ile Leu Tyr Tyr Leu Ala Gln Ile Ser Leu Lys
 50 55 60
 Ala Glu Phe Leu Met Pro Gln Leu Val Ala Val Ala Thr Thr Ser Thr
 65 70 75 80
 Leu Phe Ala Met Gln Asn Lys Arg Glu Ile Ile Leu Leu Gln Ala Ser
 85 90 95
 Gly Leu Ser Leu Lys Ser Leu Met His Pro Leu Leu Leu Ser Gly Ala
 100 105 110
 Val Ile Met Met Val Leu Tyr Ala Asn Phe Gln Trp Leu His Pro Ile
 115 120 125
 Cys Glu Lys Ile Ser Ile Thr Lys Glu Asn Met Asp Arg Gly Thr Thr
 130 135 140
 Asp Lys Glu Gln Gly Lys Ile Pro Ala Leu Tyr Leu Lys Asp Gln Thr
 145 150 155 160
 Val Leu Leu Tyr Ser Ser Ile Glu Pro Lys Thr Leu Thr Leu Asn Asn
 165 170 175
 Val Phe Trp Ile Lys Asp Pro Lys Thr Ile Tyr Thr Met Glu Lys Leu
 180 185 190
 Ala Phe Thr Thr Leu Ser Leu Pro Ile Gly Leu Asn Val Thr Gln Phe
 195 200 205
 Phe Ala Asn Asp Ser Glu Asn Leu Glu Leu Lys Glu Phe Phe Asp Met
 210 215 220
 Lys Glu Phe Pro Glu Ile Glu Phe Asn Phe Tyr Glu Asn Pro Phe Ser
 225 230 235 240
 Lys Leu Phe Ser Ala Gly Asn Lys Asn Arg Leu Ser Glu Phe Phe Lys
 245 250 255
 Ala Ile Pro Trp Asn Ala Thr Gly Leu Gly Leu Ser Thr Gln Val Pro
 260 265 270
 Gln Arg Ile Leu Ser Leu Leu Ala Gln Phe Tyr Tyr Val Leu Ile Ser
 275 280 285
 Pro Leu Ala Cys Met Ala Ala Ile Ile Leu Ser Ala Tyr Leu Cys Leu
 290 295 300
 Arg Phe Ser Arg Thr Pro Thr Val Thr Leu Ala Tyr Leu Ile Pro Leu
 305 310 315 320
 Gly Thr Val Asn Ile Phe Phe Val Phe Leu Lys Ala Gly Ile Val Leu

325 330 335
 Ala Ser Ser Ser Val Leu Pro Thr Leu Pro Val Met Ala Phe Pro Leu
 340 345 350
 Ile Val Leu Phe Leu Leu Thr Asn Tyr Ala Tyr Ala Lys Leu Gln
 355 360 365
 <210>1070
 <211>358
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>1070
 Ala Met Pro Ile Leu Trp Lys Val Leu Ile Phe Arg Tyr Leu Lys Thr
 1 5 10 15
 Ala Ala Phe Cys Thr Leu Ser Leu Ile Cys Ile Ser Ile Ile Ser Ser
 20 25 30
 Leu Gln Glu Ile Val Ala Tyr Ile Ala Lys Asp Val Pro Tyr Asp Thr
 35 40 45
 Val Leu Arg Leu Met Ala Tyr Gln Ile Pro Tyr Leu Leu Pro Phe Ile
 50 55 60
 Leu Pro Gly Ser Cys Phe Val Ser Ala Phe Ser Leu Phe Arg Lys Leu
 65 70 75 80
 Ser Asp Asn Asn His Met Thr Phe Leu Arg Ala Ser Gly Ala Ser Gln
 85 90 95
 Ser Ile Ile Met Phe Pro Val Leu Met Val Ser Gly Ala Ile Cys Cys
 100 105 110
 Leu Asn Phe Tyr Thr Cys Ser Glu Leu Ala Ser Ile Cys Arg Tyr Gln
 115 120 125
 Thr Cys Lys Glu Ile Ala Asn Met Ala Met Thr Ser Pro Ala Leu Leu
 130 135 140
 Leu Gln Thr Leu Gln Lys Lys Glu Asn Asn Arg Ile Phe Ile Ala Val
 145 150 155 160
 Asp His Cys Ala Lys Ser Lys Phe Asp Asn Val Ile Val Ala Leu Lys
 165 170 175
 Gly Asn Asn Glu Ile Ser His Val Gly Ile Ile Lys Ser Ile Ile Pro
 180 185 190
 Asp Thr Thr Lys Asp Thr Val Lys Ala Lys Asp Val Val Phe Ile Ser
 195 200 205
 Lys Leu Pro Asp Ser Leu Thr Glu Ser Ser Ser Pro Ser Ser Gln Arg
 210 215 220
 Phe Tyr Ile Glu Thr Leu Asp Glu Leu Leu Ile Pro Lys Ile Thr Ser
 225 230 235 240
 Thr Leu Phe Ala Gly Lys Ser Tyr Leu Lys Thr Arg Thr Asp Tyr Leu
 245 250 255
 Pro Trp Lys Gln Leu Val Lys Gln Ser Leu Lys His Ser His Leu Pro
 260 265 270
 Glu Thr Leu Arg Arg Val Ala Ile Gly Phe Leu Cys Ile Thr Leu Thr
 275 280 285
 Tyr Ala Gly Met Ile Leu Gly Ile His Lys Pro Arg Phe Arg Lys Ser
 290 295 300
 Ile Ala Leu Tyr Phe Ile Phe Pro Ile Leu Asp Leu Ile Leu Leu Ile
 305 310 315 320
 Val Gly Lys Asn Thr Lys Asn Leu Pro Leu Ala Phe Met Leu Phe Val
 325 330 335
 Phe Pro Gln Leu Val Ser Trp Val Val Phe Ala Ala Arg Ala Tyr Arg
 340 345 350
 Glu Ser Arg Gly Tyr Ala
 355

<210>1071
 <211>319
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>1071
 Met Val Leu Ser Ser Asp Leu Leu Arg Asp Asp Lys Gln Leu Asp Leu
 1 5 10 15
 Phe Phe Ala Ser Leu Asp Val Lys Lys Arg Tyr Leu Leu Ala Leu Ser

20 25 30
 Gly Gly Ser Asp Ser Leu Phe Leu Phe Tyr Leu Leu Lys Glu Arg Gly
 35 40 45
 Val Ser Phe Thr Ala Val His Ile Asp His Gly Trp Arg Ser Thr Ser
 50 55 60
 Ala Gln Glu Ala Lys Glu Leu Glu Glu Leu Cys Ala Arg Glu Gly Val
 65 70 75 80
 Pro Phe Val Leu Tyr Thr Leu Thr Ala Glu Glu Gln Gly Asp Lys Asp
 85 90 95
 Leu Glu Asn Gln Ala Arg Lys Lys Arg Tyr Ala Phe Leu Tyr Glu Ser
 100 105 110
 Tyr Arg Gln Leu Asp Ala Gly Gly Ile Phe Leu Ala His His Ala Asn
 115 120 125
 Asp Gln Ala Glu Thr Val Leu Lys Arg Leu Leu Glu Ser Ala His Leu
 130 135 140
 Thr Asn Leu Lys Ala Met Ala Glu Arg Ser Tyr Val Glu Asp Val Leu
 145 150 155 160
 Leu Leu Arg Pro Leu Leu His Ile Pro Lys Ser Ser Leu Lys Glu Ala
 165 170 175
 Leu Asp Ala Arg Gly Ile Ser Tyr Leu Gln Asp Pro Ser Asn Glu Asp
 180 185 190
 Glu Arg Tyr Leu Arg Ala Arg Met Arg Lys Lys Leu Phe Pro Trp Leu
 195 200 205
 Glu Glu Val Phe Gly Lys Asn Ile Thr Phe Pro Leu Leu Thr Leu Gly
 210 215 220
 Glu Glu Ser Ala Glu Leu Ser Glu Tyr Leu Glu Lys Gln Ala Gln Pro
 225 230 235 240
 Phe Phe Ser Ala Ala Thr His Gln Asp Ser Gln Gly Glu Leu Pro Cys
 245 250 255
 Pro Asp Cys Leu Ile Gln Gln Ala Phe Leu Cys Lys Trp Val Met Lys
 260 265 270
 Lys Phe Phe Asn Asn Ala Gly Ile Ala Val Ser Arg His Phe Leu Gln
 275 280 285
 Met Val Tyr Asp His Leu Ser Arg Ser Ser Cys Ala Thr Leu Arg Met
 290 295 300
 Arg Asn Lys Ile Val Ile Ile Lys Pro Gly Val Val Val Ile Asp
 305 310 315

<210>1072

<211>918

<212>PRT

<213>Chlamydia pneumoniae

<400>1072

Leu Ile Ser Leu Val Val Lys Phe Met Ser Lys Asp Lys Lys Met Lys
 1 5 10 15
 Pro Glu Pro Lys Lys Asn Phe Pro Thr Val Phe Phe Phe Leu Leu Phe
 20 25 30
 Gly Val Val Phe Gly Val Val Ala Phe Gln Asn Phe Leu Ala Gly Lys
 35 40 45
 Lys Ala Arg Val Gly Phe Ser His Gln Ile Glu His Leu Val Asn Leu
 50 55 60
 Arg Leu Ile Val Pro Glu Asp Ser His Lys Ile Ala Leu Asn Asp Asn
 65 70 75 80
 Leu Val Ser Phe Gly Gly Arg Phe Arg Asp Val Gln Thr Gln Glu Gly
 85 90 95
 Gln Leu Arg Tyr His Tyr Leu Glu Leu Ile Asp Gln Gly His Arg Leu
 100 105 110
 Asp Leu Asp Leu Gln Glu Thr Ser Lys Ser Leu Thr Thr Leu Gly Lys
 115 120 125
 Glu Val Thr Asn Ser Ile Leu Trp Phe Ser Ala Ile Ser Gly Ser Pro
 130 135 140
 Ile Pro Glu Gln Gly Tyr Ala Ile Ser Tyr Pro Ser Glu Val Ser Gly
 145 150 155 160
 Ser Val Leu Thr Glu Pro Leu Val Val Thr Gly Pro Ala Thr Pro Gln
 165 170 175

Leu Ile Asn Leu His Ser Leu Gln Glu Arg Tyr Pro Leu Ser Arg
 180 185 190
 Ser Pro Glu Ala Leu Arg Thr Tyr Gly Ser Asp Leu Tyr Glu Leu Ile
 195 200 205
 Gly Lys Tyr Leu Ser Pro Val Leu Gly Ile Gly Ser Glu Thr Leu Lys
 210 215 220
 Arg Glu Leu Lys Asp Leu Tyr Gln Gln Val Glu Val Ser Leu Thr Gln
 225 230 235 240
 Glu Thr Asp Thr Glu Ala Ala Tyr Thr Leu Tyr Gly Gln Val Leu Ser
 245 250 255
 Thr Leu Asn Arg Ile Ser Ser Ser Leu Val Val Ser Glu Gly Gly Glu
 260 265 270
 Arg Phe Ser Gln Leu Arg Ser Val Arg Leu Tyr Arg Glu Trp Asn
 275 280 285
 Lys Tyr His Lys Leu Val Glu Ala Arg Asp Leu Asn Gln Ala Gln Leu
 290 295 300
 Glu Lys Leu Arg Gly Glu Leu Ser Gln Thr Val Trp Tyr Phe Asn Asn
 305 310 315 320
 Gln Glu Leu Ser Ser Arg Ser Leu Glu Lys Gln Asp Pro Glu Val Phe
 325 330 335
 Gly His Trp Phe Ala Gly Ala Lys Glu Glu Trp Thr Ala Phe Lys Phe
 340 345 350
 Asn His Ser Leu Ser Phe Lys Ala Pro Asp Gln Pro Arg Asn Leu Val
 355 360 365
 Leu Glu Lys Thr Phe Lys Ser Gln Glu Pro Ser Pro His Xaa Leu Gly
 370 375 380
 Tyr Leu Phe Thr Xaa Leu Pro Ile Ile Leu Val Leu Leu Phe Val Tyr
 385 390 395 400
 Leu Val Phe Ser Arg Gln Met Arg Gly Met Ser Gly Ser Ala Met Ser
 405 410 415
 Phe Gly Lys Ser Pro Ala Arg Met Leu Lys Gly Gln Asn Lys Val
 420 425 430
 Thr Phe Ala Asp Val Ala Gly Ile Glu Glu Ala Lys Glu Glu Leu Ile
 435 440 445
 Glu Ile Val Asp Phe Leu Lys Asn Pro Asn Lys Phe Thr Ser Leu Gly
 450 455 460
 Gly Arg Ile Pro Lys Gly Val Leu Leu Ile Gly Pro Pro Gly Thr Gly
 465 470 475 480
 Lys Thr Leu Ile Ala Lys Ala Val Ser Gly Glu Ala Asp Arg Pro Phe
 485 490 495
 Phe Ser Ile Ala Gly Ser Asp Phe Val Glu Met Phe Val Gly Val Gly
 500 505 510
 Ala Ser Arg Ile Arg Asp Met Phe Glu Gln Ala Lys Arg Asn Ala Pro
 515 520 525
 Cys Ile Ile Phe Ile Asp Glu Ile Asp Ala Val Gly Arg His Arg Gly
 530 535 540
 Ala Gly Ile Gly Gly Gly His Asp Glu Arg Glu Gln Thr Leu Asn Gln
 545 550 555 560
 Leu Leu Val Glu Met Asp Gly Phe Gly Thr Asn Glu Gly Val Ile Leu
 565 570 575
 Met Ala Ala Thr Asn Arg Pro Asp Val Leu Asp Lys Ala Leu Leu Arg
 580 585 590
 Pro Gly Arg Phe Asp Arg Arg Val Val Met Asn Leu Pro Asp Ile Lys
 595 600 605
 Gly Arg Phe Glu Ile Leu Met Val His Ala Lys Arg Ile Lys Leu Asp
 610 615 620
 Pro Thr Val Asp Leu Met Ala Val Ala Arg Ser Thr Pro Gly Ala Ser
 625 630 635 640
 Gly Ala Asp Leu Glu Asn Leu Leu Asn Glu Ala Ala Leu Leu Ala Ala
 645 650 655
 Arg Lys Asp Arg Thr Ala Val Thr Ala Val Asp Val Ala Glu Ala Arg
 660 665 670
 Asp Lys Val Leu Tyr Gly Lys Glu Arg Arg Ser Leu Glu Met Asp Ala
 675 680 685

Glu Glu Arg Lys Thr Thr Ala Tyr His Glu Ser Gly His Ala Val Val
 690 695 700
 Gly Leu Cys Val Gln His Gly Asp Pro Val Asp Lys Val Thr Ile Ile
 705 710 715 720
 Pro Arg Gly Leu Ser Leu Gly Ala Thr His Phe Leu Pro Glu Lys Asn
 725 730 735
 Lys Leu Ser Tyr Trp Lys Lys Glu Leu Tyr Asp Gln Leu Ala Val Leu
 740 745 750
 Met Gly Gly Arg Ala Ala Glu Glu Ile Phe Leu Gly Asp Ile Ser Ser
 755 760 765
 Gly Ala Gln Gln Asp Ile Ser Gln Ala Thr Lys Leu Val Arg Ser Met
 770 775 780
 Val Cys Glu Trp Gly Met Ser Pro Gln Leu Gly Asn Val Thr Tyr Asp
 785 790 795 800
 Glu Arg Ser Asp Gly Leu Thr Gly Tyr Gly Gly Tyr His Glu Lys Ser
 805 810 815
 Tyr Ser Glu Glu Thr Ala Lys Thr Ile Asp Thr Glu Leu Arg Met Leu
 820 825 830
 Leu Asp Ala Ala Tyr Gln Arg Ala Leu Asp Ile Ile Asn Glu His Lys
 835 840 845
 Ala Glu Ile Glu Leu Met Thr Gln Met Leu Ile Glu Phe Glu Thr Leu
 850 855 860
 Asp Ser Lys Asp Val Lys Glu Ile Met Asp His Thr Trp Asp Pro Glu
 865 870 875 880
 Lys Lys Arg Ala Arg Leu Lys Glu Glu Gly Met Leu Phe Lys Lys Ser
 885 890 895
 Ser Asp Asp Leu Pro Pro Pro Pro Pro Lys Glu Asp Thr Leu Pro Gly
 900 905 910
 Leu Gly Phe Asn Ala Thr
 915

<210>1073

<211>568

<212>PRT

<213>Chlamydia pneumoniae

<400>1073

Ser Ser Cys Tyr Leu Arg Xaa Ser Ala Ala Leu Ala Ile Ser Asp Ile
 1 5 10 15
 Pro Gln Ser Asn Ile Val Ala Gly Val Arg Ile Gly Cys Ile Asp Asn
 20 25 30
 Gln Trp Val Ile Asn Pro Thr Lys Thr Glu Leu Ala Ser Ser Thr Leu
 35 40 45
 Asp Leu Val Leu Ala Gly Thr Glu Asn Ala Ile Leu Met Ile Glu Gly
 50 55 60
 His Cys Asp Phe Phe Thr Glu Glu Gln Val Leu Asp Ala Ile Glu Phe
 65 70 75 80
 Gly His Lys His Ile Val Thr Ile Cys Lys Arg Leu Gln Leu Trp Gln
 85 90 95
 Glu Glu Val Gly Lys Ser Lys Asn Leu Ser Ala Val Tyr Pro Leu Pro
 100 105 110
 Ala Glu Val Leu Thr Ala Val Lys Glu Cys Ala Gln Asp Lys Phe Thr
 115 120 125
 Glu Leu Phe Asn Ile Lys Asp Lys Lys Val His Ala Ala Thr Ala His
 130 135 140
 Glu Ile Glu Glu Asn Ile Leu Glu Lys Leu Gln Arg Glu Asp Asp Asp
 145 150 155 160
 Leu Phe Ser Ser Phe Asn Ile Lys Ala Ala Cys Lys Thr Leu Lys Ser
 165 170 175
 Asp Thr Met Arg Ala Leu Ile Arg Asp Arg Glu Ile Arg Ala Asp Gly
 180 185 190
 Arg Ser Leu Thr Thr Val Arg Pro Ile Thr Ile Glu Thr Ser Tyr Leu
 195 200 205
 Pro Arg Thr His Gly Ser Cys Leu Phe Thr Arg Gly Glu Thr Gln Thr
 210 215 220
 Leu Ala Val Cys Thr Leu Gly Ser Glu Ala Met Ala Gln Arg Tyr Glu

<210>1075

<211>163

<212>PRT

<213>Chlamydia pneumoniae

<400>1075

Leu Gly Gly Glu Lys Leu Ile Asn Met Glu Lys Asp Ile Phe Phe Met
 1 5 10 15
 Gln Gln Ala Phe Lys Glu Ala Arg Lys Ala Tyr Asp Gln Asp Glu Val
 20 25 30
 Pro Val Gly Cys Val Ile Val Lys Asp Asp Lys Ile Ile Ala Arg Ala
 35 40 45
 His Asn Ser Val Glu Lys Leu Lys Asp Ala Thr Ala His Ala Glu Ile
 50 55 60
 Leu Cys Ile Gly Ser Ala Ala Gln Asp Leu Asp Asn Trp Arg Leu Leu
 65 70 75 80
 Asp Thr Val Leu Tyr Cys Thr Leu Glu Pro Cys Leu Met Cys Ala Gly
 85 90 95
 Ala Ile Gln Leu Ala Arg Ile Pro Arg Ile Val Trp Ala Ala Pro Asp
 100 105 110
 Val Arg Leu Gly Ala Gly Gly Ser Trp Val Asn Ile Phe Thr Glu Glu
 115 120 125
 His Pro Phe His Thr Val Ser Cys Thr Gly Gly Val Cys Ser Glu Glu
 130 135 140
 Ala Glu His Leu Met Lys Lys Phe Phe Val Glu Lys Arg Arg Glu Lys
 145 150 155 160
 Ser Glu Lys

<210>1076

<211>100

<212>PRT

<213>Chlamydia pneumoniae

<400>1076

Lys Ser Ala Glu Arg Lys Val Lys Asn Lys Ile Val Thr Leu Leu Asp
 1 5 10 15
 Gln Leu Tyr Glu Asp Gln Glu Ser Arg Leu Gln Lys Leu Gly Glu Glu
 20 25 30
 Ile Val Pro Asn Leu Thr Pro Glu Asp Leu Leu Gln Pro Met Asp Phe
 35 40 45
 Xaa Gln Leu Glu Gly Asn Pro Ala Phe Arg Phe Glu Glu Gly Val Leu
 50 55 60
 Ser Gly Ile Gly Glu Val Arg Ala Ala Ile Phe Asn Gly Ala Leu Ser
 65 70 75 80
 Arg Glu Leu Glu Ser Gln Arg Ser Ser Ile Gly Val Gly Asp Leu Phe
 85 90 95
 Phe Phe Thr Lys
 100

<210>1077

<211>180

<212>PRT

<213>Chlamydia pneumoniae

<400>1077

His Leu Ser Ile Glu Glu Leu Met Ser Ile Gln Pro Val Ser Asn Thr
 1 5 10 15
 Thr Thr Lys Ala Asp Lys Val Ile Pro Asp Ser Thr Lys Val Ile Ser
 20 25 30
 Asp Ser Ile Thr Ile Asn Lys Gln Ser Ala Phe Tyr Phe Cys Ile Ser
 35 40 45
 Val Met Leu Arg Leu Ser Glu Ser Thr Thr Glu Tyr Gly Lys Ser Ile
 50 55 60
 Leu Ala Val Leu Glu Asp Asn Thr Ile Val Gln Gln Arg Val Lys
 65 70 75 80
 Glu Leu Ile Asn Leu Pro Leu Leu Lys Val Pro Asp Leu Gln Lys Lys
 85 90 95
 Asp Gly Ser Asp Asp Glu Tyr Lys Asn Gln Asn Glu Ile Gln Ala Tyr

100 105 110
 Gln Ser Ser Asn Gln Gln Ile Ser Ala Asn Arg Gln Met Ile Gln Gln
 115 120 125
 Glu Leu Ser Ser Ala Gln Gln Arg Ala Gln Ala Asn Gln Lys Ser Val
 130 135 140
 Asn Ser Thr Thr Ile Glu Ser Met Gln Ile Leu Gln Ala Thr Ser Ser
 145 150 155 160
 Met Leu Ser Thr Leu Lys Glu Leu Thr Ile Lys Ala Asn Leu Thr Asn
 165 170 175
 Ser Pro Ser Asp
 180

<210>1078

<211>181

<212>PRT

<213>Chlamydia pneumoniae

<400>1078

Asn Arg Lys Pro Val Arg Leu Asn Met Trp Ile Ile Asp Pro Leu Ser
 1 5 10 15
 Ala Lys Xaa Pro Leu Gln Ala Ala Ile Asn Val Pro Gly Thr Pro Ile
 20 25 30
 Thr Gly Gly Pro Asn Thr Ala Thr Ala Asp Asp Ile Ile Ala Lys Phe
 35 40 45
 Ser Lys Asp Ser Asn Pro Leu Ile Val Thr Val Tyr Tyr Val Tyr Gln
 50 55 60
 Ser Val Leu Val Ala Gln Asp Asn Leu Ser Ile Ile Ala Gln Glu Leu
 65 70 75 80
 Gln Ala Asn Ser Ser Ala Gln Thr Tyr Leu Asn Asn Gln Glu Ala Leu
 85 90 95
 Tyr Gln Tyr Val Ser Ile Pro Lys Asn Lys Leu Asn Asp Asn Ser Ser
 100 105 110
 Ser Tyr Leu Gln Asn Ile Gln Ser Asp Asn Gln Ala Ile Gly Ala Ser
 115 120 125
 Arg Gln Ala Ile Gln Asn Gln Ile Ser Ser Leu Gly Asn Ala Ala Gln
 130 135 140
 Val Ile Ser Ser Asn Leu Asn Thr Asn Asn Asn Ile Ile Gln Gln Ser
 145 150 155 160
 Leu Gln Val Gly Gln Ala Leu Ile Gln Thr Phe Ser Gln Ile Val Ser
 165 170 175
 Leu Ile Ala Asn Ile
 180

<210>1079

<211>168

<212>PRT

<213>Chlamydia pneumoniae

<400>1079

Thr Lys Val Asn Phe Phe Ile Met Ser Ile Thr Thr Leu Gly Thr Leu
 1 5 10 15
 Pro Thr Val Asn Thr Ile Asn Ser Ser Arg Pro Pro Leu Glu Pro Leu
 20 25 30
 Asn Thr Pro Lys Ile Gly Ala Val Leu Phe Ser Ile Tyr Glu Leu Leu
 35 40 45
 Leu Gln Ala Ile Glu Ile Arg Gln Gln Thr Val Leu Thr Gln Ser Gln
 50 55 60
 Gln Leu Asn Asp Asn Thr Asn Ile Gln Gln Gln Leu Asn Gln Glu Thr
 65 70 75 80
 Asn Gln Ile Lys Tyr Ala Ile Val Ser Ala Gly Ala Lys Glu Asp Glu
 85 90 95
 Ile Thr Arg Val Gln Asn Gln Asn Gln Asn Tyr Ser Ala Gln Arg Ser
 100 105 110
 Asn Ile Gln Asp Glu Leu Val Thr Arg Gln Asn Gly Gln Ile Ile
 115 120 125
 Leu Ser His Ala Ser Thr Asn Ile Asn Ile Ile Gln Gln Gln Ser Ser
 130 135 140
 Gln Asp Ser Ser Phe Ile Lys Thr Thr Asn Ser Ile Gly Ser Thr Val

145 150 155 160
 Asn Gln Leu Asn Lys Pro Leu Gly
 165
 <210>1080
 <211>440
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>1080
 Val Leu Asn Tyr Ser Phe Ile Gly Met Leu Lys Pro Met Tyr Val Leu
 1 5 10 15
 Ser Lys Arg Leu Tyr Arg Trp Val Asn Gln Leu Ile Lys Leu Gly Asp
 20 25 30
 Leu Val Lys Asn Ser Arg Ser Phe Ser Val Glu Trp Val Phe Ile Ser
 35 40 45
 Ala Leu Leu Leu Ile Phe Gly Cys Leu Gly Cys Ala Ser Val Val Lys
 50 55 60
 Val Ser Leu Val Pro Phe Leu Leu Leu Phe Ser Phe Leu Ala Phe Pro
 65 70 75 80
 Leu Ile Leu Cys Phe Arg Gly Lys Gly Tyr Ala Leu Leu Leu Gly Val
 85 90 95
 Phe Val Thr Leu Tyr Val Ala Lys Tyr Val Val Gly Glu Thr Leu Tyr
 100 105 110
 Val Ser Phe Trp Leu Ser Gly Leu Gly Val Ser Phe Leu Leu Ala Phe
 115 120 125
 Gly Leu Phe Leu Gln Gly Val Trp Leu Ala Gln Glu Glu Glu Met Val
 130 135 140
 Lys Gly Lys Glu Gln Leu Arg Leu Ser Glu Asp Leu Asp Ala Gln Arg
 145 150 155 160
 Ser Ala Tyr Glu Asp Leu Leu Leu Thr Lys Ser Gln Glu Lys Glu Phe
 165 170 175
 Leu Asp Ala Arg Ala Gln Gly Leu Asp Arg Glu Leu Thr Glu Cys Gln
 180 185 190
 Glu Leu Leu Lys Ala Ala Tyr Gln Lys Gln Glu Tyr Leu Thr Ile Asp
 195 200 205
 Leu Lys Ile Leu Ala Asp Gln Lys Asn Ser Trp Leu Glu Asp Tyr Ala
 210 215 220
 Glu Leu His Asn Lys Tyr Ile Glu Leu Val Ser Lys Asn Gly Asp Val
 225 230 235 240
 Val Phe Pro Trp Val Ala Glu Pro Ser Val Gly Glu Ser Gln Gly Ser
 245 250 255
 Glu Arg Val Asp Val Ser Arg Trp Val Ser Ala Leu Gln Glu Lys Glu
 260 265 270
 Glu Ser Leu Glu Arg Leu Arg Asn Glu Ile Leu Val Glu Lys Gln Arg
 275 280 285
 Cys Ser Asp Tyr Glu His Arg Cys Gln Glu Leu Gly Leu Leu Leu Gln
 290 295 300
 Asn Phe Thr Ala Leu Glu Arg Arg Cys Glu Glu Leu Gln Asn Leu Leu
 305 310 315 320
 Asn Gln Lys Glu Thr Gln Ile Asn Glu Leu His Gln Leu Val Cys Lys
 325 330 335
 Ser Glu Glu Lys Val Ser Val Glu Pro Ser Ala His Ala Glu Thr Ser
 340 345 350
 Cys Val Glu Glu Lys Gln Tyr Lys Gly Leu Tyr Ser Gln Leu Gln Glu
 355 360 365
 Gln Phe Leu Glu Lys Ser Glu Thr Leu Ser Leu Val Arg Lys Lys Leu
 370 375 380
 Phe Ala Val Gln Glu Lys Tyr Leu Thr Leu Lys Lys Lys Glu Glu Leu
 385 390 395 400
 Thr Lys Gln Asp Ile Ser Phe Asp Asp Ile Ser Met Ile Gln Gly Leu
 405 410 415
 Leu Glu Arg Ile Glu Ile Leu Glu Glu Glu Val Ser His Leu Glu Glu
 420 425 430
 Leu Val Ser Arg Ser Leu Ser Leu
 435 440

<210>1081

<211>294

<212>PRT

<213>Chlamydia pneumoniae

<400>1081

Val Ile Leu Met Lys Arg Asn Asp Pro Cys Trp Cys Gly Ser Gly Arg
1 5 10 15
Lys Trp Lys Gln Cys His Tyr Pro Gln Pro Pro Lys Met Ser Pro Glu
20 25 30
Ala Leu Lys Gln His Tyr Ala Ser Gln Tyr Asn Ile Leu Leu Lys Thr
35 40 45
Pro Glu Gln Lys Ala Lys Ile Tyr Asn Ala Cys Gln Ile Thr Ala Arg
50 55 60
Ile Leu Asp Glu Leu Cys Lys Ala Ser Gln Lys Gly Val Thr Thr Asn
65 70 75 80
Glu Leu Asp Glu Leu Ser Gln Glu Leu His Lys Lys Tyr Asp Ala Ile
85 90 95
Ala Ala Pro Phe His Tyr Gly Ser Pro Pro Phe Pro Lys Thr Ile Cys
100 105 110
Thr Ser Leu Asn Glu Val Ile Cys His Gly Ile Pro Asn Asp Ile Pro
115 120 125
Leu Lys Asp Gly Asp Ile Met Asn Ile Asp Val Ser Cys Ile Val Asp
130 135 140
Gly Tyr Tyr Gly Asp Cys Ser Arg Met Val Met Ile Gly Glu Val Pro
145 150 155 160
Glu Ile Lys Lys Lys Ile Cys Gln Ala Ala Leu Glu Cys Leu Asn Asp
165 170 175
Ser Ile Ala Ile Leu Lys Pro Gly Ile Pro Leu Cys Glu Ile Gly Glu
180 185 190
Ala Ile Glu Ala Arg Ala Asp Thr Tyr Gly Phe Ser Val Val Asp Gln
195 200 205
Phe Val Gly His Gly Val Gly Ile Glu Phe His Glu Asn Pro Tyr Val
210 215 220
Pro His Tyr Arg Asn Arg Ser Met Ile Pro Leu Ala Pro Gly Met Ile
225 230 235 240
Phe Thr Ile Glu Pro Met Ile Asn Val Gly Lys Lys Glu Gly Val Val
245 250 255
Asp Pro Lys Asn Gln Trp Glu Ala Arg Thr Cys Asp Asn Gln Pro Ser
260 265 270
Ala Gln Trp Glu His Thr Ile Ala Ile Thr Glu Thr Gly Tyr Glu Ile
275 280 285
Leu Thr Leu Leu Asn Asp
290

<210>1082

<211>202

<212>PRT

<213>Chlamydia pneumoniae

<400>1082

Met Leu Ile Leu Leu Asn Leu Ser Leu Leu Phe Tyr Val Leu Phe Asp
1 5 10 15
Ser Pro Gly Ser Ile Pro Val Phe Val Ala Leu Leu Lys Asn Phe Ser
20 25 30
Arg Lys Lys Gln Gln Arg Val Ile Leu Arg Glu Cys Leu Phe Ala Leu
35 40 45
Gly Ala Leu Ile Leu Phe Val Thr Phe Gly Arg Ser Phe Phe Gln Phe
50 55 60
Leu Asp Ile Ser Leu Tyr Ala Phe Gln Ile Ile Gly Gly Phe Leu Leu
65 70 75 80
Phe Thr Val Ser Ile Lys Met Met Leu Ala Pro Met Pro Glu Lys Ala
85 90 95
Lys Asp Asp Thr Ser Lys Thr Glu Pro Ile Phe Phe Pro Leu Ala Phe
100 105 110
Pro Val Ile Thr Gly Pro Ala Val Ile Thr Ala Leu Leu Ser Tyr Met
115 120 125

Glu Glu Gly Ile Tyr Ser Arg Glu Ile Ile Phe Thr Ala Met Ile Ile
 130 135 140
 Ala Trp Ala Phe Ser Leu Phe Thr Leu Leu Cys Ser Ser Phe Phe Asp
 145 150 155 160
 Arg Leu Ser Gly Asn Phe Gly Leu Leu Ala Leu Glu Arg Leu Phe Gly
 165 170 175
 Ile Ala Leu Leu Leu Met Ser Val Asn Leu Met Leu Lys Gly Ile Ser
 180 185 190
 Ile Ala Phe Asn Ile Gly Phe Tyr Ile Gly
 195 200

<210>1083

<211>251

<212>PRT

<213>Chlamydia pneumoniae

<400>1083

Thr Ser Arg Tyr Gly Pro Leu Pro Cys Ser Arg His His Glu Asp Leu
 1 5 10 15
 His Lys Arg His Ala Asn Thr Asn Arg Arg Glu Ile Asp Arg Gln Phe
 20 25 30
 Pro Ala Arg Phe Leu Tyr Arg Ser Gln Asp Pro Ile Tyr Lys Phe Glu
 35 40 45
 Asp Leu Asn Gly Lys Val Leu Gly Phe Cys Leu Asn Asn Ser Arg Asp
 50 55 60
 Leu Asn Arg Leu Leu Glu Thr Leu Asn Arg Asn Gly Val Val Pro Ser
 65 70 75 80
 Glu Val Lys Asn Val Ser Ser Asp Leu Ile Ser Pro Met Leu Leu Asn
 85 90 95
 Lys Ile Asp Phe Leu Tyr Gly Ala Phe Tyr Asn Ile Glu Gly Val Lys
 100 105 110
 Leu Gln Thr Leu Gly Met Pro Val Lys Cys Phe Leu Ser Asp Thr Cys
 115 120 125
 Asp Leu Pro Thr Gly Pro Gln Leu Ile Val Phe Thr Lys Lys Gly Thr
 130 135 140
 Lys Ala Ser Glu Pro Glu Ile Val Glu Ala Phe Gln Lys Ala Leu Gln
 145 150 155 160
 Glu Ser Ile Ile Phe Ser Lys Asp His Pro Glu Asp Ala Phe Lys Leu
 165 170 175
 Tyr Ala Lys Glu Thr Lys Ser Ile Pro Lys Asn Leu Tyr Gln Glu Tyr
 180 185 190
 Leu Gln Trp Glu Glu Thr Phe Pro Leu Leu Ala Gln Ser Gln Asp Pro
 195 200 205
 Leu Ser Lys Asp Leu Val Asp Lys Leu Leu Glu Thr Ile Ile Lys Arg
 210 215 220
 Tyr Pro Glu Leu Ala Ser Glu Val Ala Lys Phe Ser Leu Asn Asp Leu
 225 230 235 240
 Tyr Asn Pro Ser Leu Pro Glu Glu Gln Ser Val
 245 250

<210>1084

<211>303

<212>PRT

<213>Chlamydia pneumoniae

<400>1084

Arg Ser Pro Thr Thr Ser Phe His Pro Ala Thr Val His Ser Tyr Val
 1 5 10 15
 Cys Ser Gly Ser Thr Asp Cys Thr Leu Val Trp Leu Gly Asn Arg Cys
 20 25 30
 Cys Asn Arg Pro Tyr Ser Thr His Ile Leu Ser Ala His Pro Asp
 35 40 45
 Tyr Leu Ser Gly His Leu Ile Asn Thr Arg Arg Thr Tyr Arg Ala Ile
 50 55 60
 Arg Pro Leu Arg Ser Thr Lys Phe Gln Leu Leu Ile Lys Leu Arg Ile
 65 70 75 80
 Pro His Ala Leu Pro His Ile Phe Ser Gly Leu Lys Ile Ala Ile Gly
 85 90 95

Ser Ala Gly Phe Ala Ala Ile Ala Gly Glu Trp Val Ala Ser Gln Ser
100 105 110
Gly Leu Gly Ile Leu Met Leu Glu Ser Arg Arg Asn Tyr Glu Met Glu
115 120 125
Leu Ala Phe Ala Gly Leu Ala Thr Leu Ser Ile Leu Thr Leu Ser Leu
130 135 140
Phe Gln Ile Thr Leu Leu Ile Glu Lys Leu Ile Phe Ser Leu Phe Arg
145 150 155 160
Val Lys Arg Met Ser Leu Lys His Lys Ser Val Ala Lys Lys Ala Leu
165 170 175
Ser Val Leu Ala Leu Ile Pro Ile Met Leu Ile Pro Trp Lys Gly Asn
180 185 190
Ser Lys Ser Pro Pro Asp Lys Lys Asn Leu Thr Ser Leu Thr Leu Leu
195 200 205
Leu Asp Trp Thr Pro Asn Pro Asn His Ile Pro Leu Tyr Ala Gly Val
210 215 220
Ala Lys Gly Tyr Phe Lys Gln His Gly Leu Asp Leu Gln Leu Gln Lys
225 230 235 240
Asn Thr Asp Ser Ser Ala Val Pro His Val Leu Phe Glu Gln Val
245 250 255
Asp Met Ala Leu Tyr His Ala Leu Gly Ile Met Lys Thr Ser Ile Lys
260 265 270
Gly Met Pro Ile Gln Ile Val Gly Arg Leu Ile Asp Ser Ser Leu Gln
275 280 285
Asp Phe Ser Thr Glu Val Arg Thr Pro Ser Thr Asn Leu Lys Thr
290 295 300

<210>1085

<211>460

<212>PRT

<213>Chlamydia pneumoniae

<400>1085

Met Arg Gln Glu Lys Asp Ser Leu Gly Ile Val Glu Val Pro Glu Asp
1 5 10 15
Lys Leu Tyr Gly Ala Gln Thr Met Arg Ser Arg Asn Phe Phe Ser Trp
20 25 30
Gly Pro Glu Leu Met Pro Tyr Glu Val Ile Arg Ala Leu Val Trp Ile
35 40 45
Lys Lys Cys Ala Ala Gln Ala Asn Gln Asp Leu Gly Phe Leu Asp Ser
50 55 60
Lys His Cys Asp Met Ile Val Ala Ala Ala Asp Glu Ile Leu Glu Gly
65 70 75 80
Gly Phe Glu Glu His Phe Pro Leu Lys Val Trp Gln Thr Gly Ser Gly
85 90 95
Thr Gln Ser Asn Met Asn Val Asn Glu Val Ile Ala Asn Leu Ala Ile
100 105 110
Arg His His Gly Gly Val Leu Gly Ser Lys Asp Pro Ile His Pro Asn
115 120 125
Asp His Val Asn Lys Ser Gln Ser Ser Asn Asp Val Phe Pro Thr Ala
130 135 140
Met His Ile Ala Ala Val Ile Ser Leu Lys Asn Lys Leu Ile Pro Ala
145 150 155 160
Leu Asp His Met Ile Arg Val Leu Asp Ala Lys Val Glu Glu Phe Arg
165 170 175
His Asp Val Lys Ile Gly Arg Thr His Leu Met Asp Ala Val Pro Met
180 185 190
Thr Leu Gly Gln Glu Phe Ser Gly Tyr Ser Ser Gln Leu Arg His Cys
195 200 205
Leu Glu Ser Ile Ala Phe Ser Leu Ala His Leu Tyr Glu Leu Ala Ile
210 215 220
Gly Ala Thr Ala Val Gly Thr Gly Leu Asn Val Pro Glu Gly Phe Val
225 230 235 240
Glu Lys Ile Ile His Tyr Leu Arg Lys Xaa Thr Asp Glu Pro Phe Ile
245 250 255
Pro Ala Xaa Asn Tyr Phe Ser Ala Leu Ser Cys His Asp Ala Leu Val

<211>20
 <212>DNA
 <400>1396
 gaccttgcca gcttgggtcg 20
 <210>1397
 <211>20
 <212>DNA
 <400>1397
 gctgctaaat cccatcgctt 20
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 gttttgtggc tttggcagtg 20
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 actttcctaa gaagcgtagc 20
 <210>1400
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 gaggaatggc gcaggagtta 20
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 gcagtgaataa cggaatccag 20
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 gcgtggggat tgtagggata 20
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 gaataagatg caggcggaag 20
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 gggagacgtt tgtgcgtaaa 20
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 cgtcctgcag gtgttattgt 20
 <210>1407
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 <212>DNA
 <400>1407
 caaggggtgt agagaaagga 20
 <210>1408
 <211>20
 <212>DNA
 <400>1408
 gaagacaaac cttgtcctgg 20

Thr Val Met Thr Thr Ile Thr Ala Ala Val Gln Val Gly Met Met Leu
 275 280 285
 Ala Ala Phe Leu Phe Met Lys Gln Met Ser Asp Leu Ser Asp Val Ile
 290 295 300
 Ser Thr Ala Lys Tyr Phe Asp Lys Asp Ser Asp Phe Leu Ser Lys Ala
 305 310 315 320
 Glu Val Pro Gln Asn Thr Glu Ile Tyr Glu Ile Asn Gly Pro Phe Phe
 325 330 335
 Phe Gly Ile Ala Asp Arg Leu Lys Asn Leu Leu Asn Asp Ile Glu Lys
 340 345 350
 Pro Pro Lys Ile Phe Ile Leu Cys Met Thr Arg Val Pro Thr Ile Asp
 355 360 365
 Ala Ser Ala Met His Ala Leu Glu Glu Phe Phe Leu Glu Cys Asp Arg
 370 375 380
 Gln Gly Thr Leu Leu Leu Leu Ala Gly Val Lys Lys Thr Pro Leu Ala
 385 390 395 400
 Asp Leu Lys Arg Tyr His Leu Asp Glu Leu Ile Gly Val Asp His Ile
 405 410 415
 Phe Ser Asn Ile Lys Ser Ala Leu Leu Phe Ala Gln Ala Leu Thr Asn
 420 425 430
 Leu Glu Ser Lys Thr Ser Thr Arg His Leu Val
 435 440

<210>1087

<211>143

<212>PRT

<213>Chlamydia pneumoniae

<400>1087

Lys Asn Phe Ile Pro Lys Leu Tyr Thr Ser Ile Lys Glu Gly Tyr Ser
 1 5 10 15
 Phe Asn Thr Phe Lys Lys Asp Phe Gln Ala Gly Ile Thr Val Gly Ile
 20 25 30
 Leu Ala Phe Pro Phe Ala Ile Ala Ile Gly Val Gly Val Ser
 35 40 45
 Pro Ile Gln Gly Leu Leu Ala Ser Ile Ile Gly Gly Leu Leu Ala Ser
 50 55 60
 Ala Met Gly Gly Ser Asn Val Leu Ile Ser Gly Pro Ser Ser Ala Phe
 65 70 75 80
 Ile Ser Ile Leu Tyr Cys Leu Ser Ala Lys Tyr Gly Ala Glu Ala Leu
 85 90 95
 Phe Thr Val Thr Leu Leu Ala Gly Val Phe Leu Ile Ala Phe Gly Leu
 100 105 110
 Thr Gly Leu Gly Thr Phe Ile Lys Tyr Met Pro Tyr Pro Val Val Thr
 115 120 125
 Gly Leu Thr His Arg Thr Cys Asp His Tyr Ile Leu Leu Ala Asn
 130 135 140

<210>1088

<211>422

<212>PRT

<213>Chlamydia pneumoniae

<400>1088

Val Thr Met Leu Lys Leu Gln Leu Cys Ala Leu Phe Leu Phe Gly Tyr
 1 5 10 15
 Leu Ala Ile Val Phe Glu His Ile Val Arg Val Asn Lys Ser Ala Ile
 20 25 30
 Ala Leu Ala Met Gly Gly Leu Met Trp Leu Val Cys Phe Ser His Ile
 35 40 45
 Pro Met Ala Asp His Met Ile Leu Val Glu Glu Ile Ala Asp Met Ser
 50 55 60
 Gln Val Ile Phe Phe Leu Phe Ser Ala Met Ala Ile Val Glu Leu Ile
 65 70 75 80
 Asp Ala His Lys Gly Phe Ser Val Ile Val Lys Phe Cys Arg Ile Gln
 85 90 95
 Ser Arg Thr Leu Leu Leu Trp Ala Leu Ile Gly Leu Ser Phe Phe Leu
 100 105 110

Ser Ala Ala Leu Asp Asn Leu Thr Ser Ile Ile Ile Ile Ile Ser Ile
 115 120 125
 Leu Lys Arg Leu Val Lys Ala Arg Glu Asp Arg Leu Leu Leu Gly Ala
 130 135 140
 Ile Cys Val Ile Ala Val Asn Ala Gly Gly Ala Trp Thr Pro Leu Gly
 145 150 155 160
 Asp Val Thr Thr Thr Met Leu Trp Ile Asn Asn Lys Ile Thr Ser Trp
 165 170 175
 Gly Ile Ile Arg Ala Leu Phe Val Pro Ser Leu Val Cys Val Leu Val
 180 185 190
 Ala Gly Phe Cys Gly Gln Phe Phe Leu Arg Lys Arg Gly Ser Thr Leu
 195 200 205
 Ile Ala Lys Asp Val Glu Leu Gln Ser Ala Pro Pro Lys Ser Leu Trp
 210 215 220
 Ile Ile Phe Ile Gly Leu Gly Ser Leu Leu Met Val Pro Val Trp Lys
 225 230 235 240
 Ala Cys Leu Gly Leu Pro Pro Phe Met Gly Ala Leu Leu Gly Leu Gly
 245 250 255
 Leu Val Trp Leu Thr Ser Asp Trp Ile His Ser Pro His Gly Glu Asp
 260 265 270
 Arg Tyr His Leu Arg Val Pro His Ile Leu Thr Lys Ile Asp Ile Ser
 275 280 285
 Ser Ile Thr Phe Phe Ile Gly Ile Leu Leu Ala Val Asn Ala Leu Ser
 290 295 300
 Phe Ala Asn Leu Leu Thr Asp Phe Ser Leu Trp Met Asp Lys Ile Phe
 305 310 315 320
 Ser Arg Asn Val Val Ala Ile Val Ile Gly Leu Leu Ser Ser Val Leu
 325 330 335
 Asp Asn Val Pro Leu Val Ala Xaa Thr Met Gly Met Tyr Thr Leu Pro
 340 345 350
 Leu Asp Asp Thr Leu Trp Lys Leu Ile Ala Tyr Ala Ala Xaa Thr Gly
 355 360 365
 Gly Ser Ile Leu Ile Ile Gly Ser Ala Ala Gly Val Ala Phe Met Gly
 370 375 380
 Leu Glu Lys Val Asp Phe Leu Trp Tyr Phe Lys Arg Ile Ser Trp Ile
 385 390 395 400
 Ala Leu Ala Ser Tyr Phe Gly Gly Leu Phe Ser Tyr Phe Val Leu Glu
 405 410 415
 Ser Leu Asn Phe Phe Ile
 420

<210>1089

<211>624

<212>PRT

<213>Chlamydia pneumoniae

<400>1089

Lys Arg Glu Val Phe Met Lys Lys Gly Lys Leu Gly Ala Ile Val Phe
 1 5 10 15
 Gly Leu Leu Phe Thr Ser Ser Val Ala Gly Phe Ser Lys Asp Leu Thr
 20 25 30
 Lys Asp Asn Ala Tyr Gln Asp Leu Asn Val Ile Glu His Leu Ile Ser
 35 40 45
 Leu Lys Tyr Ala Pro Leu Pro Trp Lys Glu Leu Leu Phe Gly Trp Asp
 50 55 60
 Leu Ser Gln Gln Thr Gln Gln Ala Arg Leu Gln Leu Val Leu Glu Glu
 65 70 75 80
 Lys Pro Thr Thr Asn Tyr Cys Gln Lys Val Leu Ser Asn Tyr Val Arg
 85 90 95
 Ser Leu Asn Asp Tyr His Ala Gly Ile Thr Phe Tyr Arg Thr Glu Ser
 100 105 110
 Ala Tyr Ile Pro Tyr Val Leu Lys Leu Ser Glu Asp Gly His Val Phe
 115 120 125
 Val Val Asp Val Gln Thr Ser Gln Gly Asp Ile Tyr Leu Gly Asp Glu
 130 135 140
 Ile Leu Glu Val Asp Gly Met Gly Ile Arg Glu Ala Ile Glu Ser Leu

145	Arg	Phe	Gly	Arg	Gly	Ser	Ala	Thr	Asp	Tyr	Ser	Ala	Ala	Val	Arg	Ser	160
					165					170						175	
Leu	Thr	Ser	Arg	Ser	Ala	Ala	Phe	Gly	Asp	Ala	Val	Pro	Ser	Gly	Ile		
			180						185					190			
Ala	Met	Leu	Lys	Leu	Arg	Arg	Pro	Ser	Gly	Leu	Ile	Arg	Ser	Thr	Pro		
		195					200					205					
Val	Arg	Trp	Arg	Tyr	Thr	Pro	Glu	His	Ile	Gly	Asp	Phe	Ser	Leu	Val		
	210					215					220						
Ala	Pro	Leu	Ile	Pro	Glu	His	Lys	Pro	Gln	Leu	Pro	Thr	Gln	Ser	Cys		
225					230					235					240		
Val	Leu	Phe	Arg	Ser	Gly	Val	Asn	Ser	Gln	Ser	Ser	Ser	Ser	Ser	Leu		
			245					250						255			
Phe	Ser	Ser	Tyr	Met	Val	Pro	Tyr	Phe	Trp	Glu	Glu	Leu	Arg	Val	Gln		
		260						265					270				
Asn	Lys	Gln	Arg	Phe	Asp	Ser	Asn	His	His	Ile	Gly	Ser	Arg	Asn	Gly		
	275					280						285					
Phe	Leu	Pro	Thr	Phe	Gly	Pro	Ile	Leu	Trp	Glu	Gln	Asp	Lys	Gly	Pro		
	290					295					300						
Tyr	Arg	Ser	Tyr	Ile	Phe	Lys	Ala	Lys	Asp	Ser	Gln	Gly	Asn	Pro	His		
305					310					315					320		
Arg	Ile	Gly	Phe	Leu	Arg	Ile	Ser	Ser	Tyr	Val	Trp	Thr	Asp	Leu	Glu		
			325						330					335			
Gly	Leu	Glu	Glu	Asp	His	Lys	Asp	Ser	Pro	Trp	Glu	Leu	Phe	Gly	Glu		
		340					345					350					
Ile	Ile	Asp	His	Leu	Glu	Lys	Glu	Thr	Asp	Ala	Leu	Ile	Ile	Asp	Gln		
	355						360					365					
Thr	His	Asn	Pro	Gly	Gly	Ser	Val	Phe	Tyr	Leu	Tyr	Ser	Leu	Leu	Ser		
	370					375					380						
Met	Leu	Thr	Asp	His	Pro	Leu	Asp	Thr	Pro	Lys	His	Arg	Met	Ile	Phe		
385					390					395				400			
Thr	Gln	Asp	Glu	Val	Ser	Ser	Ala	Leu	His	Trp	Gln	Asp	Leu	Leu	Glu		
			405						410				415				
Asp	Val	Phe	Thr	Asp	Glu	Gln	Ala	Val	Ala	Val	Leu	Gly	Glu	Thr	Met		
		420					425					430					
Glu	Gly	Tyr	Cys	Met	Asp	Met	His	Ala	Val	Ala	Ser	Leu	Gln	Asn	Phe		
	435					440					445						
Ser	Gln	Ser	Val	Leu	Ser	Ser	Trp	Val	Ser	Gly	Asp	Ile	Asn	Leu	Ser		
	450				455					460							
Lys	Pro	Met	Pro	Leu	Leu	Gly	Phe	Ala	Gln	Val	Arg	Pro	His	Pro	Lys		
465					470					475				480			
His	Gln	Tyr	Thr	Lys	Pro	Leu	Phe	Met	Leu	Ile	Asp	Glu	Asp	Asp	Phe		
		485						490					495				
Ser	Cys	Gly	Asp	Leu	Ala	Pro	Ala	Ile	Leu	Lys	Asp	Asn	Gly	Arg	Ala		
		500					505					510					
Thr	Leu	Ile	Gly	Lys	Pro	Thr	Ala	Gly	Ala	Gly	Gly	Phe	Val	Phe	Gln		
	515						520					525					
Val	Thr	Phe	Pro	Asn	Arg	Ser	Gly	Ile	Lys	Gly	Leu	Ser	Leu	Thr	Gly		
	530					535					540						
Ser	Leu	Ala	Val	Arg	Lys	Asp	Gly	Glu	Phe	Ile	Glu	Asn	Leu	Gly	Val		
545					550					555				560			
Ala	Pro	His	Ile	Asp	Leu	Gly	Phe	Thr	Ser	Arg	Asp	Leu	Gln	Thr	Ser		
			565						570				575				
Arg	Phe	Thr	Asp	Tyr	Val	Glu	Ala	Val	Lys	Thr	Ile	Val	Leu	Thr	Ser		
		580						585				590					
Leu	Ser	Glu	Asn	Ala	Lys	Lys	Ser	Glu	Glu	Gln	Thr	Ser	Pro	Gln	Glu		
	595					600					605						
Thr	Pro	Glu	Val	Ile	Arg	Val	Ser	Tyr	Pro	Thr	Thr	Ser	Ala	Leu			
	610					615					620						

<210>1090

<211>310

<212>PRT

<213>Chlamydia pneumoniae

<400>1090

Met Arg Lys Leu Ile Leu Cys Asn Pro Arg Gly Phe Cys Ser Gly Val
 1 5 10 15
 Val Arg Ala Ile Gln Val Val Glu Val Ala Leu Glu Lys Trp Gly Ala
 20 25 30
 Pro Ile Tyr Val Lys His Glu Ile Val His Asn Arg His Val Val Asn
 35 40 45
 Ala Leu Arg Ala Lys Gly Ala Ile Phe Val Glu Glu Leu Val Asp Val
 50 55 60
 Pro Glu Gly Glu Arg Val Ile Tyr Ser Ala His Gly Ile Pro Pro Ser
 65 70 75 80
 Val Arg Ala Glu Ala Lys Ala Arg Lys Leu Ile Asp Ile Asp Ala Thr
 85 90 95
 Cys Gly Leu Val Thr Lys Val His Ser Ala Ala Lys Leu Tyr Ala Ser
 100 105 110
 Lys Gly Tyr Lys Ile Ile Leu Ile Gly His Lys Lys His Val Glu Val
 115 120 125
 Ile Gly Ile Val Gly Glu Val Pro Glu His Ile Thr Val Val Glu Lys
 130 135 140
 Val Ala Asp Val Glu Ala Leu Pro Phe Ser Ser Asp Thr Pro Leu Phe
 145 150 155 160
 Tyr Ile Thr Gln Thr Thr Leu Ser Leu Asp Asp Val Gln Glu Ile Ser
 165 170 175
 Ser Ala Leu Leu Lys Arg Tyr Pro Ser Ile Ile Thr Leu Pro Ser Ser
 180 185 190
 Ser Ile Cys Tyr Ala Thr Thr Asn Arg Gln Lys Ala Leu Arg Ser Val
 195 200 205
 Leu Ser Arg Val Asn Tyr Val Tyr Val Val Gly Asp Val Asn Ser Ser
 210 215 220
 Asn Ser Asn Arg Leu Arg Glu Val Ala Leu Arg Arg Gly Val Pro Ala
 225 230 235 240
 Asp Leu Ile Asn Asn Pro Glu Asp Ile Asp Thr Asn Ile Val Asn His
 245 250 255
 Ser Gly Asp Ile Ala Met Thr Ala Gly Ala Ser Thr Pro Glu Asp Val
 260 265 270
 Val Gln Ala Cys Ile Arg Lys Leu Ser Ser Leu Ile Pro Gly Leu Gln
 275 280 285
 Val Glu Asn Asp Ile Phe Ala Val Glu Asp Val Val Phe Gln Leu Pro
 290 295 300
 Lys Glu Leu Arg Cys Ser
 305 310

<210>1091

<211>245

<212>PRT

<213>Chlamydia pneumoniae

<400>1091

Arg Met Ser Tyr Phe Asn Tyr Gln Lys Asn Ser Val Val Leu Arg Ser
 1 5 10 15
 Leu Gly Leu Leu Ala Lys Phe Phe Ser Arg Leu Leu Tyr Arg Val Phe
 20 25 30
 Phe Ser Phe Arg Glu Gly Ile Tyr Leu Phe Ser Ser Leu Tyr Leu Lys
 35 40 45
 Tyr Pro Arg Leu Phe Phe Tyr Asp Leu Gly Lys Tyr Val Tyr Ser Leu
 50 55 60
 Arg His Cys Pro Tyr Ala Lys Leu Gly Arg Leu Pro Gly Ala Ser Leu
 65 70 75 80
 Leu Lys Glu Gly Asn Val Tyr Gly Glu Thr Pro Trp Ser Val Leu Ala
 85 90 95
 Lys Ile Cys Gln Ala Phe Asp Ile Thr Ser Gln Asp Ile Leu Tyr Asp
 100 105 110
 Leu Gly Cys Gly Leu Gly Lys Val Cys Phe Trp Phe Ser His Val Val
 115 120 125
 Arg Cys Gln Val Ile Gly Ile Asp Asn Gln Pro His Phe Ile Arg Phe
 130 135 140
 Ser Ser Asn Met His Arg Lys Leu Ser Ser Gly Phe Ala Leu Phe Asp

145					150					155				160
Thr	Glu	Glu	Phe	Lys	Asn	Val	Val	Leu	Ser	Gln	Ala	Ser	Tyr	Val
				165					170					175
Phe	Tyr	Gly	Ser	Ser	Phe	Ser	Arg	Arg	Leu	Leu	Asn	Glu	Ile	Ile
			180					185					190	Leu
Lys	Leu	Ser	Glu	Met	Ala	Pro	Gly	Ser	Val	Val	Ile	Ser	Ile	Ser
		195					200					205		Phe
Pro	Leu	Asp	Ser	Phe	Ser	Arg	Gly	Lys	Glu	Cys	Phe	Phe	Thr	Glu
	210					215					220			Lys
Ser	Cys	Ser	Val	Arg	Phe	Pro	Trp	Gly	Lys	Thr	Ile	Ala	Tyr	Lys
225					230					235				Asn
Ile	Arg	Lys	Gly	Ser										240
				245										

<210>1092

<211>385

<212>PRT

<213>Chlamydia pneumoniae

<400>1092

Lys	Ser	Leu	Ser	Ala	Glu	Ser	Thr	Ser	Ser	Asn	Ser	Thr	Gly	Lys	Ala
1				5					10					15	
Ser	Thr	Glu	Thr	Thr	Ser	Ser	Ser	Phe	Pro	Phe	Phe	Ser	Cys	Lys	Ala
			20					25					30		
Pro	Glu	Gly	Asp	Ser	Ser	Val	Asp	Lys	Thr	Phe	Thr	Val	Ser	Val	Gln
		35					40					45			
Thr	Pro	Lys	Ala	Gln	Glu	Gln	Gln	Glu	Ala	Ser	Ala	Ser	Gln	Ser	Gln
	50					55					60				
Ala	Gln	Phe	His	Val	Arg	Ser	Tyr	Ser	Ser	Ser	Thr	Ile	Lys	Glu	His
65					70				75					80	
Ser	Ala	Lys	Glu	Lys	Val	Ser	Gln	Ser	Thr	Lys	Ser	Ala	Glu	Thr	Gln
			85						90					95	
Lys	His	Thr	Gln	Thr	Lys	Ser	Asp	Ala	Thr	Leu	Ser	Pro	Met	Ser	Leu
			100					105					110		
Tyr	Ser	Thr	Leu	His	Lys	Glu	Val	Pro	Gln	Ala	Leu	Ser	Ser	Thr	Lys
	115						120					125			
Ser	Gln	Gln	Lys	Asp	Glu	Glu	His	Arg	Asp	Gln	Arg	Gln	Gln	Glu	Gly
	130					135				140					
Tyr	Glu	Gln	Glu	Gln	Glu	Gln	Glu	Glu	Gly	Lys	Lys	Lys	Thr	Pro	Trp
145					150					155				160	
Cys	Thr	Val	Glu	Ser	Leu	Gln	Gln	Thr	Ser	Ser	Ser	Asn	Gln	Val	Tyr
			165					170					175		
Glu	Ser	Tyr	Thr	Pro	Ile	Ile	Pro	Asp	Pro	Ile	Val	Glu	Phe	Ala	Leu
			180					185					190		
Ser	Glu	Ser	Gln	Leu	Ser	Val	Leu	Ala	Gly	Lys	Arg	Val	Thr	Asn	Leu
	195					200						205			
Asp	Val	Leu	Arg	Ile	Cys	Thr	Glu	Leu	Met	Lys	Leu	Met	Leu	Lys	Ser
	210				215					220					
Arg	Ala	Asn	Asp	Thr	Met	Thr	Arg	Leu	Glu	Glu	Arg	Glu	Leu	Met	Glu
225					230					235				240	
Arg	Glu	Ala	His	Glu	Leu	Ala	Ala	Ser	Tyr	Ser	Arg	Gln	Ala	Lys	Tyr
			245						250					255	
Ala	Arg	Trp	Leu	Gly	Ile	Ala	Thr	Ala	Thr	Leu	Gly	Ile	Leu	Gly	Ala
			260					265					270		
Ile	Ala	Pro	Met	Val	Gly	Glu	Ile	Ser	Gly	Asp	Ser	Ile	Leu	Gly	Phe
	275						280					285			
Val	Gln	Arg	Ile	Ser	Gly	Arg	Phe	Lys	Asp	Ala	Thr	Ala	Lys	Thr	Phe
	290					295				300					
Phe	Lys	Gly	Ile	Gly	Lys	Val	Phe	Thr	Ser	Leu	Ser	Gln	Leu	Thr	Glu
305					310					315				320	
Ala	Ala	Ser	Lys	Val	His	Glu	Leu	Ser	Glu	Ser	Ala	Val	Arg	Ala	Val
			325						330					335	
Ala	Glu	Tyr	Arg	Lys	Glu	Val	Phe	Arg	Met	Arg	Gln	Asp	Glu	Val	Thr
			340					345				350			
Arg	Thr	Ile	Glu	Glu	Val	Lys	Asp	Asn	Trp	Lys	Ser	Met	Asp	Asn	Phe
	355						360					365			

Leu Leu Asn Ile Leu Gln Thr Glu His Asp Ala Ala Arg Ser Leu Tyr
 370 375 380

Gln

385

<210>1093

<211>112

<212>PRT

<213>Chlamydia pneumoniae

<400>1093

Ile His Arg Arg Xaa Ile Met Thr Val Ser Tyr Gln Ser Ile Ser Thr
 1 5 10 15
 Pro Pro Pro Glu Gly Glu Phe Asp Ile Phe Val Asp Gly Asn Ala Thr
 20 25 30
 Glu Glu Ala Val Val Ala Ala Glu Val Gln Val Ala Leu Pro Ala Gly
 35 40 45
 Glu Gln Tyr Ala Met Leu Arg Ala Thr Ser Glu Leu Cys Phe Gly Ile
 50 55 60
 Xaa Thr Gln Ser Glu Cys Ala Leu Thr Gln Ala Leu Pro Pro Lys Glu
 65 70 75 80
 Lys Thr Ile Thr Arg Arg Ala Ile Ser Ser Lys Lys Trp His Ile Asn
 85 90 95
 Ala Ile Asn Ile Ser Ala Glu Pro Lys Thr Arg Thr Ile Ala Ala Asp
 100 105 110

<210>1094

<211>515

<212>PRT

<213>Chlamydia pneumoniae

<400>1094

Cys Gly Asn Ser Thr Met Ser Ser Trp Leu Ser Gln Ala Ser Glu Val
 1 5 10 15
 Leu Leu Asn Gln Asp Pro Tyr Ile Pro Asp Ala Pro Arg Ser Gln Glu
 20 25 30
 Ser Ser Val Pro Lys Ile Ser Tyr Ser Ile Thr Val Ala Pro Gln Glu
 35 40 45
 Ala Gln Lys Ser Leu Pro Lys Phe Phe Thr Gln Lys Phe Gln Ser Gln
 50 55 60
 Cys Lys Ser Glu Pro Pro Ile Thr His His Lys Thr Phe Ile Ile Ala
 65 70 75 80
 Thr Pro Arg Glu Arg Ile Leu Arg Phe Gly Ser Ser Phe Glu Ser Gln
 85 90 95
 Leu His Asn Thr Ser Gln Ala Gln Thr Ser Ser Pro Trp Asn Leu Phe
 100 105 110
 Ser Gln Lys Asn Ser Thr Glu Ala Ser Lys Ala Leu Met Gln Glu Leu
 115 120 125
 Thr Met Pro Lys Ser Pro Glu Lys Thr Ser Glu Lys Ala Leu Asp Lys
 130 135 140
 Asn Leu Ser Ser Lys Gln Glu Gly Ser Cys Lys Asn Phe Asp Thr Leu
 145 150 155 160
 His Leu Gln Gln His Leu Lys Leu Phe Gly Thr Val Asp Ser Leu Tyr
 165 170 175
 Ser Gln Ser Leu Asp Ser Glu Gln Gln Glu Leu Leu Gln Ser Arg Arg
 180 185 190
 Glu Glu Arg Ser Glu Thr Tyr Ala Asn Gln Gln Ser Ser Glu Lys Lys
 195 200 205
 Ile Glu Thr Lys Val Gln Ile Lys Asp Leu Cys Lys Asp Leu Phe Ser
 210 215 220
 Gln Asp Gln Asp Ser Asn Gln Lys Gln Lys Lys Ser Pro Phe Gln Gln
 225 230 235 240
 Asp Thr Ser Arg Lys Asn Arg Ile Ala Lys Ala Ala Gln Ala Val Pro
 245 250 255
 Val Ile Pro Pro Pro Ser Ile Gly Val Phe Thr Leu Ser Tyr Leu Leu
 260 265 270
 Thr Lys Gln Gly Ile Leu Ser Asp Phe Ser Ser Tyr Gly Cys His Lys
 275 280 285

Asp Ser Val Glu Ser Thr Gln Arg Glu Leu Asp Ala Leu His Glu Lys
 290 295 300
 Arg Ile Glu Thr Ile Lys Val Ser Ile Glu Lys Glu Lys Arg Glu Arg
 305 310 315 320
 Leu Trp Gly Ser Leu Ser Asp Ile Ile Gly Trp Leu Ala Pro Phe Val
 325 330 335
 Ser Ile Gly Ile Gly Ile Val Ala Ile Leu Ser Gly Gly Gly Ile Phe
 340 345 350
 Ala Phe Ala Gly Phe Phe Ala Gly Leu Ile Ser Leu Val Ile Lys Cys
 355 360 365
 Leu Glu Lys Leu Lys Phe Trp Asp Trp Leu Glu Lys His Leu Pro Ile
 370 375 380
 Asn Asn Glu Glu Leu Arg Arg Lys Ile Ile Thr Ile Ile Gln Trp Val
 385 390 395 400
 Val Tyr Leu Thr Pro Val Ile Leu Ser Ile Cys Thr Leu Lys Val Glu
 405 410 415
 Asn Leu Gly Phe Ser Pro Ile Ile Glu Gly Ala Ile Lys Gly Ile Gln
 420 425 430
 Pro Ala Ile Glu Ser Thr Met Ala Ala Leu Arg Cys Ala Ile Leu Phe
 435 440 445
 Ser Gln Ala Glu Ile Tyr Lys Leu Lys Gly Lys Leu Thr Lys Ile Gln
 450 455 460
 Leu Asp Ile Glu Leu Lys Ser Phe Asp Arg Asp Asp His Tyr Glu Arg
 465 470 475 480
 Ser Gln Glu Leu Leu Asp Asn Met Glu Ser Ser Phe Glu Ala Leu Ser
 485 490 495
 Arg Ile Leu Asn Tyr Met Arg Glu Leu Asp Gln Val Tyr Leu His Ser
 500 505 510
 Leu Arg Gly
 515

<210>1095

<211>191

<212>PRT

<213>Chlamydia pneumoniae

<400>1095

Cys Ile Glu Val Ile Glu Arg Thr Tyr Gly His Leu His Leu Gln Pro
 1 5 10 15
 Thr Pro Leu Met Ser His Leu Asn Tyr Leu Leu Glu Lys Ile Ala Ala
 20 25 30
 Ser Ser Lys Glu Asp Phe Pro Phe Pro Asp Asp Leu Glu Ser Tyr Leu
 35 40 45
 Glu Gly Tyr Val Pro Asp Lys Asn Ile Ala Leu Asp Thr Tyr Gln Lys
 50 55 60
 Ile Phe Lys Ile Ser Ser Glu Asp Leu Glu Lys Val Tyr Lys Glu Gly
 65 70 75 80
 Tyr His Ala Tyr Leu Asp Lys Asp Tyr Ala Lys Ser Ile Thr Val Phe
 85 90 95
 Arg Trp Leu Val Phe Phe Asn Pro Phe Val Ser Lys Phe Trp Phe Ser
 100 105 110
 Leu Gly Ala Ser Leu His Met Ser Glu Gln Tyr Ser Gln Ala Leu His
 115 120 125
 Ala Tyr Gly Val Thr Ala Val Leu Arg Asp Lys Asp Pro Tyr Pro His
 130 135 140
 Tyr Tyr Ala Tyr Ile Cys Tyr Thr Leu Thr Asn Glu His Glu Glu Ala
 145 150 155 160
 Glu Lys Ala Leu Glu Met Ala Trp Val Arg Ala Gln His Lys Pro Leu
 165 170 175
 Tyr Asn Glu Leu Lys Glu Glu Ile Leu Asp Ile Arg Lys His Lys
 180 185 190

<210>1096

<211>339

<212>PRT

<213>Chlamydia pneumoniae

<400>1096

Thr Thr Ala Ser Ser Ser Asn Thr Lys Arg Leu Cys Cys Lys Lys Thr
 1 5 10 15
 Gln Arg Arg Pro Ser Pro Glu Thr Gln Ala Arg Ala Ser Leu Ser Gln
 20 25 30
 Ala Ser Ser Ser Ser Gln Arg Ser Leu Pro Pro Gln Glu Ser Ala Pro
 35 40 45
 Glu Arg Thr Leu Leu Glu Gln Gln Lys Ala Ser Ser Phe Ser Pro Leu
 50 55 60
 Ser Gln Phe Ser Ala Glu Lys Gln Lys Glu Ala Leu Thr Thr Ser Lys
 65 70 75 80
 Ser His Glu Leu Tyr Lys Glu Arg Asp Gln Asp Arg Gln Gln Arg Glu
 85 90 95
 Gln His Asp Arg Lys His Asp Gln Glu Glu Asp Ala Glu Ser Lys Lys
 100 105 110
 Lys Lys Lys Lys Arg Gly Leu Gly Val Glu Ala Val Ala Glu Glu Pro
 115 120 125
 Gly Glu Asn Leu Asp Ile Ala Leu Ile Phe Ser Asp Gln Met Arg
 130 135 140
 Pro Pro Ala Glu Glu Thr Ser Xaa Lys Glu Thr Thr Phe Lys Lys Lys
 145 150 155 160
 Leu Pro Ser Pro Met Ser Val Phe Ser Arg Phe Ile Pro Ser Lys Asn
 165 170 175
 Pro Leu Ser Val Gly Ser Ser Ile His Xaa Pro Ile Gln Thr Pro Lys
 180 185 190
 Val Glu Asn Val Phe Leu Arg Phe Met Lys Leu Met Ala Arg Ile Leu
 195 200 205
 Gly Gln Ala Glu Ala Glu Ala Asn Glu Leu Tyr Met Arg Val Lys Gln
 210 215 220
 Arg Thr Asp Asp Val Asp Thr Leu Thr Val Leu Ile Ser Lys Ile Asn
 225 230 235 240
 Asn Glu Lys Lys Asp Ile Asp Trp Ser Glu Asn Glu Glu Met Lys Ala
 245 250 255
 Leu Leu Asn Arg Ala Lys Glu Ile Gly Val Thr Ile Asp Lys Glu Lys
 260 265 270
 Tyr Thr Trp Thr Glu Glu Glu Lys Arg Leu Leu Lys Glu Asn Val Gln
 275 280 285
 Met Arg Lys Glu Asn Met Glu Lys Ile Thr Gln Met Glu Arg Thr Asp
 290 295 300
 Met Gln Arg His Leu Gln Glu Ile Ser Gln Cys His Gln Ala Arg Ser
 305 310 315 320
 Asn Val Leu Lys Leu Leu Lys Glu Leu Met Asp Thr Phe Ile Tyr Asn
 325 330 335
 Leu Arg Pro

<210>1097

<211>211

<212>PRT

<213>Chlamydia pneumoniae

<400>1097

Phe Ser Phe Phe Phe Tyr Ala Leu Lys Leu Gln Ile Met Asn Met Pro
 1 5 10 15
 Val Pro Ser Ala Val Pro Ser Ala Asn Ile Thr Leu Lys Glu Asp Ser
 20 25 30
 Ser Thr Val Ser Thr Ala Ser Gly Ile Leu Lys Thr Ala Thr Gly Glu
 35 40 45
 Val Leu Val Ser Cys Thr Ala Leu Glu Gly Ser Ser Ser Thr Asp Ala
 50 55 60
 Leu Ile Ser Leu Ala Leu Gly Gln Ile Ile Leu Ala Thr Gln Gln Glu
 65 70 75 80
 Leu Leu Leu Gln Ser Thr Asn Val His Gln Leu Leu Phe Leu Pro Pro
 85 90 95
 Glu Val Val Glu Leu Glu Ile Gln Val Val Asp Leu Leu Val Gln Leu
 100 105 110
 Glu His Ala Glu Thr Ile Thr Ser Glu Pro Gln Glu Thr Gln Thr Gln

115 120 125
 Ser Arg Ser Glu Gln Thr Leu Pro Gln Gln Ser Ser Ser Lys Gln Ser
 130 135 140
 Ala Leu Ser Pro Arg Ser Leu Lys Pro Glu Ile Ser Asp Ser Lys Gln
 145 150 155 160
 Gln Gln Ala Leu Gln Thr Pro Lys Asp Ser Ala Val Arg Lys His Ser
 165 170 175
 Glu Asp Arg His Leu Arg His Lys Leu Ala Leu Pro Tyr Leu Arg Gln
 180 185 190
 Ala Gln Val Leu Arg Asp Pro Tyr Leu Arg Lys Lys Val Arg Gln Lys
 195 200 205
 Glu His Tyr
 210

<210>1098

<211>106

<212>PRT

<213>Chlamydia pneumoniae

<400>1098

Ile Phe Leu Glu Ile Phe Ile Met Lys Lys Val Val Thr Leu Ser Ile
 1 5 10 15
 Ile Phe Phe Ala Thr Tyr Cys Ala Ser Glu Leu Ser Ala Val Thr Val
 20 25 30
 Val Ala Val Pro Leu Ser Glu Ala Pro Gly Lys Ile Gln Val Arg Pro
 35 40 45
 Val Val Gly Leu Gln Phe Gln Glu Glu Gln Gly Ser Val Pro Tyr Ser
 50 55 60
 Phe Tyr Tyr Pro Tyr Asp Tyr Gly Tyr Tyr Tyr Pro Glu Thr Tyr Gly
 65 70 75 80
 Tyr Thr Lys Asn Thr Gly Gln Glu Ser Arg Glu Cys Tyr Thr Arg Phe
 85 90 95
 Glu Asp Gly Thr Ile Phe Tyr Glu Cys Asp
 100 105

<210>1099

<211>301

<212>PRT

<213>Chlamydia pneumoniae

<400>1099

Met Thr Met Pro Ser Thr Gln Phe His Thr Thr Ile Leu Glu Gln Phe
 1 5 10 15
 Ser Leu Phe Leu Ser Val Asp Arg Gly Leu Cys Gln Gln Ser Ile Ala
 20 25 30
 Ala Tyr Arg Gln Asp Ile Ser Ser Phe Leu Thr Ile Ser Ala Ile Ser
 35 40 45
 Ser Pro Gln Asp Ile Ser Gln Asn Ser Val Tyr Ile Phe Ala Glu Glu
 50 55 60
 Leu Tyr Arg Arg Lys Glu Ala Glu Thr Thr Leu Ala Arg Arg Leu Ile
 65 70 75 80
 Ala Leu Lys Val Phe Phe Leu Phe Leu Lys Asp Gln Gln Leu Leu Pro
 85 90 95
 Tyr Pro Pro Ile Ile Glu His Pro Lys Ile Trp Lys Arg Leu Pro Ser
 100 105 110
 Val Leu Thr Pro Gln Glu Val Asp Ala Leu Leu Ala Val Pro Leu Gln
 115 120 125
 Met Glu Lys Asn Pro Arg His Leu Ala Phe Arg Asp Thr Ala Ile Leu
 130 135 140
 His Thr Leu Tyr Ser Thr Gly Val Arg Val Ser Glu Leu Cys Asp Leu
 145 150 155 160
 Arg Leu Gly His Val Ser Asp Asp Cys Ile Arg Val Thr Gly Lys Gly
 165 170 175
 Ser Lys Thr Arg Leu Val Pro Leu Gly Ser Arg Ala Arg Glu Ala Ile
 180 185 190
 Asp Ala Tyr Leu Cys Pro Phe Arg Asp Gln Tyr Gln Lys Lys Asn Pro
 195 200 205
 His Glu Asp His Leu Phe Leu Ser Thr Arg Gly His Lys Leu Glu Arg

210 215 220
 Ser Cys Val Trp Arg Arg Ile His Asn Tyr Ala Lys Gln Val Thr Ser
 225 230 235 240
 Lys Pro Val Ser Pro His Ser Leu Arg His Ala Phe Ala Thr His Leu
 245 250 255
 Leu Asp Asn Lys Ala Asp Leu Arg Val Ile Gln Glu Met Leu Gly His
 260 265 270
 Ala Arg Ile Ala Ser Thr Glu Val Tyr Thr His Val Ala Ala Asp Ser
 275 280 285
 Leu Ile Glu Lys Phe Leu Ala His His Pro Arg Asn Leu
 290 295 300
 <210>1100
 <211>553
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>1100
 Val Glu Gly Ile Val Ile Leu Ala Asn Glu Cys Asn Phe Ser Ile Gly
 1 5 10 15
 Ser Gly Glu Phe Ser Ser Tyr Arg Glu Lys Thr Met Glu Arg Lys Arg
 20 25 30
 Phe Ile Asp Cys Asp Ser Thr Lys Ile Leu Gln Glu Leu Ala Leu Asn
 35 40 45
 Pro Leu Asp Leu Thr Ala Pro Gly Val Leu Ser Ala Glu Arg Ile Lys
 50 55 60
 Lys Phe Ser Leu Leu Gly Gly Gly Phe Thr Phe Ser Phe Ala Thr Glu
 65 70 75 80
 Arg Leu Asp Asp Ala Ile Leu Ala Ala Leu Ile Ser Leu Ala Glu Glu
 85 90 95
 Arg Gly Leu His Glu Ser Met Leu Ala Met Gln Gln Gly Gln Val Val
 100 105 110
 Asn Tyr Ile Glu Gly Phe Pro Ser Glu Met Arg Pro Ala Leu His Thr
 115 120 125
 Ala Thr Arg Ala Trp Val Thr Asp Ser Ser Phe Thr Gly Glu Ala Glu
 130 135 140
 Asp Ile Ala Val Arg Ser Arg Val Glu Ala Gln Arg Leu Lys Asp Phe
 145 150 155 160
 Leu Thr Lys Val Arg Ser Gln Phe Thr Thr Ile Val Gln Ile Gly Ile
 165 170 175
 Gly Gly Ser Glu Leu Gly Pro Lys Ala Leu Tyr Arg Ala Leu Arg Ala
 180 185 190
 Tyr Cys Pro Thr Asp Lys His Val His Phe Ile Ser Asn Ile Asp Pro
 195 200 205
 Asp Asn Gly Ala Glu Val Leu Asp Thr Ile Asp Cys Ala Lys Ala Leu
 210 215 220
 Val Val Val Val Ser Lys Ser Gly Thr Thr Ile Glu Thr Ala Val Asn
 225 230 235 240
 Glu Ala Phe Phe Ala Asp Tyr Phe Ala Lys Lys Gly Leu Ser Phe Lys
 245 250 255
 Asp His Phe Ile Ala Val Thr Cys Glu Gly Ser Pro Met Asp Asp Thr
 260 265 270
 Gly Lys Tyr Leu Glu Val Phe His Leu Trp Glu Ser Ile Gly Gly Arg
 275 280 285
 Phe Ser Ser Thr Ser Met Val Gly Gly Val Val Leu Gly Phe Ala Tyr
 290 295 300
 Gly Phe Glu Val Phe Leu Gln Leu Leu Gln Gly Ala Ser Ala Met Asp
 305 310 315 320
 Gln Ile Ala Leu Gln Pro Asn Ala Arg Glu Asn Leu Pro Met Leu Ser
 325 330 335
 Ala Leu Ile Ser Ile Trp Asn Arg Asn Phe Leu Gly Tyr Pro Thr Glu
 340 345 350
 Ala Val Ile Pro Tyr Ser Ser Gly Leu Glu Phe Phe Pro Ala His Leu
 355 360 365
 Gln Gln Cys Cys Met Glu Ser Asn Gly Lys Ser Ile Val Gln Asp Gly
 370 375 380

Arg Arg Val Gly Phe Ser Thr Ser Pro Val Ile Trp Gly Glu Pro Gly
 385 390 395 400
 Thr Asn Gly Gln His Ser Phe Phe Gln Cys Leu His Gln Gly Thr Asp
 405 410 415
 Ile Ile Pro Val Glu Phe Ile Gly Phe Glu Lys Ser Gln Lys Gly Glu
 420 425 430
 Asp Ile Ser Phe Gln Gly Thr Thr Ser Ser Gln Lys Leu Phe Ala Asn
 435 440 445
 Met Ile Ala Gln Ala Ile Ala Leu Ala Cys Gly Ser Glu Asn Thr Asn
 450 455 460
 Pro Asn Lys Asn Phe Asp Gly Asn Arg Pro Ser Ser Val Leu Val Ser
 465 470 475 480
 Ser Gln Leu Asn Pro Tyr Ser Leu Gly Glu Leu Leu Ser Tyr Tyr Glu
 485 490 495
 Asn Lys Ile Val Phe Gln Gly Phe Cys Trp Gly Ile Asn Ser Phe Asp
 500 505 510
 Gln Glu Gly Val Ser Leu Gly Lys Ala Leu Ala Asn Arg Val Leu Glu
 515 520 525
 Leu Leu Glu Gly Ala Asp Ala Ser Asn Phe Pro Glu Ala Ala Ser Leu
 530 535 540
 Leu Thr Leu Phe Asn Ile Lys Phe Arg
 545 550
 <210>1101
 <211>523
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>1101
 Asn Met Pro Gly Ser Val Ser Ser Pro Pro Leu Ser Pro Val Ile Val
 1 5 10 15
 Arg Glu Arg Val Pro Ser Ser Ser Gly Ser Asp Leu Ile Gln Pro His
 20 25 30
 Ala Val Leu Lys Ile Ser Ile Leu Ile Phe Ala Leu Val Thr Ile Leu
 35 40 45
 Gly Ile Val Leu Val Val Ser Ala Leu Gly Ala Leu Pro Ser Leu
 50 55 60
 Val Leu Thr Val Ser Gly Cys Ile Ala Ile Ala Val Gly Leu Ile Gly
 65 70 75 80
 Leu Gly Ile Leu Val Thr Arg Leu Ile Leu Ser Thr Ile Arg Lys Val
 85 90 95
 Asp Ala Met Gly Tyr Asp Ala Ala Val Lys Glu Glu Gln Tyr Leu Ser
 100 105 110
 Arg Ile Arg Glu Leu Glu Ser Glu Asn Arg Glu Ile Arg Asp Arg Asn
 115 120 125
 Arg Ala Val Glu Asp Gln Cys Ala His Leu Ser Glu Glu Asn Lys Asp
 130 135 140
 Leu Arg Asp Pro Glu Tyr Leu His Gly Met Thr Glu Arg Leu Ile Ala
 145 150 155 160
 Ser Leu Glu Ile Glu Asn Gln Ala Leu Val Ala Glu Asn Ile Leu Leu
 165 170 175
 Lys Asp Trp Asn Ala Ser Leu Ser Arg Asp Phe Arg Ala Tyr Lys Gln
 180 185 190
 Lys Phe Pro Leu Gly Ala Leu Glu Pro Trp Lys Glu Asp Ile Ala Cys
 195 200 205
 Ile Met Glu Gln Asn Leu Phe Leu Lys Pro Glu Cys Ile Ala Met Val
 210 215 220
 Lys Ser Leu Pro Leu Glu Thr Gln Arg Leu Phe Leu Tyr Pro Lys Gly
 225 230 235 240
 Phe Gln Ser Leu Val Asn Arg Phe Ala Pro Arg Ser Arg Phe Phe Gln
 245 250 255
 Thr Pro Lys Tyr Glu Tyr Asn Ser Arg Asn Glu Asn Glu Asp Gly Lys
 260 265 270
 Val Ala Ala Val Cys Ala Arg Leu Lys Lys Glu Phe Phe Ser Ala Val
 275 280 285
 Leu Gly Ala Cys Ser Tyr Glu Glu Leu Gly Gly Ile Cys Glu Arg Ala

290 295 300
 Val Ala Leu Lys Glu Thr Leu Pro Leu Pro Glu Ala Val Tyr Asp Thr
 305 310 315 320
 Leu Val Gln Glu Phe Pro Asn Leu Leu Thr Ala Glu Ser Leu Trp Lys
 325 330 335
 Glu Trp Cys Phe Tyr Ser Tyr Pro Tyr Leu Arg Pro Tyr Leu Ser Val
 340 345 350
 Asp Tyr Cys Lys Arg Leu Phe Val Gln Leu Phe Glu Glu Leu Cys Leu
 355 360 365
 Lys Leu Phe Thr Thr Gly Ser Pro Glu Asp Gln Ala Leu Val Arg Leu
 370 375 380
 Phe Ser Tyr Tyr Arg Asn His Ile Pro Ala Val Leu Ala Ser Phe Gly
 385 390 395 400
 Leu Pro Pro Pro Glu Thr Gly Gly Ser Val Phe Val Leu Leu Pro Lys
 405 410 415
 Gln Glu Asn Leu Leu Trp Ser Gln Ile Glu Val Leu Ala Thr Arg Tyr
 420 425 430
 Leu Lys Asp Thr Phe Val Arg Asn Ser Glu Trp Thr Gly Ser Phe Glu
 435 440 445
 Met Met Phe Ser Tyr Asn Glu Met Cys Lys Glu Ile Ser Glu Gly Arg
 450 455 460
 Ile Arg Phe Ala Glu Asp Tyr Glu Thr Arg His Ser Glu Glu Phe Pro
 465 470 475 480
 Pro Ser Pro Leu Ser Glu Glu Gly Glu Gly Glu Glu Phe Leu Pro Pro
 485 490 495
 Cys Ser Glu Glu Glu Val Ser Val Leu Glu Arg Pro Asp Leu Asp Val
 500 505 510
 Asp Ser Met Trp Val Trp His Pro Ser Gly Pro
 515 520
 <210>1102
 <211>335
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>1102
 Phe Phe Leu Lys Gly Val Arg Met Ala Phe Lys Glu Val Val Arg Val
 1 5 10 15
 Ala Val Thr Gly Gly Lys Gly Gln Ile Ala Tyr Asn Phe Leu Phe Ala
 20 25 30
 Leu Ala His Gly Asp Val Phe Gly Val Asp Arg Gly Val Asp Leu Arg
 35 40 45
 Ile Tyr Asp Val Pro Gly Thr Glu Arg Ala Leu Ser Gly Val Arg Met
 50 55 60
 Glu Leu Asp Asp Gly Ala Tyr Pro Leu Xaa His Arg Leu Arg Val Thr
 65 70 75 80
 Thr Ser Leu Asn Asp Ala Phe Asp Gly Ile Asp Ala Ala Phe Leu Ile
 85 90 95
 Gly Ala Val Pro Arg Gly Pro Gly Met Glu Arg Gly Asp Leu Leu Lys
 100 105 110
 Gln Asn Gly Gln Ile Phe Ser Leu Gln Gly Ala Ala Leu Asn Thr Ala
 115 120 125
 Ala Lys Arg Asp Ala Lys Ile Phe Val Val Gly Asn Pro Val Asn Thr
 130 135 140
 Asn Cys Trp Ile Ala Met Lys His Ala Pro Arg Leu His Arg Lys Asn
 145 150 155 160
 Phe His Ala Met Leu Arg Leu Asp Gln Asn Arg Met His Ser Met Leu
 165 170 175
 Ala His Arg Ala Glu Val Pro Leu Glu Glu Val Ser Arg Val Val Ile
 180 185 190
 Trp Gly Asn His Ser Ala Lys Gln Val Pro Asp Phe Thr Gln Ala Arg
 195 200 205
 Ile Ser Gly Lys Pro Ala Ala Glu Val Ile Gly Asp Arg Asp Trp Leu
 210 215 220
 Glu Asn Ile Leu Val His Ser Val Gln Asn Arg Gly Ser Ala Val Ile
 225 230 235 240

Glu Ala Arg Gly Lys Ser Ser Ala Ala Ser Ala Ser Arg Ala Leu Ala
 245 250 255
 Glu Ala Ala Arg Ser Ile Phe Cys Pro Lys Ser Asp Glu Trp Phe Ser
 260 265 270
 Ser Gly Val Cys Ser Asp His Asn Pro Tyr Gly Ile Pro Glu Asp Leu
 275 280 285
 Ile Phe Gly Phe Pro Cys Arg Met Leu Pro Ser Gly Asp Tyr Glu Ile
 290 295 300
 Ile Pro Gly Leu Pro Trp Glu Pro Phe Ile Arg Asn Lys Ile Gln Ile
 305 310 315 320
 Ser Leu Asp Glu Ile Ala Gln Glu Lys Ala Ser Val Ser Ser Leu
 325 330 335

<210>1103

<211>82

<212>PRT

<213>Chlamydia pneumoniae

<400>1103

Ser Glu His Thr Pro Glu Glu Asn His Ser Ser Leu Leu Gly Gln Lys
 1 5 10 15
 Ile Asp Arg Ala Ala Ser Ala Ser Ala Arg Asp Ala Asp Ala Ala Glu
 20 25 30
 Asp Phe Pro Leu Ala Ser Ile Thr Ala Leu Pro Arg Phe Cys Thr Glu
 35 40 45
 Cys Thr Lys Met Phe Ser Asn Gln Ser Arg Ser Pro Ile Thr Ser Ala
 50 55 60
 Ala Gly Phe Pro Glu Ile Arg Ala Cys Val Lys Ser Gly Thr Cys Phe
 65 70 75 80
 Ala Glu

<210>1104

<211>275

<212>PRT

<213>Chlamydia pneumoniae

<400>1104

Ser Xaa Cys Ala Ser Lys Ala Leu Asn Val Pro Ile Val Ile Ser Gln
 1 5 10 15
 Gly Ile Leu Arg Pro Ala Ile Asp Glu Asp Gln Ala Gln Leu Phe Thr
 20 25 30
 Glu Arg Val Glu Glu Phe Pro Lys Glu Val Glu Trp Trp Glu Xaa Ala
 35 40 45
 Arg Cys Glu Ile Ser Ile Pro Ser Met Val Ile Pro Pro Asn Leu Gly
 50 55 60
 Ala Leu Phe Ile Lys Ser Gly Val Thr Leu Asn Asn Asp Leu Tyr Ile
 65 70 75 80
 Gln Gly Leu Ala Asp Ala Cys Met Lys Leu Gly Thr Gln Phe Tyr Asp
 85 90 95
 Glu Leu Ile Glu Asp Leu Ala Asp Ile Glu Glu Phe Tyr Asp His Ile
 100 105 110
 Ile Val Thr Pro Gly Ala Asn Ala Ser Ile Leu Pro Glu Leu Lys Asp
 115 120 125
 Met Pro Val Asn Lys Val Lys Gly Gln Leu Leu Glu Ile Ser Trp Pro
 130 135 140
 Lys Asp Leu Ala Met Leu Ser Phe Ser Ile Asn Ala His Lys Tyr Met
 145 150 155 160
 Val Ala Asn Thr Gln Lys Asn Thr Cys Ile Leu Gly Ala Thr Phe Glu
 165 170 175
 His Asn Gln Pro Glu Glu Thr Pro Asp Pro Ala Ile Ala Tyr Gln Glu
 180 185 190
 Ile Met Pro Pro Val Leu Ser Leu Phe Pro Gly Leu Lys Asp Ala Gln
 195 200 205
 Val Leu His Cys Tyr Ala Gly Met Arg Ser Ser Ser Lys Ser Arg Leu
 210 215 220
 Pro Val Ile Ser Arg Ile Arg Glu Lys Leu Trp Phe Leu Gly Gly Leu
 225 230 235 240

Gly Ser Lys Gly Leu Leu Tyr His Gly Ile Thr Gly Asp Met Leu Ala
 245 250 255
 Gln Ala Val Leu Arg Lys Ser Thr Ala Tyr Ile Ala Lys Glu Phe Leu
 260 265 270
 Phe Thr Ile
 275
 <210>1105
 <211>485
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>1105
 Met Thr Ser Arg Thr Lys Ser Ser Lys Asn Leu Gly Thr Ile Ala Leu
 1 5 10 15
 Ala Gly Met Val Val Ser Ser Ile Ile Gly Gly Gly Ile Phe Ser Leu
 20 25 30
 Pro Gln Asn Met Ala Ala Thr Ala Gly Ala Gly Ala Val Ile Leu Ser
 35 40 45
 Trp Ile Leu Thr Gly Phe Gly Met Phe Phe Ile Ala Asn Thr Phe Arg
 50 55 60
 Ile Leu Ser Thr Ile Arg Pro Asp Leu Lys Glu Gly Ile Tyr Met Tyr
 65 70 75 80
 Ser Arg Glu Gly Phe Gly Pro Tyr Ile Gly Phe Thr Ile Gly Trp Gly
 85 90 95
 Tyr Trp Leu Cys Gln Ile Phe Gly Asn Val Gly Tyr Ala Val Ile Thr
 100 105 110
 Met Asp Ala Leu Asn Tyr Phe Phe Pro Pro Tyr Phe Gln Gly Gly Asn
 115 120 125
 Thr Leu Pro Ala Ile Leu Gly Gly Ser Ile Leu Ile Trp Val Phe Asn
 130 135 140
 Phe Ile Val Leu Lys Gly Ile Arg Gln Ala Ser Ile Ile Asn Val Ile
 145 150 155 160
 Gly Thr Ile Phe Lys Ile Ile Pro Leu Ile Ile Phe Ile Ile Leu Thr
 165 170 175
 Ala Phe Phe Phe Lys Leu Ala Val Phe Lys Thr Asp Phe Trp Gly His
 180 185 190
 Ala Val Thr Lys Ala Gln Pro Ser Leu Gly Ser Val Ser Ser Gln Leu
 195 200 205
 Lys Gly Thr Met Leu Val Thr Leu Trp Ala Phe Ile Gly Ile Glu Gly
 210 215 220
 Ala Val Val Met Ser Gly Arg Ala Lys Asn Pro Leu Ser Val Gly Gln
 225 230 235 240
 Ala Thr Val Leu Gly Phe Leu Gly Cys Leu Thr Ile Tyr Ile Leu Phe
 245 250 255
 Ser Leu Leu Pro Phe Gly Ser Leu Phe Gln His Gln Leu Ala Asn Ile
 260 265 270
 Pro Asn Pro Ser Thr Ala Gly Val Leu Asp Ile Leu Val Gly Lys Trp
 275 280 285
 Gly Glu Val Leu Met Asn Val Gly Leu Ile Ile Ala Val Leu Ser Ser
 290 295 300
 Trp Leu Ser Trp Thr Ile Ile Val Ala Glu Ile Pro Phe Ser Ala Ala
 305 310 315 320
 Lys Asn Gly Thr Phe Pro Glu Ile Phe Thr Ile Glu Asn Lys Glu Lys
 325 330 335
 Ser Pro Ser Val Ser Leu Tyr Ile Thr Ser Ser Val Met Gln Leu Ala
 340 345 350
 Met Leu Leu Val Tyr Phe Ser Ser Asn Ala Trp Asn Thr Met Leu Ser
 355 360 365
 Ile Thr Gly Val Met Val Leu Pro Ala Tyr Leu Ala Ser Ala Ala Phe
 370 375 380
 Leu Phe Lys Leu Ser Lys Ser Lys Thr Tyr Pro Lys Lys Gly Ser Ile
 385 390 395 400
 Lys Ala Pro Leu Ala Met Ile Thr Gly Ile Leu Gly Val Val Tyr Ser
 405 410 415
 Leu Trp Leu Ile Tyr Ala Gly Gly Leu Lys Tyr Leu Phe Met Ala Leu

420 425 430
 Val Leu Leu Ala Leu Gly Ile Pro Phe Tyr Ile Asp Ala Gly Lys Lys
 435 440 445
 Lys Lys Asn Ala Lys Thr Phe Phe Ala Lys Lys Glu Ile Val Gly Met
 450 455 460
 Thr Phe Ile Gly Leu Leu Ala Leu Thr Ala Ile Phe Leu Phe Ser Thr
 465 470 475 480
 Gly Arg Ile Lys Ile
 485

<210>1106

<211>196

<212>PRT

<213>Chlamydia pneumoniae

<400>1106

Leu Met Ala Tyr Gly Thr Arg Tyr Pro Thr Leu Ala Phe His Thr Gly
 1 5 10 15
 Gly Ile Gly Glu Ser Asp Asp Gly Met Pro Pro Gln Pro Phe Glu Thr
 20 25 30
 Phe Cys Tyr Asp Ser Ala Leu Leu Gln Ala Lys Ile Glu Asn Phe Asn
 35 40 45
 Ile Val Pro Tyr Thr Ser Val Leu Pro Lys Glu Leu Phe Gly Asn Ile
 50 55 60
 Val Pro Val Asp Thr Cys Val Lys Ser Phe Lys His Gly Ala Val Leu
 65 70 75 80
 Glu Val Ile Met Ala Gly Arg Gly Ala Ala Leu Ser Asp Gly Thr His
 85 90 95
 Ala Ile Ala Thr Gly Ile Gly Ile Cys Trp Gly Lys Asp Lys Asn Gly
 100 105 110
 Glu Leu Ile Gly Gly Trp Ala Ala Glu Tyr Val Glu Phe Phe Pro Thr
 115 120 125
 Trp Ile Asn Asp Glu Ile Ala Glu Thr His Ala Lys Met Trp Leu Lys
 130 135 140
 Lys Ser Leu Gln His Glu Leu Asp Leu Arg Ser Ile Ala Lys His Ser
 145 150 155 160
 Glu Phe Gln Phe Phe His Asn Tyr Ile Asn Ile Lys Gln Lys Phe Gly
 165 170 175
 Phe Cys Leu Thr Ala Leu Gly Phe Leu Asn Phe Glu Asn Ala Glu Pro
 180 185 190
 Ala Lys Val Asn
 195

<210>1107

<211>165

<212>PRT

<213>Chlamydia pneumoniae

<400>1107

Gln Lys Ala Thr Tyr Asn Phe Tyr Gly Tyr Ala Ser Trp Thr Pro Lys
 1 5 10 15
 Pro Ser Cys Gly Asp Gly Gln Tyr Ser Val Leu Leu Tyr Ser Thr Arg
 20 25 30
 Lys Val Pro Glu Gln Asn Ser Gln Val Thr Gly Trp Ser Leu Asn Ala
 35 40 45
 Ala Gln His Ile His Glu Lys Leu Tyr Leu Phe Gly Arg Ile Asn Gly
 50 55 60
 Ala Thr Gly Thr Ala Leu Pro Ile Asn Arg Ser Tyr Val Leu Gly Leu
 65 70 75 80
 Val Ser Glu Asn Pro Leu Asn Arg His Ser Gln Asp Leu Leu Gly Ile
 85 90 95
 Gly Phe Ala Thr Asn Lys Val Asn Ala Lys Ala Ile Ser Asn Val Asn
 100 105 110
 Lys Leu Arg Arg Tyr Glu Ser Val Met Glu Ala Phe Ala Thr Ile Gly
 115 120 125
 Phe Gly Pro Tyr Ile Ser Leu Thr Pro Asp Phe Gln Leu Tyr Ile His
 130 135 140
 Pro Ala Leu Arg Pro Glu Arg Arg Thr Ser Gln Val Tyr Gly Leu Arg

145 150 155 160
Ala Asn Leu Ser Leu
165
<210>1108
<211>354
<212>PRT
<213>Chlamydia pneumoniae
<400>1108
Asn Asn Lys Lys Lys Asp Tyr Ser Gly Glu Phe Leu Thr Thr Asp Thr
1 5 10 15
Val Asp Ser Ile Ala Phe Leu Ser Ser Glu Glu Asn Phe Cys Tyr Ile
20 25 30
Lys Thr Ile Leu Phe Phe Arg Val Lys Lys Lys His Tyr Ala Phe Phe
35 40 45
Tyr Gly Glu Phe Met Ile Xaa Phe Arg Phe Leu Leu Leu Ser Gly Leu
50 55 60
Cys Ala Leu Gly Ile Ser Ser Tyr Ala Glu Thr Pro Lys Glu Thr Thr
65 70 75 80
Gly His Tyr His Arg Tyr Lys Ala Arg Ile Gln Lys Lys His Pro Glu
85 90 95
Ser Ile Lys Glu Ser Ala Pro Ser Glu Thr Pro His His Asn Ser Leu
100 105 110
Leu Ser Pro Val Thr Asn Ile Phe Cys Ser His Pro Trp Lys Asp Gly
115 120 125
Ile Ser Val Ser Asn Leu Leu Thr Ser Val Glu Lys Ala Thr Asn Thr
130 135 140
Gln Ile Ser Leu Asp Phe Ser Ile Leu Pro Gln Trp Phe Tyr Pro His
145 150 155 160
Lys Ala Leu Gly Gln Thr Gln Ala Leu Glu Ile Pro Ser Trp Gln Phe
165 170 175
Tyr Phe Ser Pro Ser Thr Thr Trp Thr Leu Tyr Asp Ser Pro Thr Ala
180 185 190
Gly Gln Gly Ile Val Asp Phe Ser Tyr Thr Leu Ile His Tyr Trp Gln
195 200 205
Thr Asn Gly Val Asp Ala Asn Gln Ala Ala Gly Thr Ala Ser Ser Met
210 215 220
Asn Asp Tyr Ser Asn Arg Glu Asn Asn Leu Ala Gln Leu Thr Phe Ser
225 230 235 240
Gln Thr Phe Pro Gly Asp Phe Leu Thr Leu Ala Ile Gly Gln Tyr Ser
245 250 255
Leu Tyr Ala Ile Asp Gly Thr Leu Tyr Asp Asn Asp Gln Tyr Ser Gly
260 265 270
Phe Ile Ser Tyr Ala Leu Ser Gln Asn Ala Ser Ala Thr Tyr Ser Leu
275 280 285
Gly Ser Thr Gly Ala Tyr Leu Gln Phe Thr Pro Asn Ser Glu Ile Lys
290 295 300
Val Gln Leu Gly Phe Gln Asp Ser Tyr Asn Ile Asp Gly Thr Asn Phe
305 310 315 320
Ser Ile Tyr Asn Leu Thr Lys Ser Asn Ile Gln Leu Leu Arg Leu Arg
325 330 335
Leu Leu Asp Ser Lys Thr Phe Val Trp Arg Trp Thr Val Leu Cys Ile
340 345 350
Ala Leu

<210>1109

<211>286

<212>PRT

<213>Chlamydia pneumoniae

<400>1109

Lys Thr Ser Trp Gln Lys Tyr Lys Lys Tyr Leu Ser Tyr Ser Ile Leu
1 5 10 15
Val Gln Lys Ile Ala Arg Tyr Val Met Lys Thr Trp Leu Phe Phe Thr
20 25 30
Phe Leu Phe Ser Cys Ser Ser Phe Tyr Ala Ser Cys Arg Tyr Ala Glu

35 40
 Val Arg Ser Ile His Glu Val Ala Gly Asp Ile Leu Tyr Asp Glu Glu
 50 55 60
 Asn Phe Trp Leu Ile Leu Asp Leu Asp Asp Thr Leu Leu Gln Gly Gly
 65 70 75 80
 Glu Ala Leu Ser His Ser Ile Trp Lys Ser Lys Ala Ile Gln Gly Leu
 85 90 95
 Gln Lys Gln Gly Thr Pro Glu Gln Glu Ala Trp Glu Ala Val Val Pro
 100 105 110
 Phe Trp Ile Glu Ile Gln Glu Met Gly Thr Val Gln Pro Ile Glu Ser
 115 120 125
 Ala Ile Phe Leu Leu Ile Glu Lys Ile Gln Lys Gln Gly Lys Thr Thr
 130 135 140
 Phe Val Tyr Thr Glu Arg Pro Lys Thr Ala Lys Asp Leu Thr Leu Lys
 145 150 155 160
 Gln Leu His Met Leu Asn Val Ser Leu Glu Asp Thr Ala Pro Gln Pro
 165 170 175
 Gln Ala Pro Leu Pro Lys Asn Leu Leu Tyr Thr Ser Gly Ile Leu Phe
 180 185 190
 Ser Gly Asp Tyr His Lys Gly Pro Gly Leu Asp Leu Phe Leu Glu Ile
 195 200 205
 Cys Thr Pro Leu Pro Ala Lys Ile Ile Tyr Ile Asp Asn Gln Lys Glu
 210 215 220
 Asn Val Leu Arg Ile Gly Asp Leu Cys Gln Lys Tyr Gly Ile Ala Tyr
 225 230 235 240
 Phe Gly Ile Thr Tyr Lys Ala Gln Glu Leu His Pro Pro Ile Tyr Phe
 245 250 255
 Asp Asn Ile Ala Gln Val Gln Tyr Asn Tyr Ser Lys Lys Leu Leu Ser
 260 265 270
 Asn Glu Ala Ala Ala Leu Leu Leu Arg His Gln Met His Glu
 275 280 285

<210>1110

<211>504

<212>PRT

<213>Chlamydia pneumoniae

<400>1110

Val Val Gln Leu Pro Leu Met Val Pro Ile Val His Leu Gln Ile Trp
 1 5 10 15
 Arg Phe Ser Met Ile Tyr Tyr Gly Val Ser Val Met Leu Cys Ala Thr
 20 25 30
 Val Ser Gly Pro Ser Phe Cys Glu Ala Lys Gln Gln Ile Leu Lys Ser
 35 40 45
 Leu His Leu Val Asp Ile Ile Glu Leu Arg Leu Asp Leu Ile Asn Glu
 50 55 60
 Leu Asp Asp Gln Glu Leu His Thr Leu Ile Thr Thr Ala Gln Asn Pro
 65 70 75 80
 Ile Leu Thr Phe Arg Gln His Lys Glu Met Ser Thr Ala Leu Trp Ile
 85 90 95
 Gln Lys Leu Tyr Ser Leu Ala Lys Leu Glu Pro Lys Trp Met Asp Ile
 100 105 110
 Asp Val Ser Leu Pro Lys Thr Ala Leu Gln Thr Ile Arg Lys Ser His
 115 120 125
 Pro Lys Ile Lys Leu Ile Leu Ser Tyr His Thr Asp Lys Asn Glu Asp
 130 135 140
 Leu Asp Ala Ile Tyr Asn Glu Met Leu Ala Thr Pro Ala Glu Ile Tyr
 145 150 155 160
 Lys Ile Val Leu Ser Pro Glu Asn Ser Ser Glu Ala Leu Asn Tyr Ile
 165 170 175
 Lys Lys Ala Arg Leu Leu Pro Lys Pro Ser Thr Val Leu Cys Met Gly
 180 185 190
 Thr His Gly Leu Pro Ser Arg Val Leu Ser Pro Leu Ile Ser Asn Ala
 195 200 205
 Met Asn Tyr Ala Ala Gly Ile Ser Ala Pro Gln Val Ala Pro Gly Gln
 210 215 220

Pro Lys Leu Glu Glu Leu Leu Ser Tyr Asn Tyr Ser Lys Leu Ser Glu
 225 230 235 240
 Lys Ser His Ile Tyr Gly Leu Ile Gly Asp Pro Val Asp Arg Ser Ile
 245 250 255
 Ser His Leu Ser His Asn Phe Leu Leu Ser Lys Leu Ser Leu Asn Ala
 260 265 270
 Thr Tyr Ile Lys Phe Pro Val Thr Ile Gly Glu Val Val Thr Phe Phe
 275 280 285
 Ser Ala Ile Arg Asp Leu Pro Phe Ser Gly Leu Ser Val Thr Met Pro
 290 295 300
 Leu Lys Thr Ala Ile Phe Asp His Val Asp Ala Leu Asp Ala Ser Ala
 305 310 315 320
 Gln Leu Cys Glu Ser Ile Asn Thr Leu Val Phe Arg Asn Gln Lys Ile
 325 330 335
 Leu Gly Tyr Asn Thr Asp Gly Glu Gly Val Ala Lys Leu Leu Lys Gln
 340 345 350
 Lys Asn Ile Ser Val Asn Asn Lys His Ile Ala Ile Val Gly Ala Gly
 355 360 365
 Gly Ala Ala Lys Ala Ile Ala Ala Thr Leu Ala Met Gln Gly Ala Asn
 370 375 380
 Leu His Ile Phe Asn Arg Thr Leu Ser Ser Ala Ala Leu Ala Thr
 385 390 395 400
 Cys Cys Lys Gly Lys Ala Tyr Pro Leu Gly Ser Leu Glu Asn Phe Lys
 405 410 415
 Thr Ile Asp Ile Ile Ile Asn Cys Leu Pro Pro Glu Val Thr Phe Pro
 420 425 430
 Trp Arg Phe Pro Pro Ile Val Met Asp Ile Asn Thr Lys Pro His Pro
 435 440 445
 Ser Pro Tyr Leu Glu Arg Ala Gln Lys His Gly Ser Leu Ile Ile His
 450 455 460
 Gly Tyr Glu Met Phe Ile Glu Gln Ala Leu Leu Gln Phe Ala Leu Trp
 465 470 475 480
 Phe Pro Asp Phe Leu Thr Pro Glu Ser Cys Asp Ser Phe Arg Asn Tyr
 485 490 495
 Val Lys Asn Phe Met Ala Lys Val
 500

<210>1111

<211>384

<212>PRT

<213>Chlamydia pneumoniae

<400>1111

Met Leu Gln Thr Ile Met Ser Glu Thr Ile Ile Thr Thr Pro His Val
 1 5 10 15
 Val Lys Leu Ile Ser Asn Phe Phe Gln Lys Lys Leu Phe Ser Ser Ile
 20 25 30
 Ser Thr Ala Tyr Pro Leu Val Ile Ile Thr Asp Val Ser Val Gln Gln
 35 40 45
 His Leu Leu Gly Pro Ile Leu Asp His Ile Lys Met Leu Gly Tyr Gln
 50 55 60
 Val Ile Val Leu Thr Phe Pro Pro Gly Glu Pro Asn Lys Thr Trp Glu
 65 70 75 80
 Thr Phe Ile Ser Leu Gln Tyr Gln Leu Val Asp Gln Asn Ile Ser Pro
 85 90 95
 Lys Ser Ser Ile Ile Gly Ile Gly Gly Gly Thr Val Leu Asp Met Thr
 100 105 110
 Gly Phe Leu Ala Ala Thr Tyr Cys Arg Gly Leu Pro Leu Tyr Leu Ile
 115 120 125
 Pro Thr Thr Ile Thr Ala Met Val Asp Thr Ser Ile Gly Gly Lys Asn
 130 135 140
 Gly Ile Asn Leu Arg Gly Ile Lys Asn Arg Leu Gly Thr Phe Tyr Leu
 145 150 155 160
 Pro Lys Glu Val Trp Met Cys Pro Gln Phe Leu Ser Thr Leu Pro Arg
 165 170 175
 Glu Glu Trp Tyr His Gly Ile Ala Glu Ala Ile Lys His Gly Phe Ile

Thr Asp Pro Phe Val Met Glu Gly Glu Asn Ile Thr Leu Lys Ser Asn
 275 280 285
 Asn Cys Gly Gly Thr Leu Gly Gly Ile Thr Ile Gly Val Pro Ile Glu
 290 295 300
 Gly Arg Ile Ala Phe Lys Pro Thr Ser Ser Ile Lys Arg Pro Cys Ala
 305 310 315 320
 Thr Val Thr Lys Thr Lys Lys Glu Thr Thr Tyr Arg Thr Pro Gln Thr
 325 330 335
 Gly Arg His Asp Pro Cys Val Ala Ile Arg Ala Val Pro Val Val Glu
 340 345 350
 Ala Met Ile Asn Leu Val Leu Ala Asp Leu Val Leu Tyr Gln Arg Cys
 355 360 365
 Ser Lys Leu Ser Cys Gln Arg Gln
 370 375

<210>1113

<211>184

<212>PRT

<213>Chlamydia pneumoniae

<400>1113

Trp Lys Leu Glu Leu Arg Asn Val Met Thr Ile Ile Leu Cys Gly Leu
 1 5 10 15
 Pro Thr Ser Gly Lys Ser Ser Leu Gly Lys Ala Leu Ala Lys Phe Leu
 20 25 30
 Asn Leu Pro Phe Tyr Asp Leu Asp Asp Leu Ile Val Ser Asn Tyr Ser
 35 40 45
 Ser Ala Leu Tyr Ser Ser Ser Ala Glu Ile Tyr Lys Ala Tyr Gly Asp
 50 55 60
 Gln Lys Phe Ser Glu Cys Glu Ala Arg Ile Leu Glu Thr Leu Pro Pro
 65 70 75 80
 Glu Asp Ala Leu Ile Ser Leu Gly Gly Gly Thr Leu Met Tyr Glu Ala
 85 90 95
 Ser Tyr Arg Ala Ile Gln Thr Arg Gly Ala Leu Val Phe Leu Ser Val
 100 105 110
 Glu Leu Pro Leu Ile Tyr Glu Arg Leu Glu Lys Arg Gly Leu Pro Glu
 115 120 125
 Arg Leu Lys Glu Ala Met Lys Thr Lys Pro Leu Ser Glu Ile Leu Thr
 130 135 140
 Glu Arg Ile Asp Arg Met Lys Glu Ile Ala Asp Tyr Ile Phe Pro Val
 145 150 155 160
 Asp His Val Asp His Ser Ser Lys Ser Ser Leu Glu Gln Ala Ser Gln
 165 170 175
 Asp Leu Ile Thr Leu Leu Lys Ser
 180

<210>1114

<211>449

<212>PRT

<213>Chlamydia pneumoniae

<400>1114

Val Cys Phe Thr Met Leu Thr Tyr Lys Val Ser Pro Ser Ser Val Tyr
 1 5 10 15
 Gly Asn Ala Phe Ile Pro Ser Ser Lys Ser His Thr Leu Arg Ala Ile
 20 25 30
 Leu Trp Ala Ser Val Ala Glu Gly Lys Ser Thr Ile Tyr Asn Tyr Leu
 35 40 45
 Asp Ser Pro Asp Thr Glu Ala Met Ile Cys Ala Cys Lys Gln Met Gly
 50 55 60
 Ala Ser Ile Lys Lys Phe Pro Gln Ile Leu Glu Ile Val Gly Asn Pro
 65 70 75 80
 Leu Ala Ile Phe Pro Lys Tyr Thr Leu Ile Asp Ala Gly Asn Ser Gly
 85 90 95
 Ile Val Leu Arg Phe Met Thr Ala Leu Ala Cys Val Phe Ser Lys Glu
 100 105 110
 Ile Thr Val Thr Gly Ser Ser Gln Leu Gln Arg Arg Pro Met Ala Pro
 115 120 125

Leu Leu Gln Ala Leu Arg Asn Phe Gly Ala Ser Phe Phe Ser Ser
 130 135 140
 Asp Lys Ser Val Leu Pro Phe Thr Met Ser Gly Pro Leu Arg Ser Ala
 145 150 155 160
 Tyr Ser Asp Val Glu Gly Ser Asp Ser Gln Phe Ala Ser Ala Leu Ala
 165 170 175
 Val Ala Cys Ser Leu Ala Glu Gly Pro Cys Ser Phe Thr Ile Ile Glu
 180 185 190
 Pro Lys Glu Arg Pro Trp Phe Asp Leu Ser Leu Trp Trp Leu Glu Lys
 195 200 205
 Leu His Leu Pro Tyr Ser Cys Ser Asp Thr Thr Tyr Ser Phe Pro Gly
 210 215 220
 Ser Ser His Pro Gln Gly Phe Ser Tyr His Val Thr Gly Asp Phe Ser
 225 230 235 240
 Ser Ala Ala Phe Ile Ala Ala Ala Ala Leu Leu Ser Lys Ser Leu Gln
 245 250 255
 Pro Ile Arg Leu Arg Asn Leu Asp Ile Leu Asp Ile Gln Gly Asp Lys
 260 265 270
 Ile Phe Phe Ser Leu Met Gln Asn Leu Gly Ala Ser Ile Gln Tyr Asp
 275 280 285
 Asn Glu Glu Ile Leu Val Phe Pro Ser Ser Phe Ser Gly Gly Ser Ile
 290 295 300
 Asp Met Asp Gly Cys Ile Asp Ala Leu Pro Ile Leu Thr Val Leu Cys
 305 310 315 320
 Cys Phe Ala Asp Ser Pro Ser His Leu Tyr Asn Ala Arg Ser Ser Lys
 325 330 335
 Asp Lys Glu Ser Asp Arg Ile Leu Ala Ile Thr Glu Glu Leu Gln Lys
 340 345 350
 Met Gly Ala Cys Ile Gln Pro Thr His Asp Gly Leu Leu Val Asn Pro
 355 360 365
 Ser Pro Leu Tyr Gly Ala Val Leu Asp Ser His Asp Asp His Arg Ile
 370 375 380
 Ala Met Ala Leu Thr Ile Ala Ala Leu Tyr Ala Ser Gly Asp Ser Arg
 385 390 395 400
 Ile His Asn Thr Ala Cys Val Arg Lys Thr Phe Pro Asn Phe Val Gln
 405 410 415
 Thr Leu Asn Ile Met Glu Ala Arg Ile Glu Glu Cys His Asp Asn Tyr
 420 425 430
 Ser Met Trp Ser Thr His Lys Arg Lys Val Phe Ala Arg Glu Ser Phe
 435 440 445
 Gly

<210>1115

<211>96

<212>PRT

<213>Chlamydia pneumoniae

<400>1115

Arg Cys Glu Gly Glu Ser Ala Lys Gln Gln Arg Thr Val Arg Met Gly
 1 5 10 15
 Arg Ala Ser Ile Gln Pro Ser Ile Ser Ile Glu Pro Pro Glu Asn Asp
 20 25 30
 Glu Gly Asn Thr Lys Ile Ser Ser Leu Ser Tyr Cys Ile Glu Ala Pro
 35 40 45
 Lys Phe Cys Met Arg Glu Lys Lys Ile Leu Ser Pro Trp Ile Ser Lys
 50 55 60
 Met Ser Lys Leu Arg Arg Ile Gly Trp Ser Asp Phe Glu Ser Arg
 65 70 75 80
 Ala Ala Ala Ala Met Lys Ala Ala Leu Leu Lys Ser Pro Val Thr Trp
 85 90 95

<210>1116

<211>283

<212>PRT

<213>Chlamydia pneumoniae

<400>1116

Arg Pro Ser Gln Ser Leu Phe Leu Arg Thr Trp Ser Pro Ser Ser Ser
 1 5 10 15
 Phe Arg Glu His Thr Val Cys Ala Ala Pro Leu Leu Tyr Pro Arg Arg
 20 25 30
 Arg Ser Pro Asp Tyr Leu Phe Ser Pro Thr Gly Cys Pro Met Ser Thr
 35 40 45
 Thr Thr Val Lys His Phe Ile His Thr Ala Ser Arg Trp Glu Pro Val
 50 55 60
 Leu Lys Glu Ile Val Ala Ser Asn Tyr Trp His Ala Gln Trp Ile Asn
 65 70 75 80
 Thr Leu Ser Phe Leu Glu Asn Ser Gly Ala Lys Lys Ile Ser Ala Ser
 85 90 95
 Glu His Pro Thr Glu Val Lys Glu Glu Val Leu Lys His Ala Ala Glu
 100 105 110
 Glu Phe Arg His Gly His Tyr Leu Lys Thr Gln Ile Ser Arg Ile Ser
 115 120 125
 Glu Thr Ser Leu Pro Asp Tyr Thr Ser Lys Asn Leu Leu Gly Gly Leu
 130 135 140
 Leu Thr Lys Tyr Tyr Leu His Leu Leu Asp Leu Arg Thr Cys Arg Val
 145 150 155 160
 Leu Glu Asn Glu Tyr Ser Leu Ser Gly Gln Thr Leu Lys Thr Ala Ala
 165 170 175
 Tyr Ile Leu Val Thr Tyr Ala Ile Glu Leu Arg Ala Ser Glu Leu Tyr
 180 185 190
 Pro Leu Tyr His Asp Ile Leu Lys Glu Ala Gln Ser Lys Ile Thr Val
 195 200 205
 Lys Ser Ile Ile Leu Glu Glu Gln Gly His Leu Gln Glu Met Glu Arg
 210 215 220
 Glu Leu Lys Asp Leu Pro His Gly Glu Gly Thr Leu Arg Leu Cys Leu
 225 230 235 240
 Pro Ile Arg Arg Gly Ala Leu Leu Ala Val Cys Arg Glu Ile Arg Thr
 245 250 255
 Asn Asp Leu Arg Ser Phe Leu Asp Phe Tyr Lys Val Leu Glu Phe Phe
 260 265 270
 Leu Asp Asp Lys Ser Glu Val Arg Gln Ile Thr
 275 280

<210>1117

<211>505

<212>PRT

<213>Chlamydia pneumoniae

<400>1117

Leu Val Met Phe Leu Asp Phe Ser Glu Pro Ser Ile Ser Arg Lys Tyr
 1 5 10 15
 Gln Ser His Leu Phe Asn Gly Arg Ser Asn Ala Leu Thr Lys Pro Gln
 20 25 30
 Tyr Leu Arg Tyr Gly Gly Lys Trp Val Ser Arg Gly Arg Ala Leu
 35 40 45
 Ala Asn Ser Arg Asn Gln Ala Ser Tyr Asn Arg Asp Ser Cys Gln Gly
 50 55 60
 Lys Arg Asn His Lys Asp Asn His Lys Leu Leu Cys Arg Thr Met Glu
 65 70 75 80
 Gly Ser Met Asp Lys Gln Ser Ser Gly Asn Ser Gly Cys Ile Trp His
 85 90 95
 Pro Phe Thr Gln Ser Ala Leu Asp Ser Thr Pro Ile Lys Ile Val Arg
 100 105 110
 Gly Glu Gly Ala Tyr Leu Tyr Ala Glu Ser Gly Thr Arg Tyr Leu Asp
 115 120 125
 Ala Ile Ser Ser Trp Trp Cys Asn Leu His Gly His Gly His Pro Tyr
 130 135 140
 Ile Thr Lys Lys Leu Cys Glu Gln Ala Gln Lys Leu Glu His Val Ile
 145 150 155 160
 Phe Ala Asn Phe Thr His Glu Pro Ala Leu Glu Leu Val Ser Lys Leu
 165 170 175
 Ala Pro Leu Leu Pro Glu Gly Leu Glu Arg Phe Phe Phe Ser Asp Asn

Ser Arg Asn Leu Asn Ile Leu Gly Met Val Val Asn Gly Tyr Pro Glu
 145 150 155 160
 Asp Glu Glu His Trp Leu Thr Gln Glu Ile Lys Leu Pro Ile Ile Gly
 165 170 175
 Thr Leu Ala Lys Glu Lys Glu Ile Thr Lys Thr Ile Ile Ser Cys Tyr
 180 185 190
 Ala Glu Gln Trp Lys Glu Val Trp Thr Ser Asn His Gln Gly Ile Gln
 195 200 205
 Gly Val Ser Gly Thr Pro Ser Leu Asn Leu His
 210 215
 <210>1119
 <211>383
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>1119
 Pro Met Leu Cys Gln Gln Phe Leu Ile Glu Ala Leu Ala Arg Arg Lys
 1 5 10 15
 Ser Lys His Thr Tyr Arg Ser Leu Ser Leu Asn Ser His Leu Ile Asp
 20 25 30
 Phe Thr Ser Asn Asp Tyr Leu Gly Phe Ala Ser Ser Pro Glu Leu Arg
 35 40 45
 Lys Glu Tyr Ile Thr Lys Leu His Ala Ile Glu Ser Leu Gly Ala Thr
 50 55 60
 Gly Ser Arg Leu Leu Thr Gly His Ser Gln Leu Cys Gln Arg Ile Glu
 65 70 75 80
 Glu Gln Leu Ala Ala Tyr His Asn Phe Glu Ser Cys Leu Ile Phe Asn
 85 90 95
 Thr Gly Tyr Thr Ala Asn Leu Gly Leu Tyr Ala Leu Ala Thr Asp
 100 105 110
 Gln Asp Arg Ile Leu His Asp Leu Tyr Ile His Ala Ser Ile Tyr Asp
 115 120 125
 Gly Ile Arg Leu Ser Lys Ala Gln Ser Phe Pro Phe Asn His Asn Asp
 130 135 140
 Leu Asn His Leu Glu Lys Arg Leu Ala Ser Ser His Leu Gly Arg Thr
 145 150 155 160
 Phe Val Cys Val Glu Ser Val Tyr Ser Leu His Gly Ser Val Ala Pro
 165 170 175
 Leu Gln Ala Ile Ser Glu Leu Cys Glu Arg Tyr Ser Ala Tyr Leu Ile
 180 185 190
 Val Asp Glu Ala His Ala Val Gly Val Phe Gly Asp Gln Gly Glu Gly
 195 200 205
 Leu Val Ser Ala Leu Gly Leu Gln Asp Lys Val Leu Ala Thr Val Tyr
 210 215 220
 Thr Phe Gly Lys Ala Leu Gly Thr His Gly Ala Ala Ile Ala Gly Ser
 225 230 235 240
 Ser Ile Leu Lys Asp Tyr Leu Ile Asn Phe Cys Arg Pro Phe Ile Tyr
 245 250 255
 Thr Thr Ala Gln Pro Pro His Ala Leu Thr Ala Ile Glu Leu Ala Tyr
 260 265 270
 Glu His Asn Gln Arg Ala Phe Asn Gln Arg Glu His Leu Ser Ala Leu
 275 280 285
 Ile His His Phe Arg Glu Lys Ala Gln Asn Leu Gly Leu Gln Leu Met
 290 295 300
 Lys Asp Asn Thr Thr Thr Pro Ile Gln Ser Ile Cys Val Ser Gly Ser
 305 310 315 320
 His Arg Ala Arg Gln Ala Ala Leu Gln Ile Gln Asn Ser Gly Tyr Asp
 325 330 335
 Val Arg Pro Ile Val Ser Pro Thr Val Lys Gln Arg Glu Glu Leu Leu
 340 345 350
 Arg Ile Cys Leu His Ala Phe Asn Thr Lys Asn Glu Ile Asp His Leu
 355 360 365
 Leu His Thr Leu Glu Gln Ile Phe Leu Cys Asn Val Ser Ser Leu
 370 375 380
 <210>1120

<211>334

<212>PRT

<213>Chlamydia pneumoniae

<400>1120

Ala Lys His Met Arg Glu Glu Thr Val Ser Trp Ser Leu Glu Asp Ile
1 5 10 15
Arg Glu Ile Tyr His Thr Pro Val Phe Glu Leu Ile His Lys Ala Asn
20 25 30
Ala Ile Leu Arg Ser Asn Phe Leu His Ser Glu Leu Gln Thr Cys Tyr
35 40 45
Leu Ile Ser Ile Lys Thr Gly Gly Cys Val Glu Asp Cys Ala Tyr Cys
50 55 60
Ala Gln Ser Ser Arg Tyr His Thr His Val Thr Pro Glu Pro Met Met
65 70 75 80
Lys Ile Val Asp Val Val Glu Arg Ala Lys Arg Ala Val Glu Leu Gly
85 90 95
Ala Thr Arg Val Cys Leu Gly Ala Ala Trp Arg Asn Ala Lys Asp Asp
100 105 110
Arg Tyr Phe Asp Arg Val Leu Ala Met Val Lys Ser Ile Thr Asp Leu
115 120 125
Gly Ala Glu Val Cys Cys Ala Leu Gly Met Leu Ser Glu Glu Gln Ala
130 135 140
Lys Lys Leu Tyr Asp Ala Gly Leu Tyr Ala Tyr Asn His Asn Leu Asp
145 150 155 160
Ser Ser Pro Glu Phe Tyr Glu Thr Ile Ile Thr Thr Arg Ser Tyr Glu
165 170 175
Asp Arg Leu Asn Thr Leu Asp Val Val Asn Lys Ser Gly Ile Ser Thr
180 185 190
Cys Cys Gly Gly Ile Val Gly Met Gly Glu Ser Glu Glu Asp Arg Ile
195 200 205
Lys Leu Leu His Val Leu Ala Thr Arg Asp His Ile Pro Glu Ser Val
210 215 220
Pro Val Asn Leu Leu Trp Pro Ile Asp Gly Thr Pro Leu Gln Asp Gln
225 230 235 240
Pro Pro Ile Ser Phe Trp Glu Val Leu Arg Thr Ile Ala Thr Ala Arg
245 250 255
Val Val Phe Pro Arg Ser Met Val Arg Leu Ala Ala Gly Arg Ala Phe
260 265 270
Leu Thr Val Glu Gln Gln Thr Leu Cys Phe Leu Ala Gly Ala Asn Ser
275 280 285
Ile Phe Tyr Gly Asp Lys Leu Leu Thr Val Glu Asn Asn Asp Ile Asp
290 295 300
Glu Asp Ala Glu Met Ile Lys Leu Leu Gly Leu Ile Pro Arg Pro Ser
305 310 315 320
Phe Gly Ile Glu Arg Gly Asn Pro Cys Tyr Ala Asn Asn Ser
325 330

<210>1121

<211>259

<212>PRT

<213>Chlamydia pneumoniae

<400>1121

Ser Glu Phe Met Val Ser Thr Pro Phe Leu Thr Val Phe Ser Met Glu
1 5 10 15
Lys Leu Leu Ser Lys Ile Phe Leu Asp Tyr Leu Glu Ala Phe Gly Leu
20 25 30
Leu Ser Asp Phe Leu Asp His Gln Ala Val Ile Lys Phe Phe Glu Leu
35 40 45
Glu Thr His Phe Ser Tyr Tyr Pro Val Ser Gly Phe Val Ala Pro His
50 55 60
Gln Tyr Leu Ser Leu Leu Gln Asp Arg Tyr Phe Pro Ile Ala Ser Val
65 70 75 80
Met Arg Thr Leu Asp Lys Asp Asn Phe Ser Leu Thr Pro Asp Leu Ile
85 90 95
His Asp Leu Leu Gly His Val Pro Trp Leu Leu His Pro Ser Phe Ser

100 105 110
 Glu Phe Phe Ile Asn Met Gly Arg Leu Phe Thr Lys Val Ile Glu Lys
 115 120 125
 Val Gln Ala Leu Pro Ser Lys Lys Gln Arg Ile Gln Thr Leu Gln Ser
 130 135 140
 Asn Leu Ile Ala Ile Val Arg Cys Phe Trp Phe Thr Val Glu Ser Gly
 145 150 155 160
 Leu Ile Glu Asn His Glu Gly Arg Lys Ala Tyr Gly Ala Val Leu Ile
 165 170 175
 Ser Ser Pro Gln Glu Leu Gly His Ala Phe Ile Asp Asn Val Arg Val
 180 185 190
 Leu Pro Leu Glu Leu Asp Gln Ile Ile Arg Leu Pro Phe Asn Thr Ser
 195 200 205
 Thr Pro Gln Glu Thr Leu Phe Ser Ile Arg His Phe Asp Glu Leu Val
 210 215 220
 Glu Leu Thr Ser Lys Leu Glu Trp Met Leu Asp Gln Gly Leu Leu Glu
 225 230 235 240
 Ser Ile Pro Leu Tyr Asn Gln Glu Lys Tyr Leu Ser Gly Phe Glu Val
 245 250 255
 Leu Cys Gln

<210>1122

<211>264

<212>PRT

<213>Chlamydia pneumoniae

<400>1122

Met Gly Ser Ser Met His Val Gly Val Ile Gly Cys Ser Gly Arg Thr
 1 5 10 15
 Gly Lys Val Ile Val Ser Ala Leu Glu Gln Ser Ser Glu Tyr Thr Leu
 20 25 30
 Gly Pro Gly Phe Ser Arg Ser Ser Ala Leu Thr Leu Phe Gln Val Ile
 35 40 45
 Ala His Asn Asp Val Leu Val Asp Phe Ser His Pro Leu Leu Thr Lys
 50 55 60
 Glu Val Val Ala His Leu Ile Ser Pro Lys Pro Leu Ile Ile Gly
 65 70 75 80
 Thr Thr Gly Phe Pro Gly Lys Cys Lys Glu Ala His Asp Ser Leu Glu
 85 90 95
 Glu Leu Thr His Ile Val Pro Val Val Val Cys Pro Asn Ala Ser Leu
 100 105 110
 Gly Ala Tyr Ile His Lys Arg Leu Val Met Leu Leu Ser Gln Leu Cys
 115 120 125
 Asn Pro Gln Phe Asp Ile Arg Ile Arg Glu Thr His His Arg Tyr Lys
 130 135 140
 Lys Asp Ser Leu Ser Gly Thr Ala Gln Asp Leu Leu Asp Thr Ile Gln
 145 150 155 160
 Gln Val Lys Gln Glu Asp Trp Gly Glu Glu Tyr Glu Val Gly Gln Arg
 165 170 175
 Asp Ser Ser Lys Lys Thr Ile Glu Val Gln Ser Ser Arg Val Gly Asp
 180 185 190
 Ile Pro Gly Glu His Glu Val Ala Phe Ile Ser Ser Gly Glu Gln Ile
 195 200 205
 Leu Val Arg His Thr Val Phe Ser Arg Asn Val Phe Gly Arg Gly Ile
 210 215 220
 Leu Ser Ile Leu Asp Trp Leu Lys Thr Leu Asn Pro Gln Pro Gly Leu
 225 230 235 240
 Tyr Ser Leu Gly Asp Thr Leu Glu Leu Val Leu Arg Asn Glu His Cys
 245 250 255
 Leu Leu Lys Lys Thr Thr Asp His
 260

<210>1123

<211>295

<212>PRT

<213>Chlamydia pneumoniae

<400>1123

Ile Trp Ala Ile Val Trp Arg Cys Leu Tyr Leu Ala Gly Ala Ile Gly
1 5 10 15
Pro Met Pro Glu Met Val Arg Asp Leu Pro Ile Arg Lys Ile Glu Glu
20 25 30
Val Gln Ser Asp Ile Val Val Ser Phe Leu Pro Ser Ser Ala Glu Ser
35 40 45
Met Glu Ala Tyr Cys Leu Ser Gln Gly Lys Val Val Phe Ser Asn Ala
50 55 60
Ser Thr Tyr Arg Met His Ser Ser Val Pro Ile Ile Ile Pro Glu Val
65 70 75 80
Asn Ser Asp His Phe Gln Leu Leu Glu Glu Gln Pro Tyr Pro Gly Lys
85 90 95
Ile Ile Thr Ser Pro Asn Cys Cys Val Ser Gly Ile Thr Leu Ala Leu
100 105 110
Ala Pro Leu Arg Lys Phe Ser Leu Asp His Val His Ile Val Thr Leu
115 120 125
Gln Ser Ala Ser Gly Ala Gly Tyr Pro Gly Val Pro Ser Leu Asp Leu
130 135 140
Leu Ala Asn Thr Val Pro His Ile Val Gly Glu Glu Lys Ile Leu
145 150 155 160
Arg Glu Thr Val Lys Ile Leu Gly Ser Ser Lys Gln Pro Leu Pro Cys
165 170 175
Lys Leu Ser Val Thr Val His Arg Val Pro Val Ala Tyr Gly His Thr
180 185 190
Leu Ser Leu His Val Thr Phe Ser Lys Asp Val Asp Leu Asp Glu Ile
195 200 205
Leu Tyr Ser Tyr Gln Glu Lys Asn Lys Glu Phe Pro Asn Thr Tyr Gln
210 215 220
Leu Tyr Asp Asn Pro Trp Ser Pro Gln Ala Arg Lys His Leu Ser His
225 230 235 240
Asp Asp Met Arg Val His Leu Gly Pro Ile Thr Tyr Gly Gly Asp Phe
245 250 255
Arg Thr Ile Lys Met Asn Val Leu Ile His Asn Leu Val Arg Gly Ala
260 265 270
Ala Gly Thr Leu Leu Ala Ser Met Glu Asn Tyr Phe Phe Asp Tyr Leu
275 280 285
Lys Arg Glu Met Cys Leu Arg
290 295

<210>1124

<211>441

<212>PRT

<213>Chlamydia pneumoniae

<400>1124

Asn Val Ser Lys Ile Val Tyr Lys Phe Gly Gly Thr Ser Leu Ala Thr
1 5 10 15
Ala Glu Asn Ile Cys Leu Val Cys Asp Ile Ile Cys Lys Asp Lys Pro
20 25 30
Ser Phe Val Val Val Ser Ala Ile Ala Gly Val Thr Asp Leu Leu Val
35 40 45
Asp Phe Cys Ser Ser Ser Leu Arg Glu Arg Glu Glu Val Leu Arg Lys
50 55 60
Ile Glu Gly Lys His Glu Glu Ile Val Lys Asn Leu Ala Ile Pro Phe
65 70 75 80
Pro Val Ser Thr Trp Thr Ser Arg Leu Leu Pro Tyr Leu Gln His Leu
85 90 95
Glu Ile Ser Asp Leu Asp Phe Ala Arg Ile Leu Ser Leu Gly Glu Asp
100 105 110
Ile Ser Ala Ser Leu Val Arg Ala Val Cys Ser Thr Arg Gly Trp Asp
115 120 125
Leu Gly Phe Leu Glu Ala Arg Ser Val Ile Leu Thr Asp Asp Ser Tyr
130 135 140
Arg Arg Ala Ser Pro Asn Leu Asp Leu Met Lys Ala His Trp His Gln
145 150 155 160

Leu Glu Leu Asn Gln Pro Ser Tyr Ile Ile Gln Gly Phe Ile Gly Ser
 165 170 175
 Asn Gly Leu Gly Glu Thr Val Leu Leu Gly Arg Gly Gly Ser Asp Tyr
 180 185 190
 Ser Ala Thr Leu Ile Ala Glu Leu Ala Arg Ala Thr Glu Val Arg Ile
 195 200 205
 Tyr Thr Asp Val Asn Gly Ile Tyr Thr Met Asp Pro Lys Val Ile Ser
 210 215 220
 Asp Ala Gln Arg Ile Pro Glu Leu Ser Phe Glu Glu Met Gln Asn Leu
 225 230 235 240
 Ala Ser Phe Gly Ala Lys Val Leu Tyr Pro Pro Met Leu Phe Pro Cys
 245 250 255
 Met Arg Ala Gly Ile Pro Ile Phe Val Thr Ser Thr Phe Asp Pro Glu
 260 265 270
 Lys Gly Gly Thr Trp Val Tyr Ala Val Asp Lys Ser Val Ser Tyr Glu
 275 280 285
 Pro Arg Ile Lys Ala Leu Ser Leu Ser Gln Tyr Gln Ser Phe Cys Ser
 290 295 300
 Val Asp Tyr Thr Val Leu Gly Cys Gly Gly Leu Glu Glu Ile Leu Gly
 305 310 315 320
 Ile Leu Glu Ser His Gly Ile Asp Pro Glu Leu Met Ile Ala Gln Asn
 325 330 335
 Asn Val Val Gly Phe Val Met Asp Asp Asp Ile Ile Ser Gln Glu Ala
 340 345 350
 Gln Glu His Leu Val Asp Val Leu Ser Leu Ser Ser Val Thr Arg Leu
 355 360 365
 His His Ser Val Ala Leu Ile Thr Met Ile Gly Asp Asn Leu Ser Ser
 370 375 380
 Pro Lys Val Val Ser Thr Ile Thr Glu Lys Leu Arg Gly Phe Gln Gly
 385 390 395 400
 Pro Val Phe Cys Phe Cys Gln Ser Ser Met Ala Leu Ser Phe Val Val
 405 410 415
 Ala Ser Glu Leu Ala Glu Gly Ile Ile Glu Glu Leu His Asn Asp Tyr
 420 425 430
 Val Lys Gln Lys Ala Ile Val Ala Thr
 435 440

<210>1125

<211>271

<212>PRT

<213>Chlamydia pneumoniae

<400>1125

Lys Ser Tyr Ser Arg His Val Gly Arg Ile Met His Leu Leu Thr Ala
 1 5 10 15
 Thr Val Thr Pro Phe Phe Pro Asn Gly Thr Ile Asp Phe Ala Ser Leu
 20 25 30
 Glu Arg Leu Leu Ser Phe Gln Asp Ala Val Gly Asn Gly Val Val Leu
 35 40 45
 Leu Gly Ser Thr Gly Glu Gly Leu Ser Leu Thr Lys Lys Glu Lys Gln
 50 55 60
 Ala Leu Ile Cys Phe Ala Cys Asp Leu Gln Leu Lys Val Pro Leu Phe
 65 70 75 80
 Val Gly Thr Ser Gly Thr Leu Leu Glu Glu Val Leu Asp Trp Ile His
 85 90 95
 Phe Cys Asn Asp Leu Pro Ile Ser Gly Phe Leu Met Thr Thr Pro Ile
 100 105 110
 Tyr Thr Lys Pro Lys Leu Cys Gly Gln Ile Leu Trp Phe Glu Ala Val
 115 120 125
 Leu Asn Ala Ala Lys His Pro Ala Ile Leu Tyr Asn Ile Pro Ser Arg
 130 135 140
 Ala Ala Thr Pro Leu Tyr Leu Asp Thr Val Lys Ala Leu Ala His His
 145 150 155 160
 Pro Gln Phe Leu Gly Ile Lys Asp Ser Gly Gly Ser Val Glu Glu Phe
 165 170 175
 Gln Ser Tyr Lys Ser Ile Ala Pro His Ile Gln Leu Tyr Cys Gly Asp

85 90 95
 Asn Leu Lys Glu Gln Tyr Arg His Leu Ser His Asn Thr Gly Phe Glu
 100 105 110
 Leu Ser Val Lys Ser Ala Phe
 115
 <210>1128
 <211>810
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>1128
 Cys Lys Tyr Phe Tyr Leu Arg Ser Tyr Pro Pro Pro Gln His Ser Val
 1 5 10 15
 Gly Ser Ile Ser Ser Pro Ser Lys Leu Arg Val Leu Ala Ile Thr Phe
 20 25 30
 Leu Val Phe Gly Met Leu Leu Leu Ile Ser Gly Ala Leu Phe Leu Thr
 35 40 45
 Leu Gly Ile Pro Gly Leu Ser Ala Ala Ile Ser Phe Gly Leu Gly Ile
 50 55 60
 Gly Leu Ser Ala Leu Gly Gly Val Leu Met Ile Ser Gly Leu Leu Cys
 65 70 75 80
 Leu Leu Val Lys Arg Glu Ile Pro Thr Val Arg Pro Glu Glu Ile Pro
 85 90 95
 Glu Gly Val Ser Leu Ala Pro Ser Glu Glu Pro Ala Leu Gln Ala Ala
 100 105 110
 Gln Lys Thr Leu Ala Gln Leu Pro Lys Glu Leu Asp Gln Leu Asp Thr
 115 120 125
 Asp Ile Gln Glu Val Phe Ala Cys Leu Arg Lys Leu Lys Asp Ser Lys
 130 135 140
 Tyr Glu Ser Arg Ser Phe Leu Asn Asp Ala Lys Lys Glu Leu Arg Val
 145 150 155 160
 Phe Asp Phe Val Val Glu Asp Thr Leu Ser Glu Ile Phe Glu Leu Arg
 165 170 175
 Gln Ile Val Ala Gln Glu Gly Trp Asp Leu Asn Phe Leu Ile Asn Gly
 180 185 190
 Gly Arg Ser Leu Met Met Thr Ala Glu Ser Glu Ser Leu Asp Leu Phe
 195 200 205
 His Val Ser Lys Arg Leu Gly Tyr Leu Pro Ser Gly Asp Val Arg Gly
 210 215 220
 Glu Gly Leu Lys Lys Ser Ala Lys Glu Ile Val Ala Arg Leu Met Ser
 225 230 235 240
 Leu His Cys Glu Ile His Lys Val Ala Val Ala Phe Asp Arg Asn Ser
 245 250 255
 Tyr Ala Met Ala Glu Lys Ala Phe Ala Lys Ala Leu Gly Ala Leu Glu
 260 265 270
 Glu Ser Val Tyr Arg Ser Leu Thr Gln Ser Tyr Arg Asp Lys Phe Leu
 275 280 285
 Glu Ser Glu Arg Ala Lys Ile Pro Trp Asn Gly His Ile Thr Trp Leu
 290 295 300
 Arg Asp Asp Ala Lys Ser Gly Cys Ala Glu Lys Lys Leu Arg Asp Ala
 305 310 315 320
 Glu Glu Arg Trp Lys Lys Phe Arg Lys Ala Val Phe Trp Val Glu Glu
 325 330 335
 Asp Gly Gly Phe Asp Ile Asn Asn Leu Leu Gly Asp Trp Gly Thr Val
 340 345 350
 Leu Asp Pro Tyr Arg Gln Glu Arg Met Asp Glu Ile Thr Phe His Glu
 355 360 365
 Leu Tyr Glu Lys Thr Thr Phe Leu Lys Arg Leu His Arg Lys Cys Ala
 370 375 380
 Leu Ala Lys Thr Thr Phe Glu Lys Xaa Arg Ser Lys Lys Asn Leu Gln
 385 390 395 400
 Ala Val Xaa Glu Ala Asn Ala Arg Arg Leu Lys Tyr Val Arg Asp Trp
 405 410 415
 Tyr Asp Gln Xaa Phe Gln Lys Ala Gly Glu Arg Leu Glu Lys Leu His
 420 425 430

Ala	Leu	Tyr	Pro	Glu	Val	Ser	Val	Ser	Ile	Arg	Glu	Asn	Lys	Ile	Gln
	435						440					445			
Glu	Thr	Arg	Ser	Asn	Leu	Xaa	Lys	Ala	Tyr	Glu	Ala	Ile	Glu	Xaa	Asn
	450					455					460				
Tyr	Arg	Cys	Cys	Val	Arg	Glu	Gln	Glu	Asp	Tyr	Trp	Lys	Glu	Glu	Glu
465					470				475						480
Lys	Arg	Glu	Ala	Xaa	Phe	Arg	Glu	Arg	Gly	Asn	Xaa	Ile	Leu	Ser	Pro
			485						490					495	
Glu	Glu	Leu	Glu	Xaa	Ser	Leu	Glu	Gln	Phe	Asp	His	Gly	Leu	Lys	Asn
			500					505					510		
Phe	Ser	Glu	Lys	Leu	Met	Glu	Leu	Glu	Gly	His	Ile	Leu	Lys	Leu	Gln
	515						520					525			
Lys	Glu	Ala	Thr	Ala	Glu	Val	Glu	Asn	Lys	Ile	Leu	Ser	Asp	Ala	Glu
	530					535					540				
Ser	Arg	Leu	Glu	Ile	Val	Phe	Glu	Asp	Val	Lys	Glu	Met	Pro	Cys	Arg
545					550					555					560
Ile	Glu	Glu	Ile	Glu	Lys	Thr	Leu	Arg	Met	Ala	Xaa	Leu	Pro	Leu	Leu
				565					570					575	
Pro	Thr	Lys	Lys	Ala	Phe	Glu	Lys	Ala	Cys	Ser	Gln	Tyr	Asn	Ser	Cys
			580					585					590		
Ala	Glu	Met	Leu	Glu	Lys	Val	Lys	Pro	Tyr	Cys	Lys	Glu	Ser	Leu	Ala
		595					600					605			
Tyr	Val	Thr	Ser	Lys	Glu	Arg	Leu	Val	Ser	Leu	Asp	Glu	Asp	Leu	Arg
	610					615					620				
Arg	Ala	Tyr	Thr	Glu	Cys	Gln	Lys	Arg	Phe	Gln	Gly	Asp	Ser	Gly	Leu
625					630					635					640
Glu	Ser	Glu	Val	Arg	Ala	Cys	Arg	Glu	Gln	Leu	Arg	Glu	Arg	Ile	Gln
				645					650					655	
Glu	Phe	Glu	Thr	Gln	Gly	Leu	Asp	Leu	Val	Glu	Lys	Glu	Leu	Leu	Cys
			660					665					670		
Val	Ser	Ser	Arg	Leu	Arg	Asn	Thr	Glu	Cys	Asp	Cys	Val	Ser	Gly	Val
		675					680					685			
Lys	Lys	Glu	Ala	Pro	Pro	Gly	Lys	Lys	Phe	Tyr	Ala	Gln	Tyr	Tyr	Asp
	690					695					700				
Glu	Ile	Tyr	Arg	Val	Arg	Val	Gln	Ser	Arg	Trp	Met	Thr	Met	Ser	Glu
705					710					715					720
Arg	Leu	Arg	Glu	Gly	Val	Gln	Ala	Cys	Asn	Lys	Met	Leu	Lys	Ala	Gly
				725					730					735	
Leu	Ser	Glu	Glu	Asp	Lys	Val	Leu	Lys	Glu	Glu	Glu	Tyr	Trp	Leu	Tyr
			740					745					750		
Arg	Glu	Glu	Arg	Lys	Asn	Lys	Glu	Lys	Arg	Leu	Val	Gly	Thr	Lys	Ile
	755						760					765			
Val	Ala	Thr	Gln	Gln	Arg	Val	Ala	Ala	Phe	Glu	Ser	Ile	Glu	Val	Pro
	770					775					780				
Glu	Ile	Pro	Glu	Ala	Pro	Glu	Glu	Lys	Pro	Ser	Leu	Leu	Asp	Lys	Ala
785					790					795					800
Arg	Ser	Leu	Phe	Thr	Arg	Glu	Asp	His	Thr						
				805					810						

<210>1129

<211>132

<212>PRT

<213>Chlamydia pneumoniae

<400>1129

Val	Ala	Cys	Arg	Ala	Gly	Ser	Ser	Glu	Gly	Ala	Thr	Glu	Thr	Pro	Ser
1				5					10					15	
Gly	Ile	Ser	Ser	Gly	Arg	Thr	Val	Gly	Thr	Ser	Arg	Phe	Ala	Lys	Arg
			20					25					30		
His	Arg	Ser	Pro	Glu	Thr	Thr	Ser	Thr	Pro	Pro	Asn	Ala	Glu	Arg	Pro
			35				40					45			
Met	Pro	Asn	Pro	Lys	Glu	Ile	Ala	Ala	Leu	Asn	Pro	Glu	Ile	Pro	Asn
	50					55					60				
Val	Arg	Lys	Arg	Ala	Pro	Glu	Ile	Lys	Lys	Ser	Thr	Pro	Arg	Thr	Lys
	65				70					75				80	
Lys	Val	Ile	Ala	Lys	Thr	Arg	Asn	Leu	Asp	Arg	Gln	Lys	Lys	Ala	Pro

85 90 95
 Thr Glu Trp Ser Gly Gly Gly Gly Gly Ser Cys Gly Asp Arg Gly Thr
 100 105 110
 Cys Ile Met Asn Leu Trp Arg His His Ala Gln Thr His Lys Leu Asn
 115 120 125
 Pro Leu Ser Tyr
 130
 <210>1130
 <211>320
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>1130
 Trp Arg His Arg Phe Ile Met Gln Val Pro Leu Ser Pro Gln Leu Pro
 1 5 10 15
 Pro Pro Pro Pro Asp His Ser Val Gly Ala Phe Phe Cys Leu Ser Lys
 20 25 30
 Phe Arg Val Leu Ala Ile Thr Phe Leu Val Leu Gly Val Leu Phe Leu
 35 40 45
 Ile Ser Gly Ala Leu Phe Leu Thr Leu Gly Ile Ser Gly Leu Ser Ala
 50 55 60
 Ala Ile Ser Phe Gly Leu Gly Ile Gly Leu Ser Ala Leu Gly Gly Val
 65 70 75 80
 Leu Val Val Ser Gly Leu Leu Cys Leu Leu Ala Lys Arg Glu Val Pro
 85 90 95
 Thr Val Arg Pro Glu Glu Ile Pro Glu Gly Val Ser Val Ala Pro Ser
 100 105 110
 Glu Glu Pro Ala Leu Gln Ala Thr Gln Lys Thr Leu Ala Gln Leu Pro
 115 120 125
 Lys Glu Leu Asp Gln Leu Asp Arg Tyr Ile Gln Glu Val Val Ser Cys
 130 135 140
 Leu Gly Lys Leu Lys Asp Leu Arg Cys Glu Asp Gln Gly Leu Leu Lys
 145 150 155 160
 Asp Ala Lys Glu Lys Leu Gln Val Phe Asp Phe Val Trp Lys Asp Met
 165 170 175
 Met Thr Glu Phe Val Glu Leu Gln Gln Ile Met Asp Gln Glu Gly Trp
 180 185 190
 Tyr Leu Lys Cys Leu Ile Gln Glu Met Arg Asp Ile Gly Ser Thr Leu
 195 200 205
 Phe Met Ser Gln Val Ser Leu Phe Lys Leu Trp Glu Trp Leu Gly Tyr
 210 215 220
 Leu Pro Ser Gly Asp Val Arg Gly Glu Arg Leu Lys Lys Ser Ala Arg
 225 230 235 240
 Glu Val Val Asp Arg Phe Met Arg Arg Ile Cys Asp Thr Arg Lys Val
 245 250 255
 Ala Met Thr Phe Asp Arg Asn Ala Tyr Gly Val Ala Lys Thr Ala Phe
 260 265 270
 Glu Lys Ala Phe Gly Ala Leu Glu Thr Cys Val Tyr Lys Ser Met Thr
 275 280 285
 Glu Ser Tyr Arg Glu Ala Phe Cys Glu Tyr Lys Lys Thr Lys Ile Leu
 290 295 300
 Arg Asp Glu Glu Lys Ile Leu Arg Ile Cys Tyr Leu Glu Leu Arg Arg
 305 310 315 320
 <210>1131
 <211>249
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>1131
 Gly Glu Asp Ile Lys Asp Met Leu Ser Arg Val Glu Glu Ile Glu Met
 1 5 10 15
 Met Leu Arg Val Ile Glu Leu Pro Leu Leu Pro Ile Lys Gln Ala Leu
 20 25 30
 Glu Lys Ala Phe Val Gln Tyr Asn Ser Tyr Lys Ala Lys Leu Thr Lys
 35 40 45
 Val Glu Pro Cys Phe Arg Glu Ser Pro Ala Tyr Ile Thr Ser Glu Glu

50	55	60
Arg Leu Xaa Ser Leu Asp Gln Thr Leu Glu Arg Ala Tyr Lys Glu Tyr		
65	70	75
Gln Lys Arg Phe Gln Glu Pro Ser Arg Leu Glu Ser Glu Val Ser Gly		80
	85	90
Cys Arg Glu His Leu Arg Glu Gln Val Lys Gln Phe Glu Thr Gln Gly		95
	100	105
Leu Asp Leu Ile Lys Glu Glu Leu Ile Phe Val Ser Asp Val Leu Phe		110
	115	120
Arg Lys Met Val Ser Cys Leu Val Ser Thr Val His Val Pro Phe Met		125
	130	135
Glu Phe Tyr Tyr Glu Tyr Phe Glu Leu His Arg Leu Arg Leu Arg Ala		140
	145	150
Gln Trp Met Ala Asn Ala Glu Ile Tyr Ser Lys Val Arg Lys Ala Phe		155
	165	170
Pro Glu Met Leu Lys Glu Thr Leu Glu Lys Ala Lys Ala Pro Arg Glu		175
	180	185
Glu Glu Tyr Trp Leu Leu Cys Glu Glu Arg Lys Ser Lys Glu Lys Arg		190
	195	200
Leu Ile Leu Asn Lys Ile Glu Ala Ala Gln Gln Arg Val Lys Asp Leu		205
	210	215
Glu Pro Pro Pro Ile Lys Glu Thr Gly Lys Gln Lys Arg Lys Lys Glu		220
	225	230
Tyr Ser Phe Phe Ile Arg Leu Lys Ser		235
	245	240

<210>1132

<211>679

<212>PRT

<213>Chlamydia pneumoniae

<400>1132

Met Pro Glu Pro Leu Tyr Thr Asn Lys Leu Ile Thr Glu Lys Ser Pro		
1	5	10
Tyr Leu Leu Leu Tyr Ala His Thr Pro Val Asn Trp Tyr Pro Trp Gly		15
	20	25
Ala Glu Ala Phe His Ile Ala Ala Ile Glu Asn Lys Pro Val Phe Leu		30
	35	40
Ser Ile Gly Cys Lys His Ser Arg Trp Cys Gln Val Met Leu Gln Glu		45
	50	55
Ser Tyr Thr Asn Pro Glu Ile Ala Ala Met Leu Asn Glu Tyr Phe Val		60
	65	70
Asn Val Lys Val Asp Lys Glu Glu Leu Pro Tyr Val Ala Lys Leu Tyr		75
	85	90
Gly Asp Leu Ala Gln Met Leu Ala Val Ser Gly Asp His Gln Glu Thr		95
	100	105
Val Ser Trp Pro Leu Asn Val Phe Leu Thr Pro Asp Leu Val Pro Phe		110
	115	120
Phe Ser Val Asn Tyr Leu Gly Asn Glu Gly Lys Leu Gly Leu Pro Ser		125
	130	135
Phe Pro Gln Ile Ile Asp Lys Leu His Phe Met Trp Glu Asp Ala Glu		140
	145	150
Glu Arg Glu Ala Leu Val Glu Gln Ala Met Arg Phe Leu Glu Ile Ala		155
	165	170
Ser Phe Leu Glu Gly Cys Val Arg Lys Glu Ile Leu Asp Glu Ser Ser		175
	180	185
Leu Lys Arg Thr Val Ala Ala Leu Tyr Gln Asp Ile Asp Pro His Tyr		190
	195	200
Gly Gly Val Lys Ala Phe Pro Lys Arg Leu Pro Gly Leu Leu Leu Gln		205
	210	215
Phe Phe Leu Arg Tyr Ser Leu Glu Tyr Gln Glu Ser Arg Gly Leu Phe		220
	225	230
Phe Val Asp Arg Ser Leu Ser Met Val Ala Leu Gly Gly Val Arg Asp		235
	245	250
His Ile Gly Gly Gly Val Tyr Ser Tyr Thr Ile Asp Asp Lys Trp Leu		255
	260	265
		270

WO 99/27105

Ile Pro Ala Phe Glu Lys Arg Leu Ile Asp Asn Ala Leu Met Ala Leu
 275 280 285
 Asn Tyr Leu Glu Ala Trp Ala Cys Leu Gly Lys Glu Glu Tyr Arg Gly
 290 295 300
 Ile Gly Lys Gln Ile Leu Ser Tyr Ile Leu Ser Glu Leu Tyr Ser Pro
 305 310 315 320
 Glu Val Gly Ala Phe Tyr Ser Ser Glu Gln Ala Glu Asn Trp Gly Ala
 325 330 335
 Gly Gly Gln Asn Phe Tyr Thr Trp Ser Val Glu Glu Ile Ser Asn Ala
 340 345 350
 Leu Gly Glu Asp Ala Glu Ile Phe Cys Asp Tyr Tyr Gly Ile Ser Arg
 355 360 365
 Glu Gly Phe Phe Asn Gly Arg Asn Ile Leu His Ile Pro Val His Arg
 370 375 380
 Glu Ile Glu Glu Leu Ser Glu Lys Tyr His Arg Ser Ile Glu Ala Ile
 385 390 395 400
 Glu Asp Ile Val Asp Arg Ser Arg Asp Ile Leu Lys Gly Ile Arg Ala
 405 410 415
 Gln Arg Ser His Arg Ser Lys Asp Asp Leu Ser Leu Thr Phe Asn Asn
 420 425 430
 Gly Trp Met Ile Tyr Thr Phe Ala Tyr Ala Gly Arg Leu Leu Gly Glu
 435 440 445
 Val Glu Tyr Ile Glu Ile Glu Lys Lys Cys Gly Glu Phe Val Arg Asn
 450 455 460
 Ser Leu Tyr Lys His His Glu Leu Tyr Arg Arg Trp Arg Glu Gly Glu
 465 470 475 480
 Ala Lys Tyr Arg Ala Ser Leu Glu Asp Tyr Gly Ala Leu Ile Leu Gly
 485 490 495
 Val Leu Ala Leu Tyr Glu Ser Gly Cys Gly Ser Phe Trp Leu Ser Phe
 500 505 510
 Ala Glu Glu Leu Met Gln Glu Val Val Leu Ser Phe Arg Ser Glu Glu
 515 520 525
 Gly Gly Phe Tyr Ser Asp Asp Gly Arg Asp Ser Thr Leu Leu Ile Lys
 530 535 540
 Gln Ser Pro Leu Ser Asp Gly Glu Thr Ile Ser Gly Asn Ala Leu Ile
 545 550 555 560
 Cys Gln Cys Leu Leu Ser Leu His Leu Ile Thr Glu Lys Lys His Tyr
 565 570 575
 Leu Thr Tyr Ala Glu Asp Ile Leu Gln Ile Ala Gln Ala Cys Ala His
 580 585 590
 Thr His Lys Phe Ser Ser Leu Gly Leu Leu Ile Ala Ser Gln Asn Tyr
 595 600 605
 Phe Ser Arg Lys His Val Lys Val Leu Ile Pro Leu Gly Asp Gln Glu
 610 615 620
 Asp Arg Ser Pro Val Leu Lys Cys Leu Ser Gly Leu Phe Leu Pro Tyr
 625 630 635 640
 Leu Ser Leu Ile Trp Met Thr Gln Glu Asn Gln Glu His Leu Glu Thr
 645 650 655
 Val Leu Pro Glu Tyr Glu His Cys Leu Ile Pro Lys Arg Gly Ile Ala
 660 665 670
 Gln Leu Arg Gln Phe Met Phe
 675

<210>1133

<211>365

<212>PRT

<213>Chlamydia pneumoniae

<400>1133

Glu Val Met Lys Leu Tyr Gln Thr Leu Arg Gly Ile Val Leu Val Ser
 1 5 10 15
 Thr Gly Cys Ile Phe Leu Gly Met His Gly Gly Tyr Ala Ala Glu Val
 20 25 30
 Pro Val Thr Ser Ser Gly Tyr Glu Asn Leu Leu Glu Ser Lys Glu Gln
 35 40 45
 Asp Pro Ser Gly Leu Ala Ile His Asp Arg Ile Leu Phe Lys Val Asp

50	55	60																	
Glu	Glu	Asn	Val	Val	Thr	Ala	Leu	Asp	Val	Ile	His	Lys	Leu	Asn	Leu				
65					70					75					80				
Leu	Phe	Tyr	Asn	Ser	Tyr	Pro	His	Leu	Ile	Asp	Ser	Phe	Pro	Ala	Arg				
			85						90					95					
Ser	Gln	Tyr	Tyr	Thr	Ala	Met	Trp	Pro	Val	Val	Leu	Glu	Ser	Val	Ile				
			100					105						110					
Asp	Glu	Phe	Leu	Met	Val	Ala	Asp	Ala	Lys	Ala	Lys	Arg	Ile	Ala	Thr				
	115						120						125						
Asp	Pro	Thr	Ala	Val	Asn	Gln	Glu	Ile	Glu	Glu	Met	Phe	Gly	Arg	Asp				
	130					135					140								
Leu	Ser	Pro	Leu	Tyr	Ala	His	Phe	Glu	Met	Ser	Pro	Asn	Asp	Ile	Phe				
145					150					155				160					
Asn	Val	Ile	Asp	Arg	Thr	Leu	Thr	Ala	Gln	Arg	Val	Met	Gly	Met	Met				
			165						170					175					
Val	Arg	Ser	Lys	Val	Met	Leu	Lys	Val	Thr	Pro	Gly	Lys	Ile	Arg	Glu				
	180							185					190						
Tyr	Tyr	Arg	Lys	Leu	Glu	Glu	Glu	Ala	Ser	Arg	Lys	Val	Ile	Trp	Lys				
	195						200					205							
Tyr	Arg	Val	Leu	Thr	Ile	Lys	Ala	Asn	Thr	Glu	Ser	Leu	Ala	Ser	Gln				
	210				215						220								
Ile	Ala	Asp	Lys	Val	Arg	Ala	Arg	Leu	Asn	Glu	Ala	Lys	Thr	Trp	Asp				
225					230					235				240					
Lys	Asp	Arg	Leu	Thr	Ala	Leu	Val	Ile	Ser	Gln	Gly	Gly	Gln	Leu	Val				
			245						250					255					
Cys	Ser	Glu	Glu	Phe	Ser	Arg	Glu	Asn	Ser	Glu	Leu	Ser	Gln	Ser	His				
		260						265					270						
Lys	Gln	Glu	Leu	Asp	Leu	Ile	Gly	Tyr	Pro	Lys	Glu	Leu	Cys	Gly	Leu				
		275					280					285							
Pro	Lys	Ala	His	Lys	Ser	Gly	Tyr	Lys	Leu	Tyr	Met	Leu	Leu	Asp	Lys				
	290					295					300								
Thr	Ser	Gly	Ser	Ile	Glu	Pro	Leu	Asp	Val	Met	Glu	Ser	Lys	Ile	Lys				
305					310					315				320					
Gln	His	Leu	Phe	Ala	Leu	Glu	Ala	Glu	Ser	Val	Glu	Lys	Gln	Tyr	Lys				
			325						330					335					
Asp	Arg	Leu	Arg	Lys	Arg	Tyr	Gly	Tyr	Asp	Ala	Ser	Met	Ile	Ala	Lys				
		340						345					350						
Leu	Leu	Ser	Glu	Glu	Ala	Pro	Pro	Leu	Phe	Ser	Leu	Leu							
	355					360					365								

<210>1134

<211>277

<212>PRT

<213>Chlamydia pneumoniae

<400>1134

Val	Thr	Arg	Ser	Ser	Pro	Ala	Gln	Leu	Ser	Arg	Phe	Leu	Ser	Glu	Ile				
1				5					10					15					
Gln	Asn	Lys	Pro	Lys	Lys	Ser	Leu	Ser	Gln	Asn	Phe	Leu	Val	Asp	Gln				
			20					25					30						
Asn	Ile	Val	Lys	Lys	Ile	Val	Ala	Thr	Ser	Glu	Val	Ile	Pro	Gln	Asp				
	35						40					45							
Trp	Val	Leu	Glu	Ile	Gly	Pro	Gly	Phe	Gly	Ala	Leu	Thr	Glu	Glu	Leu				
	50				55						60								
Ile	Ala	Ala	Gly	Ala	Gln	Val	Ile	Ala	Ile	Glu	Lys	Asp	Pro	Met	Phe				
65					70					75				80					
Ala	Pro	Ser	Leu	Glu	Leu	Pro	Ile	Arg	Leu	Glu	Ile	Ile	Asp	Ala					
				85				90					95						
Cys	Lys	Tyr	Pro	Leu	Asp	Gln	Leu	Gln	Glu	Tyr	Lys	Thr	Leu	Gly	Lys				
			100					105					110						
Gly	Arg	Val	Val	Ala	Asn	Leu	Pro	Tyr	His	Ile	Thr	Thr	Pro	Leu	Leu				
	115						120					125							
Thr	Lys	Leu	Phe	Leu	Glu	Ala	Pro	Asp	Phe	Trp	Lys	Thr	Val	Thr	Val				
	130					135					140								
Met	Val	Gln	Asp	Glu	Val	Ala	Arg	Arg	Ile	Val	Ala	Gln	Pro	Gly	Gly				
145					150					155				160					

WO 99/27105

Arg Asp Tyr Gly Ser Leu Thr Ile Phe Leu Gln Phe Phe Ala Asp Ile
 165 170 175
 His Tyr Ala Phe Lys Val Ser Ala Ser Cys Phe Tyr Pro Lys Pro Gln
 180 185 190
 Val Gln Ser Ala Val Ile His Met Lys Val Lys Glu Thr Leu Pro Leu
 195 200 205
 Ser Asp Glu Glu Ile Pro Val Phe Phe Thr Leu Thr Arg Thr Ala Phe
 210 215 220
 Gln Gln Arg Arg Lys Val Leu Ala Asn Thr Leu Lys Gly Leu Tyr Pro
 225 230 235 240
 Lys Glu Gln Val Glu Gln Ala Leu Lys Glu Leu Gly Leu Leu Leu Asn
 245 250 255
 Val Arg Pro Glu Val Leu Ser Leu Asn Asp Tyr Leu Ala Leu Phe His
 260 265 270
 Lys Met Gln Ala Gly
 275

<210>1135

<211>644

<212>PRT

<213>Chlamydia pneumoniae

<400>1135

Met Thr Ser Ser Ser Cys Pro Leu Leu Asp Leu Ile Leu Ser Pro Ala
 1 5 10 15
 Asp Leu Lys Lys Leu Ser Ile Ser Gln Leu Pro Gly Leu Ala Glu Glu
 20 25 30
 Ile Arg Tyr Arg Ile Ile Ser Val Leu Ser Gln Thr Gly Gly His Leu
 35 40 45
 Ser Ser Asn Leu Gly Ile Val Glu Leu Thr Ile Ala Leu His Tyr Val
 50 55 60
 Phe Ser Ser Pro Lys Asp Lys Phe Ile Phe Asp Val Gly His Gln Thr
 65 70 75 80
 Tyr Pro His Lys Leu Leu Thr Gly Arg Asn Asn Glu Gly Phe Asp His
 85 90 95
 Ile Arg Asn Asp Asn Gly Leu Ser Gly Phe Thr Asn Pro Thr Glu Ser
 100 105 110
 Asp His Asp Leu Phe Phe Ser Gly His Ala Gly Thr Ala Leu Ser Leu
 115 120 125
 Ala Leu Gly Met Ala Gln Thr Thr Pro Leu Glu Ser Arg Thr His Val
 130 135 140
 Ile Pro Ile Leu Gly Asp Ala Ala Phe Ser Cys Gly Leu Thr Leu Glu
 145 150 155 160
 Ala Leu Asn Asn Ile Ser Thr Asp Leu Ser Lys Phe Val Val Ile Leu
 165 170 175
 Asn Asp Asn Asn Met Ser Ile Ser Lys Asn Val Gly Ala Met Ser Arg
 180 185 190
 Ile Phe Ser Arg Trp Leu His His Pro Ala Thr Asn Lys Leu Thr Lys
 195 200 205
 Gln Val Glu Lys Trp Leu Ala Lys Ile Pro Arg Tyr Gly Asp Ser Leu
 210 215 220
 Ala Lys His Ser Arg Arg Leu Ser Gln Cys Val Lys Asn Leu Phe Cys
 225 230 235 240
 Pro Thr Pro Leu Phe Glu Gln Phe Gly Leu Ala Tyr Val Gly Pro Ile
 245 250 255
 Asp Gly His Asn Val Lys Lys Leu Ile Pro Ile Leu Gln Ser Val Arg
 260 265 270
 Asn Leu Pro Phe Pro Ile Leu Val His Val Cys Thr Thr Lys Gly Lys
 275 280 285
 Gly Leu Asp Gln Ala Gln Asn Asn Pro Ala Lys Tyr His Gly Val Arg
 290 295 300
 Ala Asn Phe Asn Lys Arg Glu Ser Ala Lys His Leu Pro Ala Ile Lys
 305 310 315 320
 Pro Lys Pro Ser Phe Pro Asp Ile Phe Gly Gln Thr Leu Cys Glu Leu
 325 330 335
 Gly Glu Val Ser Ser Arg Leu His Val Val Thr Pro Ala Met Ser Ile

<400>1137

Met Ser Ser Pro Pro Gln Ala Val Ala Ser Leu Thr Glu Arg Ile Lys
 1 5 10 15
 Thr Leu Leu Glu Ser Asn Phe Cys Gln Ile Ile Val Lys Gly Glu Leu
 20 25 30
 Ser Asn Val Ser Leu Gln Pro Ser Gly His Leu Tyr Phe Gly Ile Lys
 35 40 45
 Asp Ser Gln Ala Phe Leu Asn Gly Ala Phe Phe His Phe Lys Ser Lys
 50 55 60
 Tyr Tyr Asp Arg Lys Pro Lys Asp Gly Asp Ala Val Ile Ile His Gly
 65 70 75 80
 Lys Leu Ala Val Tyr Ala Pro Arg Gly Gln Tyr Gln Ile Val Ala His
 85 90 95
 Ala Leu Val Tyr Ala Gly Glu Gly Asp Leu Leu Gln Lys Phe Glu Glu
 100 105 110
 Thr Lys Arg Arg Leu Thr Ala Glu Gly Tyr Phe Ala Thr Glu Lys Lys
 115 120 125
 Lys Pro Leu Pro Phe Ala Pro Gln Cys Ile Gly Val Ile Thr Ser Pro
 130 135 140
 Thr Gly Ala Val Ile Gln Asp Ile Leu Arg Val Leu Ser Arg Arg Ala
 145 150 155 160
 Arg Asn Tyr Lys Ile Leu Val Tyr Pro Val Thr Val Gln Gly Asn Ser
 165 170 175
 Ala Ala His Glu Ile Ser Lys Ala Ile Glu Val Met Asn Ala Glu Asn
 180 185 190
 Leu Ala Asp Val Leu Ile Ile Ala Arg Gly Gly Gly Ser Ile Glu Asp
 195 200 205
 Leu Trp Ala Phe Asn Glu Glu Ile Leu Val Lys Ala Ile His Ala Ser
 210 215 220
 Thr Ile Pro Ile Val Ser Ala Val Gly His Glu Thr Asp Tyr Thr Leu
 225 230 235 240
 Cys Asp Phe Ala Ser Asp Val Arg Ala Pro Thr Pro Ser Ala Ala Ala
 245 250 255
 Glu Ile Val Cys Lys Ser Ser Glu Glu Gln Val Gln Val Phe Glu Gly
 260 265 270
 Tyr Leu Arg His Leu Leu Ser His Ser Arg Gln Leu Leu Thr Ser Lys
 275 280 285
 Lys Gln Gln Leu Leu Pro Trp Arg Arg Phe Leu Asp Arg Ala Glu Phe
 290 295 300
 Tyr Thr Thr Ala Gln Gln Leu Asp Ser Ile Glu Ile Ala Ile Gln
 305 310 315 320
 Lys Gly Val Gln Gly Lys Ile His Glu Ser Lys Gln Arg Tyr Asp Asn
 325 330 335
 Ile Ser Arg Trp Leu Gln Gly Asp Leu Val Ser Arg Met Thr Cys Arg
 340 345 350
 Leu Gln Ser Leu Lys Lys Met Leu Ser Gln Ala Leu Ser His Lys Ala
 355 360 365
 Leu Ser Leu Gln Val Arg Cys His Gln Leu Lys Lys Ser Leu Thr Tyr
 370 375 380
 Pro Arg Gln Ile Gln Gln Ala Ser Gln Lys Leu Ser Pro Trp Arg Gln
 385 390 395 400
 Gln Leu Asp Thr Leu Ile Ser Arg Arg Leu His Tyr Gln Lys Glu Glu
 405 410 415
 Tyr Phe His Lys His Thr Arg Leu Lys His Ala His Asn Val Leu Glu
 420 425 430
 Gln Gln Leu Arg Ser His Val Gln Lys Leu Glu Leu Leu Gly Arg Arg
 435 440 445
 Leu Ser Arg Gly Cys Glu Leu Asn Leu Gln Asn Gln Lys Ile Ala Tyr
 450 455 460
 Ala Asn Val Lys Glu Thr Leu Ala Thr Ile Leu Glu Arg Arg Tyr Glu
 465 470 475 480
 Asn Ser Val Ala Arg Tyr Ser Ala Leu Lys Glu Gln Leu His Ser Leu
 485 490 495
 Asn Pro Lys Asn Val Leu Lys Arg Gly Tyr Ala Met Leu Phe Asp Phe

500 505 510
 Asn Glu Asn Ser Ala Met Ile Ser Val Asp Ser Leu Gln Glu Asn Ala
 515 520 525
 Arg Val Arg Ile Gln Leu Gln Asp Gly Glu Ala Ile Leu Thr Val Thr
 530 535 540
 Asn Ile Glu Ile Cys Lys Leu Ile Lys Gly
 545 550
 <210>1138
 <211>184
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>1138
 Met Thr Tyr Ala Gln Val Glu Val Leu Met Ala Thr Pro Asp Ile Ser
 1 5 10 15
 Lys Tyr His Gly Leu Arg Asp Arg Cys Leu Met Glu Leu Phe Tyr Ser
 20 25 30
 Ser Gly Leu Arg Ile Ser Glu Ile Val Ala Val Asn Lys Gln Asp Phe
 35 40 45
 Asp Leu Ser Thr His Leu Ile Arg Ile Arg Gly Lys Gly Lys Lys Glu
 50 55 60
 Arg Ile Ile Pro Val Thr Ser Asn Ala Ile Gln Trp Ile Gln Ile Tyr
 65 70 75 80
 Leu Asn His Pro Asp Arg Lys Arg Leu Glu Lys Asp Pro Gln Ala Ile
 85 90 95
 Phe Leu Asn Arg Phe Gly Arg Arg Ile Ser Thr Arg Ser Ile Asp Arg
 100 105 110
 Ser Phe Gln Glu Tyr Leu Arg Arg Ser Gly Leu Ser Gly His Ile Thr
 115 120 125
 Pro His Thr Ile Arg His Thr Ile Ala Thr His Trp Leu Glu Ser Gly
 130 135 140
 Met Asp Leu Lys Thr Ile Gln Ala Leu Leu Gly His Ser Ser Leu Glu
 145 150 155 160
 Thr Thr Thr Val Tyr Thr Gln Val Ser Val Lys Leu Lys Lys Gln Thr
 165 170 175
 His Gln Glu Ala His Pro His Ala
 180
 <210>1139
 <211>288
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>1139
 Met Ser His Leu Ile Pro Ser Leu Arg Asn Ser Val Thr Ser Tyr Phe
 1 5 10 15
 His Lys Pro Gln Pro Ile Lys Gln Ala Ala Pro Ser Lys Ser Ile Arg
 20 25 30
 Asp Ile Cys Asn Ile Ala Tyr Leu Ile Ile Ile Cys Val Leu Val Val
 35 40 45
 Val Val Leu Val Gly Ala Met Leu Cys Met Phe Ile Pro Ser Val Gly
 50 55 60
 Ile Pro Leu Cys Leu Ser Ser Leu Ala Leu Leu Val Leu Leu Ser Ile
 65 70 75 80
 Phe Asn Pro Cys Leu Ile Asn Trp Ile Ser Thr Lys Lys Thr Lys Glu
 85 90 95
 Ile Ala Pro Lys Asp Ala Ser Glu Ser Gln Pro Thr Lys Ser Ala Ser
 100 105 110
 Arg Lys Gly Ser Pro Gln Leu Ser Pro His His Asp His Glu Pro Lys
 115 120 125
 Asn Phe Ile Arg Thr Gln Leu Glu Lys Gly Val Asn Tyr Val Thr Asn
 130 135 140
 Lys Phe Lys Ser Gly Glu Glu Ser Pro His Ile Ser Asp Glu His His
 145 150 155 160
 Ser Pro Arg Gln Ser Lys Arg Ser Ser Glu Ile Glu Ser Ser Asp Glu
 165 170 175
 Ser Ser Pro Glu Leu His Arg Lys Ala Lys Gly Lys Ala Pro His Thr

180 185 190
 Ala Thr Thr Lys Gly Ser Lys Thr Ser Thr Thr Glu Ser Ser Lys Lys
 195 200 205
 Lys Lys Lys Thr Lys His Ser Leu His Arg Thr Thr Ser Ser Ile His
 210 215 220
 Lys Arg Ser Ala Pro Lys Pro Met Val Pro Ser Lys Lys Arg Lys Pro
 225 230 235 240
 Val Leu Leu Lys Lys Thr Val Pro Leu Pro Ile Glu Asp Leu Glu His
 245 250 255
 Gln Ser Ser Gly Asn Glu Ser Ser Asp Ser Ser Ser Pro Pro Pro Val
 260 265 270
 Gln Arg Lys Ala Ile Leu Pro Trp Phe Cys Lys Gln Pro Thr Asp Pro
 275 280 285

<210>1140

<211>153

<212>PRT

<213>Chlamydia pneumoniae

<400>1140

Met Leu Arg Arg Arg Ile Trp Lys Lys Thr Leu Thr Pro Asp Gln Glu
 1 5 10 15
 Asn Leu Ser Leu Pro Leu Pro Ser Pro Thr Thr Leu Lys Lys Ile His
 20 25 30
 Ala Leu His Ile Leu Val Arg Ser Gly Lys Thr Tyr Asn Glu Leu Ile
 35 40 45
 Gln Glu Gly Phe Ser Phe Thr Lys Ile Thr Asp Leu Gly Gln Ala Pro
 50 55 60
 Ser Pro Lys Gln Asp Ile Gly Phe Ser Tyr Asn Ser Leu Leu Pro Asn
 65 70 75 80
 Phe Tyr Phe His Ser Leu Val Ser Val Pro Asn Ile Ser Gly Glu Glu
 85 90 95
 Arg Ala Leu Asn Tyr His Lys Glu Gln Gln Glu Glu Met Ala Val Lys
 100 105 110
 Leu Lys Thr Met Gln Ala Cys Ser Phe Val Phe Arg Ser Leu His Leu
 115 120 125
 Pro Ser Met Gln Thr Lys Asp Lys Lys Ala Gly Phe Gly Leu Leu Thr
 130 135 140
 Phe Phe Pro Trp Lys Ile Tyr Pro Leu
 145 150

<210>1141

<211>136

<212>PRT

<213>Chlamydia pneumoniae

<400>1141

Leu Ala Met Ala Lys Asn Val Pro Leu Leu Gly Tyr Ser Ser Leu Glu
 1 5 10 15
 Gly Tyr Leu Leu Ser Lys Asp Glu Lys Lys Ala Leu Met Leu Pro Leu
 20 25 30
 Gly Lys Arg Gly Gly Val Leu Thr Leu Ser Ser Glu Ile Pro Glu Glu
 35 40 45
 Gly Leu Asn Glu Lys Arg Arg Gly Val Gly Pro Gly Ala Leu Leu Ser
 50 55 60
 Tyr Glu Glu Ala Ser Asp Tyr Cys Val Ala His Gly Tyr Tyr His Val
 65 70 75 80
 Ile Ser Pro Asn Pro Gln Leu Phe Ala Ser Ser Phe Ser Asp Lys Ile
 85 90 95
 Thr Val Glu Glu Val Ala Pro Ser Val Glu Gln Ile Arg Arg His Val
 100 105 110
 Ile Ser Gln Phe Met Phe Val Glu Tyr Asp Lys Gln Leu Ser Pro Asp
 115 120 125
 Tyr Arg Ser Tyr Ser Cys Ile Phe
 130 135

<210>1142

<211>82

<212>PRT

<213>Chlamydia pneumoniae

<400>1142

Met Ile Glu Phe Pro Ser Ala Val Trp Met Ile Glu Glu Ile Leu Pro
1 5 10 15
Glu Cys Asp Phe Leu Ser Ile Gly Thr Asn Asp Leu Val Gln Tyr Thr
20 25 30
Leu Gly Ile Ser Arg Glu Ser Ala Leu Pro Lys His Leu Asn Val Thr
35 40 45
Leu Pro Pro Ala Val Ile Arg Met Ile His His Val Leu Gln Ala Ala
50 55 60
Asn Lys Ile Arg Phe Leu Leu Ala Phe Val Glu Arg Pro Gln Gly Ser
65 70 75 80
Ser Val

<210>1143

<211>108

<212>PRT

<213>Chlamydia pneumoniae

<400>1143

Leu Phe Asp Ala Leu His Ile Ser Leu His Arg Asn Ile Pro Arg Met
1 5 10 15
Gly Asn His Glu Thr Tyr Ile His Pro Gly Val Leu Pro Ser Ser His
20 25 30
Ala Gln Asp Val Ser Arg Ser Thr Val Tyr Pro Ser Arg Ser Phe Ile
35 40 45
Met Arg Arg Met Leu Met Gly Trp Asn Phe Asn Arg Val Pro Ser Lys
50 55 60
Ser Ser Glu Gln Leu Met Asp Gly His Arg Ile Pro Leu Ile Phe Phe
65 70 75 80
Gly Lys His His Pro Thr Ile Ser Ile Leu Asn Val Asn Arg Phe Ser
85 90 95
Trp Leu Ser Ile Phe Tyr Asn Gly Glu Arg Gly Phe
100 105

<210>1144

<211>141

<212>PRT

<213>Chlamydia pneumoniae

<400>1144

Met Ala Thr Lys Thr Lys Thr Gln Trp Thr Cys Asn Gln Cys Gly Ala
1 5 10 15
Thr Ala Pro Lys Trp Leu Gly Gln Cys Pro Gly Cys His Asn Trp Asn
20 25 30
Ser Leu Val Glu Glu Tyr Val Pro Gln Ala Arg Ser Gly Thr Ser Ser
35 40 45
Arg Ser Ser Thr Ser Ala Ile Ala Leu Ser Ser Ile Glu Leu Glu Asn
50 55 60
Glu Ser Arg Ile Phe Ile Asp His Ala Gly Trp Asp Arg Ile Leu Gly
65 70 75 80
Gly Gly Val Val Arg Gly Ser Leu Thr Leu Leu Gly Gly Asp Pro Gly
85 90 95
Ile Gly Lys Ser Thr Leu Leu Leu Gln Thr Ala Glu Arg Leu Ala Ser
100 105 110
Gln Lys Tyr Lys Val Leu Tyr Val Cys Gly Glu Glu Ser Val Thr Gln
115 120 125
Thr Ser Leu Arg Ala Lys Arg Ser Ile Ser His His Leu
130 135 140

<210>1145

<211>77

<212>PRT

<213>Chlamydia pneumoniae

<400>1145

Met Thr Lys Ile Gln Cys Ser Ala Gln Tyr Tyr Arg Ser Arg Pro Ala
1 5 10 15
Glu Arg Ala Gln Thr Pro Pro Gln Pro Phe Leu Ala Arg Asp Arg Ala

WO 99/27105

20 25
 Asp Phe Trp Glu Arg His Pro Arg Phe Ser Ala Cys Cys Arg Val Leu
 35 40 45
 Leu Leu Val Ala Trp Val Val Leu Ala Leu Leu Phe Leu Phe Val Met
 50 55 60
 Leu Leu Pro Leu Ala Ala Gly Ser Tyr Leu Leu Ala Phe
 65 70 75

<210>1146

<211>121

<212>PRT

<213>Chlamydia pneumoniae

<400>1146

Leu Thr Tyr Thr Arg Val Asn Asp Gly His Leu Ala Pro Phe Arg Ala
 1 5 10 15
 Gly Ala Lys Trp Ile Leu Ile His Tyr Val Arg Leu Arg Arg Gln His
 20 25 30
 Asn Gln Asn Asp Phe Phe Thr Pro Gly His Ser Cys Tyr Tyr Ala Arg
 35 40 45
 Leu Ala Phe Asn Gln Thr Gln Arg Leu Tyr His Gln Leu Phe Asn Val
 50 55 60
 Glu Lys Leu Arg Ser Ile Tyr Ala Asn Met Asp Lys Asp Pro Leu Cys
 65 70 75 80
 His Pro Trp Ala Xaa Ile Pro Ile Tyr Asp Leu Leu Lys Thr Glu Asp
 85 90 95
 His Gly Asp Gly Phe Leu Glu Gln Gln Glu Asp Arg Glu Tyr Pro Ser
 100 105 110
 Arg Ala Ala Gln Asp Gln Phe Trp Gly
 115 120

<210>1147

<211>170

<212>PRT

<213>Chlamydia pneumoniae

<400>1147

Val Ser Ala Glu Phe Lys Leu Met Leu Asp Leu Arg Gln Tyr Met Gly
 1 5 10 15
 Ser Val Met Gln Arg Leu Gly Leu Ser Asn Leu Phe His Cys Leu Leu
 20 25 30
 Leu Phe Leu Arg Tyr Tyr Tyr Ser Lys Leu Val Phe Gly Leu Thr Val
 35 40 45
 Leu Leu Ala Ala Ile Ser Val Ile Cys Leu Leu Gly Cys Ser Glu Pro
 50 55 60
 Ser Leu Ser Ser Phe Thr Glu Tyr Val Gly Pro Glu Tyr Ser Ala Ala
 65 70 75 80
 Ala Gln Leu Ser Ile Glu Gln Ser Cys His Asp Glu Val Tyr Gly Gln
 85 90 95
 Gln Val Val Val Thr Trp Ser Leu Pro Ser Arg Met Arg Lys Cys Leu
 100 105 110
 Pro Val Thr Leu Tyr Leu Trp Val Tyr Tyr Gly Asn Gly Lys Val Glu
 115 120 125
 Lys Leu Thr Tyr Glu Val Asn Gln Ser Ala Gly Tyr Arg Val Tyr Cys
 130 135 140
 Leu Lys Gly Leu Glu Tyr Lys Glu Leu Gln Gly Ile Ile Ser Tyr Pro
 145 150 155 160
 Leu Arg Tyr Val Ala Gly Ile Lys Arg Leu
 165 170

<210>1148

<211>101

<212>PRT

<213>Chlamydia pneumoniae

<400>1148

Met Val Ser Pro Leu Ser Leu Phe His Lys Met Leu Leu Glu Asn Trp
 1 5 10 15
 Thr Pro Val Glu Glu Pro Phe Pro Trp Pro Pro Ala Glu Lys Asn Gln
 20 25 30

Lys Ile Phe Ala Trp Ala Leu Asn Gln Ser Lys Leu Ile Phe Val Ser
 35 40 45
 Thr Ser Gly Asn Ile Ala Gln Pro Arg Leu Val Thr Asp Ser Met Ser
 50 55 60
 Met Met Ile Val Asn Ala Ala Asn Arg Thr Met Ser Arg Asp Gly Ala
 65 70 75 80
 Gly Thr Asn Gln Val Leu Ser Ala Ala Val Ser Val Asp Ser Trp Gly
 85 90 95
 Cys Arg Asn Asp Leu
 100

<210>1149

<211>119

<212>PRT

<213>Chlamydia pneumoniae

<400>1149

Val Ala Leu Lys Ile Arg Leu Arg Gln Gln Gly Arg Arg Asn His Val
 1 5 10 15
 Val Tyr Arg Leu Val Leu Ala Asp Val Glu Ser Pro Arg Asp Gly Lys
 20 25 30
 Tyr Ile Glu Leu Leu Gly Trp Tyr Asp Pro His Ser Ser Ile Asn Tyr
 35 40 45
 Gln Leu Lys Ser Glu Arg Ile Phe Tyr Trp Leu Glu Arg Gly Ala Gln
 50 55 60
 Leu Ser Ser Lys Ala Glu Ala Leu Val Lys Gln Gly Ala Pro Gly Val
 65 70 75 80
 Tyr Ser Ala Leu Leu Ser Lys Gln Glu Ala Arg Lys Leu Val Val Arg
 85 90 95
 Lys Lys Arg Arg Ala Tyr Arg Gln Arg Arg Ser Thr Gln Arg Glu Glu
 100 105 110
 Ala Ala Lys Asp Ala Thr Lys
 115

<210>1150

<211>170

<212>PRT

<213>Chlamydia pneumoniae

<400>1150

Met Ser Glu Val Lys Pro Leu Phe Leu Lys Asn Asp Ser Phe Asp Leu
 1 5 10 15
 Ala Thr Gln Arg Phe Gln Asn Leu Ile Asn Met Leu Gln Glu Gln Ala
 20 25 30
 Glu Ile Tyr Asn Glu Tyr Glu Glu Lys Asn Ala Arg Val Gln Asn Glu
 35 40 45
 Ile Lys Glu Gln Lys Asp Phe Val Lys Arg Cys Ile Glu Asp Phe Glu
 50 55 60
 Ala Arg Gly Leu Gly Val Leu Lys Glu Glu Leu Ala Ser Leu Thr Arg
 65 70 75 80
 Asp Phe His Asp Lys Ala Lys Ala Glu Thr Ser Met Leu Ile Glu Cys
 85 90 95
 Pro Cys Ile Gly Phe Tyr Tyr Ser Ile His Gln Glu Glu Gln Arg Gln
 100 105 110
 Arg Gln Glu Arg Leu Gln Lys Met Ala Glu Arg Tyr Arg Asp Cys Lys
 115 120 125
 Gln Val Leu Glu Ala Val Gln Val Glu Gln Lys Asp Met Ile Ser Ser
 130 135 140
 Arg Val Val Val Asp Asp Ser Tyr Phe Glu Glu Lys Glu Glu Gln
 145 150 155 160
 Lys Val Asp Asn Arg Lys Lys Glu Gln Asp
 165 170

<210>1151

<211>90

<212>PRT

<213>Chlamydia pneumoniae

<400>1151

Leu Val Phe Ser Tyr Tyr Cys Met Gly Leu Phe Phe Phe Ser Gly Ala

1 5 10 15
 Ile Ser Ser Cys Gly Leu Leu Val Ser Leu Gly Val Gly Leu Gly Leu
 20 25 30
 Ser Val Leu Gly Val Leu Leu Leu Leu Leu Ala Gly Leu Leu Leu Phe
 35 40 45
 Lys Ile Gln Ser Met Leu Arg Glu Val Pro Lys Ala Pro Asp Leu Leu
 50 55 60
 Asp Leu Glu Asp Ala Ser Glu Arg Leu Arg Val Lys Ala Ser Arg Ser
 65 70 75 80
 Leu Ala Ser Leu Pro Lys Lys Ser Val Ser
 85 90

<210>1152

<211>94

<212>PRT

<213>Chlamydia pneumoniae

<400>1152

Leu Leu Leu Cys Ser Ala Met Gly Ile Phe Ser Ser Ala Lys Ala Leu
 1 5 10 15
 Ile Ala Trp Asn Lys Ala Ser Leu Asn Leu Ser Pro Ala Leu Leu Gly
 20 25 30
 Ala Ile Leu Ile Phe Glu Pro Ile Phe Gly Leu Val Leu Thr Tyr Leu
 35 40 45
 Tyr Ser Gln Ser Leu Pro Ser Leu Gln Glu Gly Ile Gly Ile Phe Leu
 50 55 60
 Met Leu Gly Gly Ser Leu Leu Cys Leu Val Leu Phe Gly Arg Lys Val
 65 70 75 80
 Gln Lys Ser Leu Glu Asn Ser Gln Val Ser Ser Ser Asn Glu
 85 90

<210>1153

<211>248

<212>PRT

<213>Chlamydia pneumoniae

<400>1153

Met Phe Pro Ser Ala Asn Gln Glu Ser Arg Thr Arg Asn Val Pro Leu
 1 5 10 15
 Gly Ile Phe His Gly Leu Val Ala Cys Leu Tyr Trp Gly Ile Val Phe
 20 25 30
 Val Ile Pro Asn Phe Leu Gly Ser Phe Gly Asp Leu Asp Ile Val Leu
 35 40 45
 Thr Arg Tyr Thr Ile Phe Gly Ile Phe Ser Leu Ile Ala Cys Ala Ile
 50 55 60
 Lys Asn Pro Ser Val Ile Lys Lys Thr Pro Leu Tyr Ile Trp Arg Lys
 65 70 75 80
 Ser Leu Leu Trp Thr Leu Leu Ile Asn Pro Val Tyr Tyr Phe Gly Ile
 85 90 95
 Thr Leu Gly Ile Arg Tyr Val Gly Ser Ala Ile Thr Val Val Ile Ala
 100 105 110
 Ser Leu Ala Pro Thr Ala Val Leu Tyr His Ser Asn Thr Lys Gln Lys
 115 120 125
 Glu Leu Pro Tyr Ser Leu Leu Phe Ala Ile Ser Ser Val Ile Ile Thr
 130 135 140
 Gly Val Ile Leu Thr His Leu Ser Ala Leu Asn Leu Pro Thr Ala Ala
 145 150 155 160
 Ser Pro Leu Tyr Ser Ile Leu Gly Val Ile Ala Val Ile Leu Ser Thr
 165 170 175
 Ser Leu Trp Val Ile Tyr Val Ile Arg Asn Gln Ser Leu Leu Glu Lys
 180 185 190
 His Pro Xaa Leu Thr Pro Asp Tyr Leu Glu Leu Pro His Arg Asn Gln
 195 200 205
 Arg Phe Asp His Leu Pro Pro Tyr Asp Tyr Tyr Ser Arg Ser Leu Trp
 210 215 220
 Asn Tyr Pro Arg Asn Thr Gln Ser Tyr Leu Ala Tyr Thr Gly Ile Arg
 225 230 235 240
 Ala Thr Ala Leu Leu Val Ala Met

<210>1154

<211>149

<212>PRT

<213>Chlamydia pneumoniae

<400>1154

Met Ala Val Gln Ser Ile Lys Glu Ala Val Thr Ser Ala Ala Thr Ser
 1 5 10 15
 Val Gly Cys Val Asn Cys Ser Arg Glu Ala Ile Pro Ala Phe Asn Thr
 20 25 30
 Glu Glu Arg Ala Thr Ser Ile Ala Arg Ser Val Ile Ala Ala Ile Ile
 35 40 45
 Ala Val Val Ala Ile Ser Leu Gly Leu Gly Leu Val Val Leu Ala
 50 55 60
 Gly Cys Cys Pro Leu Gly Met Ala Ala Gly Ala Ile Thr Met Leu Leu
 65 70 75 80
 Gly Val Ala Leu Leu Ala Trp Ala Ile Leu Ile Thr Leu Arg Leu Leu
 85 90 95
 Asn Ile Pro Lys Ala Glu Ile Pro Ser Pro Gly Asn Asn Gly Glu Pro
 100 105 110
 Asn Glu Arg Asn Ser Ala Thr Pro Pro Leu Glu Gly Gly Val Ala Gly
 115 120 125
 Glu Ala Gly Arg Gly Gly Gly Ser Pro Leu Thr Gln Leu Asp Leu Asn
 130 135 140
 Ser Gly Ala Gly Ser
 145

<210>1155

<211>124

<212>PRT

<213>Chlamydia pneumoniae

<400>1155

Met Gly Asn Ser Cys Phe Trp Arg Gly Gly Leu Leu Arg Tyr Pro Cys
 1 5 10 15
 Gly Glu Glu Ile Glu Lys Ser Arg Ala Asn Phe Phe Thr Ala Asp Thr
 20 25 30
 Thr Thr Val Met Ser Tyr Pro Pro Asn Pro Tyr Gly Leu Tyr Asp Met
 35 40 45
 Ala Gly Asn Val Tyr Glu Trp Cys Gln Asp Trp Tyr Gly Tyr Asp Phe
 50 55 60
 Tyr Glu Ile Ser Ala Gln Glu Pro Glu Ser Pro Gln Gly Pro Ala Gln
 65 70 75 80
 Gly Val Tyr Arg Val Leu Arg Gly Gly Cys Trp Lys Ser Leu Lys Asp
 85 90 95
 Asp Leu Arg Cys Ala His Arg His Arg Asn Asn Pro Gly Ala Val Asn
 100 105 110
 Ser Thr Tyr Gly Phe Arg Cys Ala Lys Asn Ile Asn
 115 120

<210>1156

<211>181

<212>PRT

<213>Chlamydia pneumoniae

<400>1156

Lys Leu Lys Leu Leu Lys Ala Ser Phe Ile Lys Leu Leu Leu Thr Leu
 1 5 10 15
 Asp Trp Pro Thr Glu Leu Leu Leu Lys Asn Arg Pro Phe Asp Phe Thr
 20 25 30
 Gly His Pro Glu Glu Glu Lys Leu Ile Lys Asp Ile Leu Leu Lys Glu
 35 40 45
 Glu Gly Asn Lys Tyr Phe Ser Leu Glu Ser Lys Lys Leu Leu Ala Arg
 50 55 60
 His Met Met His Asn Ile Val Val Leu Ser Glu Glu Pro Gly Arg Ser
 65 70 75 80
 Ala Phe Leu Gly Arg Thr Ala Phe Phe Pro Asn Lys Tyr Pro Ile Ala
 85 90 95

Gln Gly Gly Val Gly Ile Pro Ser Thr Ile Gly Asn Leu Phe Thr Ile
 100 105 110
 Trp Tyr Cys Phe Tyr Phe Tyr Arg Ala Ala Thr Pro Gln Ser Asp His
 115 120 125
 Pro Asp Gly Cys Gly Phe Ile Leu Leu Glu Arg Leu Lys Glu Leu Gly
 130 135 140
 Ala Gly Phe Phe Tyr Cys Asp Leu Arg Glu Ser Asn Thr Thr Gly Phe
 145 150 155 160
 Thr Leu Phe Phe Glu Gly Ser Asn Lys Gly Val Leu Lys Asn His Leu
 165 170 175
 Phe Ile Arg Asp Glu
 180

<210>1157

<211>131

<212>PRT

<213>Chlamydia pneumoniae

<400>1157

Met Asn Ile Tyr Gln Phe Ser Pro Gly Ala Ser Pro Asn Trp Gln Ala
 1 5 10 15
 Ser Leu Met Ala Gln Leu Asn Ser Tyr Phe Cys Leu Gly Gly Glu Thr
 20 25 30
 Val Thr Arg Ile Ile Ser Leu Arg Pro Ser Gly Leu Ile Leu Ala Lys
 35 40 45
 Lys Glu Lys Ala Val Val Ser Thr Ala Glu Lys Ile Leu Lys Ile Leu
 50 55 60
 Ser Phe Ile Leu Phe Pro Leu Val Leu Ile Ala Leu Ala Ile Arg Tyr
 65 70 75 80
 Leu Leu Tyr Asn Lys Phe Asn Lys Asp Leu Asp Arg Ala Val Phe Phe
 85 90 95
 Ile Pro Thr Glu Ile Thr Lys Ala Glu Glu Leu Ile Ile Ala Lys Asn
 100 105 110
 Ser Cys Ala Ser Glu Arg Ser Gly Ser Asn Cys Phe Ser Ala Leu Leu
 115 120 125
 Phe Ser Ser
 130

<210>1158

<211>111

<212>PRT

<213>Chlamydia pneumoniae

<400>1158

Met Leu Gln His Leu Phe Ile Asp Gly Ile Thr Gln Glu Asn Pro Glu
 1 5 10 15
 Ala Leu Pro Asn Asn Thr Ser Gly Arg Leu Thr Leu Phe Pro Ser Val
 20 25 30
 Arg Tyr Ile Tyr Ser His Phe Thr Pro Gln Asn Pro Thr Ile Trp Pro
 35 40 45
 Gln Val Phe Phe Arg Gln Gly Pro Leu Asp Glu Asp Arg Gly Gly Gly
 50 55 60
 Phe Glu Ile Leu Glu Gln Leu Gln Glu Leu Gly Val Arg Phe Pro Ile
 65 70 75 80
 Cys Pro Ser Gln Gly Pro Asp Asn Pro Asn Phe Gln Gly Phe Gln Gly
 85 90 95
 Ile Arg Ile Tyr Trp Glu Asp Ser Tyr Gln Pro Asn Lys Glu Val
 100 105 110

<210>1159

<211>111

<212>PRT

<213>Chlamydia pneumoniae

<400>1159

Met Ser Glu Ser Ile Asn Arg Ser Ile His Leu Glu Ala Ser Thr Pro
 1 5 10 15
 Phe Phe Ile Lys Leu Thr Asn Leu Cys Glu Ser Arg Leu Val Lys Ile
 20 25 30
 Thr Ser Leu Val Ile Ser Leu Leu Ala Leu Val Gly Ala Gly Val Thr

35 40
 Leu Val Val Leu Phe Val Ala Gly Ile Leu Pro Leu Leu Pro Val Leu
 50 55 60
 Ile Leu Glu Ile Ile Leu Ile Thr Val Leu Val Leu Leu Phe Cys Leu
 65 70 75 80
 Val Leu Glu Pro Tyr Leu Ile Glu Lys Pro Ser Lys Ile Lys Glu Leu
 85 90 95
 Pro Lys Val Asp Glu Leu Ser Val Val Glu Thr Asp Ser Thr Leu
 100 105 110
 <210>1160
 <211>75
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>1160
 Leu Ala Phe Asn Glu Ser Val Arg Ile Tyr Arg Lys Leu Phe Asn Thr
 1 5 10 15
 Ala Glu Leu Lys Gln Met Tyr Gly Ala Gly Asp Tyr Glu Gln Gln Asn
 20 25 30
 Glu Asp Asn Leu Lys Ser Ile Leu Ser Phe Val Gln Ile Leu Asp Glu
 35 40 45
 Lys Asp Gly Phe Asp Asp Phe Leu Ala Thr His Lys Asp Thr Thr Phe
 50 55 60
 Ile Gly Arg Gly Gly Ala Asp Ile Phe Cys Ser
 65 70 75
 <210>1161
 <211>87
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>1161
 Met Glu Glu Ala Leu Thr Phe Asp Asp Val Leu Leu Ile Pro Gln Tyr
 1 5 10 15
 Ser Glu Ile Leu Pro Ser Glu Val Ser Leu Lys Thr Ala Ile Ser Lys
 20 25 30
 Thr Leu Ser Leu Asn Ile Pro Ile Leu Ser Ala Ala Met Asp Ser Val
 35 40 45
 Thr Glu Thr Ala Met Ala Leu Ala Leu Ala Gln Glu Gly Gly Leu Gly
 50 55 60
 Ile Leu His Lys Asn Met Ser Glu Val Glu Gln Ser Ser Ser Val Arg
 65 70 75 80
 Lys Ile Lys Glu Ala Tyr Pro
 85
 <210>1162
 <211>91
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>1162
 Met Asp Phe Ser Val Phe Pro Asp Arg Phe Val Glu Ser Thr Ser Pro
 1 5 10 15
 Ser Pro Ile Glu Asp Ile Asp Ala Lys Thr Leu Val Ser Asn Cys Cys
 20 25 30
 His Tyr Cys Ser Arg Cys Leu Phe Ile Phe Leu Ser Leu Leu Ser Ile
 35 40 45
 Ile Ile Cys Phe Ser Val Tyr Gly Thr Ser Gly Glu Thr Ala Ser Leu
 50 55 60
 Val Phe Gly Ile Leu Ser Leu Ile Val Leu Val Leu Leu Ile Ile Glu
 65 70 75 80
 Cys Arg Asn Arg Glu Cys Cys Arg Arg Ile Ser
 85 90
 <210>1163
 <211>95
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>1163
 Leu Gln Ala Gly Arg Ser Gly Ile Ile Pro Gly Lys Lys Ala Ile Leu

1 5 10 15
 Leu Asn Val Asn Asp Ala Lys Thr Pro Asn Tyr Ser Cys Ile Phe Glu
 20 25 30
 Ser Ile Gly Phe Phe Asn Glu Gln Asp Leu Glu Ala Gln His Asn Gln
 35 40 45
 Gln Ala Ala Leu Val Arg Lys Ile Leu Lys Val Val Pro His His Phe
 50 55 60
 Leu Lys Gly Leu Ile Ala Lys Leu Pro Arg Ser Leu Lys Lys Asp Arg
 65 70 75 80
 Lys Phe Met Ser Ser Leu Ile Phe Thr Lys Leu Ser Tyr Cys Phe
 85 90 95

<210>1164

<211>95

<212>PRT

<213>Chlamydia pneumoniae

<400>1164

Met Met Lys Ile Lys Lys Ala Ile Ser Arg His Ile Asp Arg Tyr Leu
 1 5 10 15
 Ser Pro Met Lys Ile Pro Ile Met Ala His Pro Gly Gln Lys Asp Ser
 20 25 30
 Pro Ser Thr Leu Ser Phe His Phe Pro Leu Ser Tyr Trp Phe Lys Glu
 35 40 45
 Leu Ser Ser His Gly Phe Leu Val Ser Gly Leu Glu Glu Trp Thr Ser
 50 55 60
 Ser Lys Thr Ser Thr Gly Lys Arg Ala Lys Ala Glu Asn Leu Cys Arg
 65 70 75 80
 Lys Glu Phe Pro Leu Phe Leu Met Ile Ser Cys Ile Lys Ile Lys
 85 90 95

<210>1165

<211>238

<212>PRT

<213>Chlamydia pneumoniae

<400>1165

Met Glu Asn Leu Ser Ser Ala Pro Ser Arg Ser Ile Trp Lys Ser Ile
 1 5 10 15
 Ile Gln Asn Lys Met Leu Val Leu Gly Leu Thr Thr Leu Ile Ile Leu
 20 25 30
 Met Leu Gly Ala Leu Leu Leu Pro Trp Phe Tyr Gln Asp Tyr Glu Gln
 35 40 45
 Thr Ser Leu Lys Asp Ile Leu Val Ser Pro Cys Ser Arg Phe Pro Phe
 50 55 60
 Gly Thr Asp Thr Leu Gly Arg Cys Met Phe Ala Arg Thr Leu Arg Gly
 65 70 75 80
 Leu Arg Leu Ser Leu Leu Ile Ala Thr Ile Ala Thr Leu Ile Asp Val
 85 90 95
 Cys Val Gly Leu Leu Trp Ala Thr Val Ala Ile Ser Gly Gly Lys Lys
 100 105 110
 Ile Asp Phe Leu Met Met Arg Thr Thr Glu Ile Leu Phe Ser Leu Pro
 115 120 125
 Arg Ile Pro Ile Ile Ile Leu Leu Val Ile Phe His His Gly Leu
 130 135 140
 Leu Pro Leu Ile Leu Ala Met Thr Ile Thr Gly Trp Ile Pro Ile Ser
 145 150 155 160
 Arg Ile Ile Tyr Gly Gln Phe Leu Leu Leu Lys Asn Lys Pro Phe Val
 165 170 175
 Leu Ser Ala Lys Ala Met His Ala Ser Thr Phe His Ile Leu Lys Lys
 180 185 190
 His Leu Leu Pro Asn Thr Leu Ala Pro Ile Ile Ser Thr Leu Ile Phe
 195 200 205
 Thr Ile Pro Asn Ala Ile Tyr Thr Glu Ala Phe Ile Ser Phe Leu Gly
 210 215 220
 Leu Gly Ile Gln Pro Pro Gln Ala Lys Pro Arg His Leu Ser
 225 230 235
 <210>1166

<211>211

<212>PRT

<213>Chlamydia pneumoniae

<400>1166

Met Gly Pro Leu Lys Lys Glu Glu Lys Thr Ile Leu Met Ile Phe Phe
1 5 10 15
Leu Leu Val Val Leu Trp Thr Phe Gly Asp Leu Leu Gly Ile Ser Ala
20 25 30
Thr Thr Ala Ala Leu Ile Gly Leu Ser Leu Leu Ile Leu Thr Asn Ile
35 40 45
Leu Asp Trp Gln Lys Asp Val Ile Ala Asn Thr Thr Ala Trp Glu Thr
50 55 60
Phe Ile Trp Phe Gly Ala Leu Ile Met Met Ala Ser Phe Leu Asn Gln
65 70 75 80
Leu Gly Phe Ile Pro Leu Val Gly Asp Ser Ala Ala Ala Leu Val Ser
85 90 95
Gly Leu Ser Trp Lys Ile Gly Phe Pro Leu Leu Phe Leu Ile Tyr Phe
100 105 110
Tyr Ser His Tyr Leu Phe Ala Ser Asn Thr Ala His Ile Gly Ala Met
115 120 125
Tyr Pro Ile Phe Leu Ala Val Ser Ile Ser Leu Gly Thr Asn Pro Ile
130 135 140
Phe Ala Ala Leu Thr Leu Ala Phe Ala Ser Asn Leu Phe Gly Gly Leu
145 150 155 160
Thr His Tyr Gly Ser Gly Pro Ala Pro Leu Tyr Phe Gly Ser His Leu
165 170 175
Val Thr Val Gln Glu Trp Trp Arg Ser Gly Phe Ala Leu Ser Ile Val
180 185 190
Asn Ile Val Ile Trp Ile Gly Ile Gly Ser Leu Trp Trp Lys Ala Leu
195 200 205
Gly Leu Ile
210

<210>1167

<211>81

<212>PRT

<213>Chlamydia pneumoniae

<400>1167

Leu Lys Met Glu Thr Tyr Ser Phe Ser Thr Glu Leu Gln Lys Asn Thr
1 5 10 15
Ser Leu Tyr Ile Met Glu Lys Leu Asp Ser Tyr Phe Ser Phe Gln Gly
20 25 30
Lys Arg Thr Arg Val Ile Ala Ile Thr Pro Ala Gly Leu Ala Ile Ala
35 40 45
Tyr Glu Gln Asn Ile His Leu Ser Met Thr Val Lys Ile Leu Lys Val
50 55 60
Leu Ser Phe Pro Arg Ser Leu Leu Arg Thr Thr Ser Leu Trp Tyr Arg
65 70 75 80
Pro

<210>1168

<211>228

<212>PRT

<213>Chlamydia pneumoniae

<400>1168

Leu Lys Gly Phe Leu Ser Val Asn Glu Leu Ile Phe Gly Phe Gln Thr
1 5 10 15
Phe Ser Val Val Val Leu Gly Val Phe Ala Ser Arg Gly Lys Ala
20 25 30
Trp Leu Thr Gly Trp Leu Ser Leu Leu Ser Ser Ile Met Asn Val Phe
35 40 45
Val Leu Lys Gln Ile His Leu Trp Gly Phe Glu Val Thr Ser Ala Asp
50 55 60
Val Tyr Val Ile Gly Leu Leu Thr Cys Leu Asn Tyr Ala Arg Glu His
65 70 75 80

Tyr Glu Lys Asn Asp Ile Asn Asp Ala Met Leu Cys Ser Trp Val Ile
 85 90 95
 Ser Ile Ala Phe Leu Val Leu Thr Gln Leu His Leu Phe Leu Ile Pro
 100 105 110
 Ser Pro Asn Asp Ser Ser Gln Glu His Phe Leu Ala Leu Phe Ser Ser
 115 120 125
 Thr Pro Arg Ile Val Val Ala Ser Leu Val Thr Leu Ile Phe Val Gln
 130 135 140
 Ile Val Asp Ile Lys Leu Phe Thr Phe Leu Gln Arg Val Phe Ser Lys
 145 150 155 160
 Lys Tyr Phe Ala Met Arg Ser Thr Ile Ser Leu Leu Phe Ser Gln Leu
 165 170 175
 Ile Asp Thr Ile Ile Phe Ser Phe Leu Gly Leu Tyr Gly Leu Val Ser
 180 185 190
 Asn Leu Cys Asp Val Met Ile Phe Ala Met Leu Val Lys Gly Ile Val
 195 200 205
 Ile Thr Leu Ala Ile Pro Thr Leu Thr Val Thr Lys Ala Val Leu Asp
 210 215 220
 Arg Arg Ser Ser
 225

<210>1169

<211>189

<212>PRT

<213>Chlamydia pneumoniae

<400>1169

Leu Gly Ile Phe Cys Phe Lys Lys Ile Asn Leu Phe Lys Thr Phe Ile
 1 5 10 15
 Leu Met Asn Asn Asn Val Tyr Leu Phe Cys Phe Leu Ile Phe Leu Ser
 20 25 30
 Lys Lys Val Phe Phe Glu Ser Tyr Glu Asp Phe Ala Asn Val Ala Ser
 35 40 45
 Ser Trp Pro Lys Ser Leu Arg Ala Leu Val Gln Gly Arg Tyr Phe Val
 50 55 60
 Asp Ser Glu Leu Lys Glu Thr Pro Tyr Arg Ile His Asp Phe Lys Lys
 65 70 75 80
 Thr Pro Ile His His Arg Leu Tyr Arg Ser Leu Pro Ile Ile Ser Thr
 85 90 95
 Ile Gly Gly Ile Ile Arg Leu Ile Glu Ala His Ser Gly Pro Ile His
 100 105 110
 Pro Arg Asp Lys Met Lys Tyr Arg Phe Glu Val Leu Gln Ala Val Ile
 115 120 125
 Glu Ile Leu Gly Leu Gly Val Leu Ile Leu Val Phe Asp Ile Ile Gly
 130 135 140
 Cys Phe Leu Ala Phe Leu Val Ala Ile Ile Leu Ser Leu Leu Leu Tyr
 145 150 155 160
 Cys Asn Ser Thr Phe Thr Cys Val Gln Asn Leu Ser Phe Thr Glu Arg
 165 170 175
 Met Leu Glu Gly Ile Gly Glu Ala Val Asn Phe Leu Ala
 180 185

<210>1170

<211>92

<212>PRT

<213>Chlamydia pneumoniae

<400>1170

Val Gly Leu Ser Tyr Trp Asp Ser Gly Phe Val Val Leu Ala Cys Lys
 1 5 10 15
 Val Leu Ala Thr Ala Leu Lys Phe Leu Phe Ser Lys Ala Ser Ser Lys
 20 25 30
 Ile Lys Gln Met Lys Trp Arg Glu Lys Ala Arg Asn Leu Ala Ala Lys
 35 40 45
 Asp Thr Val Gln Ser Ile Lys Glu Phe Cys Ser Val Asp Leu Thr Ser
 50 55 60
 Cys Phe Thr Arg Cys Phe Arg Leu Arg Asn Arg Val Val Glu Glu Gly
 65 70 75 80

Ala Ser Glu Asn Gln Thr Val Arg Glu Ile Ile Val
85 90

<210>1171

<211>130

<212>PRT

<213>Chlamydia pneumoniae

<400>1171

Met Val Asn Arg Tyr Lys Ser Ser Ala Glu Phe Ser Ala Asp His Tyr
1 5 10 15
Tyr Asp Asp Asn Leu Val Arg Met Gly Tyr Lys Arg Asn Leu Arg Gly
20 25 30
Leu Ala Pro Val Glu Asn Glu Val Cys Leu Phe Glu Glu Asn Asn Leu
35 40 45
Leu Glu Ser Val Met Ala Ser Ile Pro Ile Met Gly Ser Ile Leu Gly
50 55 60
Leu Gly Arg Leu His Ser Val Trp Ser Thr Gln Asp Pro Lys Asp Ser
65 70 75 80
Lys Ile Ser Ile Ile Phe His Thr Ala Leu Gly Ile Leu Glu Thr Leu
85 90 95
Gly Leu Gly Ile Ile Val Leu Leu Ile Lys Ile Thr Ile Thr Ile Leu
100 105 110
Leu Ile Leu Phe Thr Pro Cys Leu Leu Cys Tyr Phe Met Tyr Ser Cys
115 120 125

Cys Leu

130

<210>1172

<211>125

<212>PRT

<213>Chlamydia pneumoniae

<400>1172

Met Thr Lys Asn Ala Ile Asn Ser Gln Thr Thr Thr Pro Gln Pro Asn
1 5 10 15
Leu Thr Asp Ala Glu Pro Ile Ala Ser Arg Ala Gln Cys Lys Ser Ile
20 25 30
Ala Val Ile Ile Ser Leu Phe Ala Leu Gly Met Leu Leu Leu Cys Leu
35 40 45
Gly Ile Ile Leu Ile Ser Ile Pro Ile Pro Gly Leu Ala Ala Gln Val
50 55 60
Ala Leu Gly Leu Gly Ile Val Ser Leu Ile Leu Gly Ile Ala Leu Ala
65 70 75 80
Asn Ile Gly Phe Leu Cys Leu Leu Leu Arg Cys Lys Gln Phe Pro Lys
85 90 95
Asn Pro Ile His Cys Pro Leu Lys Ala Leu Asn Ser Leu Pro Arg Glu
100 105 110
Ala Leu Pro Pro His Ser His Gly Lys Leu Glu Asn Phe
115 120 125

<210>1173

<211>141

<212>PRT

<213>Chlamydia pneumoniae

<400>1173

Leu Lys Glu Ile Met Met Ile Asn Phe Ile Arg Ser Tyr Ala Leu Tyr
1 5 10 15
Phe Ala Trp Ala Ile Ser Cys Ala Gly Thr Leu Ile Ser Ile Phe Tyr
20 25 30
Ser Tyr Ile Leu Asn Val Glu Pro Cys Ile Leu Cys Tyr Tyr Gln Arg
35 40 45
Ile Cys Leu Phe Pro Leu Thr Val Ile Leu Gly Ile Ser Ala Tyr Arg
50 55 60
Glu Asp Ser Ser Ile Lys Leu Tyr Ile Leu Pro Gln Ala Val Leu Gly
65 70 75 80
Leu Gly Ile Ser Ile Tyr Gln Val Phe Leu Gln Glu Ile Pro Gly Met
85 90 95
Gln Leu Asp Ile Cys Gly Arg Val Ser Cys Ser Thr Lys Ile Phe Leu

100 105 110
 Phe Ser Tyr Val Thr Ile Pro Met Ala Ser Val Val Ala Phe Gly Ala
 115 120 125
 Ile Val Cys Leu Leu Val Leu Thr Lys Asn Tyr Arg Gly
 130 135 140
 <210>1174
 <211>146
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>1174
 Leu Xaa Ile Glu Gln Glu Asn Phe Ser Phe Lys Phe Lys Lys Ser Ala
 1 5 10 15
 Leu Ser Phe Thr Tyr Asn Thr Ala Asn Leu Thr Lys Ser Thr Phe Thr
 20 25 30
 Phe Ile Leu Leu Leu Leu Arg Lys Lys Asp Gln Gly Leu Arg Phe
 35 40 45
 Met Asp Lys Glu Thr Leu Glu Asn Ile Tyr Arg His Phe Arg Tyr Arg
 50 55 60
 Phe Leu Lys Leu Asn Ile Leu Pro Ala Phe Leu Gly Leu Leu Leu Leu
 65 70 75 80
 Cys Ser Pro Asn Thr Leu Asn Tyr Thr Gln Val Asp Val Ile Phe Ser
 85 90 95
 Asp Arg Leu Cys Ser Cys Leu Leu Ile Phe Leu Ala Ile Ala Ser Leu
 100 105 110
 Thr Lys Arg Ser Leu Leu Trp Leu Gly Ala Pro Leu Gly Ile Trp Val
 115 120 125
 Thr Leu Phe Ala Cys Val Ala Asp Asp Leu Leu Leu Phe Leu Gln Met
 130 135 140
 Ile Leu
 145

<210>1175

<211>95

<212>PRT

<213>Chlamydia pneumoniae

<400>1175

Leu Leu Val Phe Val Lys Val Asn Ser Ser Met Gly Leu Pro Thr Phe
 1 5 10 15
 Pro Xaa Xaa Phe Leu Asn Ile Cys Cys Trp Phe Ile Ile Val Leu Phe
 20 25 30
 Ile Leu Ala Phe Ala Glu Ser Leu Arg His Leu Arg Trp Met Asn Leu
 35 40 45
 Ile Phe Ser Ala Ala Ile Leu Phe Ser Pro Val Leu Phe His Ile Pro
 50 55 60
 Val Glu Ser Pro Met Phe Leu Pro Ile Ile Val Thr Gly Leu Ile Leu
 65 70 75 80
 Ile Ile Leu Ser Ile Gly Lys Arg Arg Arg Thr Lys Arg Lys Leu
 85 90 95

<210>1176

<211>85

<212>PRT

<213>Chlamydia pneumoniae

<400>1176

Leu Val Tyr Phe Met Val Phe Ser Pro Ser Ser Glu Ser Val Val Lys
 1 5 10 15
 Ala Asn Ser Val Val Arg Ser Asn Phe Cys Tyr Phe Leu Glu Asn Lys
 20 25 30
 Phe Val Ser Pro Ser Glu Ser Thr Glu Val Met Phe Ser Glu Ile Met
 35 40 45
 Lys Gly Arg Val Pro Asp Ile Glu Ser Leu Phe Asp Arg Pro Thr Asp
 50 55 60
 Met Met Met Thr Gly Phe Lys Xaa Arg Arg Ile Trp Gly Ile Cys Ser
 65 70 75 80
 Ile Ala Ser Glu Tyr
 85

<210>1177

<211>114

<212>PRT

<213>Chlamydia pneumoniae

<400>1177

Met Leu Tyr Pro Val Ile Ala Val Val Cys Ala Val Val Ser Val Val
1 5 10 15
Leu Leu Ile Leu Lys Val Leu Phe Leu Leu Leu Ser Phe Pro Phe Lys
20 25 30
Leu Cys Ser Ala Ser Ser Ala Leu Pro Gly Glu Arg Val Ser Leu Gly
35 40 45
Ser His Phe Lys Cys Leu Tyr Gly Gly Gly Leu Pro Tyr Leu Leu Ala
50 55 60
Cys Leu Leu Ile Val Pro Val Ile Gly Thr Ala Ile His Gly Phe Ile
65 70 75 80
Ile Ser His Arg Thr Ser Glu Asp Ala Arg Leu Ser Ser Ala Ile Val
85 90 95
Phe Met Gln Ala Pro Ile Leu Gln Leu Ala Gly Met Ser Gly Leu Ile
100 105 110
Lys Pro

<210>1178

<211>79

<212>PRT

<213>Chlamydia pneumoniae

<400>1178

Leu Phe Phe Tyr Ile Tyr Ser Ile Leu Lys Arg Tyr Ile Val Val Leu
1 5 10 15
Gly Lys Ile Leu Gly Leu Ile Thr Ile Gln Phe Tyr Gln Asn Leu Gly
20 25 30
Gly Met Ser Ser Glu Arg Tyr Ser Ala Leu His Ser Arg Lys Ser Leu
35 40 45
Ser Val Leu Pro His Val Val Arg Lys Val Leu Leu Ser Phe Pro Asp
50 55 60
Phe Arg Gly Asn Gly Asp Val Asn Leu Arg Asn Ile Arg Ser Asp
65 70 75

<210>1179

<211>163

<212>PRT

<213>Chlamydia pneumoniae

<400>1179

Leu Lys Ala Lys Ala Tyr Leu Asp Lys Gly Ala Phe Val Pro Ser Asp
1 5 10 15
Phe Val Trp Glu Ile Leu Lys Glu Lys Leu Gln Ser Gln Ala Cys Ser
20 25 30
Lys Gly Cys Ile Ile Asp Gly Phe Pro Arg Thr Leu Asp Gln Ala His
35 40 45
Leu Leu Asp Ser Phe Leu Met Asp Val His Ser Asn Tyr Thr Val Ile
50 55 60
Phe Leu Glu Ile Ser Glu Asp Glu Ile Leu Lys Arg Val Cys Ser Arg
65 70 75 80
Phe Leu Cys Pro Ser Cys Ser Arg Ile Tyr Asn Thr Ser Gln Gly His
85 90 95
Thr Glu Cys Pro Asp Cys His Val Pro Leu Ile Arg Arg Ser Asp Asp
100 105 110
Thr Pro Glu Ile Ile Lys Glu Arg Leu Thr Lys Tyr Gln Glu Arg Thr
115 120 125
Ala Pro Val Ile Ala Tyr Tyr Asp Ser Leu Gly Lys Leu Cys Arg Val
130 135 140
Ser Ser Glu Asn Lys Glu Asp Leu Val Phe Glu Asp Ile Leu Lys Cys
145 150 155 160
Ile Tyr Lys

<210>1180

WO 99/27105

<211>128

<212>PRT

<213>Chlamydia pneumoniae

<400>1180

Met Ser Gln Cys Gln Ser Ser Ser Thr Ser Thr Trp Glu Trp Met Lys
 1 5 10 15
 Ser Phe Val Pro Asn Trp Lys Asn Pro Thr Pro Pro Leu Ser Pro Ile
 20 25 30
 Pro Ser Glu Asp Glu Phe Ile Leu Ala Tyr Glu Pro Phe Val Leu Pro
 35 40 45
 Lys Thr Asp Pro Glu Asn Ala Gln Ala Asn Pro Pro Gly Thr Ser Thr
 50 55 60
 Pro Asn Val Glu Asn Gly Ile Asp Asp Leu Asn Pro Leu Leu Gly Gln
 65 70 75 80
 Pro Asn Glu Gln Asn Asn Ala Asn Asn Pro Gly Thr Ser Gly Ser Asn
 85 90 95
 Pro Thr Ser Leu Pro Ala Pro Glu Arg Leu Pro Glu Thr Glu Glu Asn
 100 105 110
 Ser Gln Glu Glu Glu Gln Gly Ser Gln Asn Asn Glu Asp Leu Ile Gly
 115 120 125

<210>1181

<211>94

<212>PRT

<213>Chlamydia pneumoniae

<400>1181

Leu Lys Ser Met Leu Asp Pro Lys Lys His Ser Thr Leu Gly Ile Glu
 1 5 10 15
 Ile Ser Ser Glu Thr Ala Glu Thr Ile Glu Ser Cys Ser Leu Gly Leu
 20 25 30
 Ile Ser Ile Asn Leu Leu Leu Ser Gly Leu Cys Leu Arg Ser Ser His
 35 40 45
 Asp Arg Ser Gln Ala Val Lys Ile Ile Gln Gln Phe Cys Pro Gln Phe
 50 55 60
 Ser Ser Glu Glu Val Gln Asn Phe Val Glu Gln Arg Asn Ile Leu Leu
 65 70 75 80
 His Phe Tyr Ile Ile Cys Leu Lys Gly Thr Lys Ser Pro Cys
 85 90

<210>1182

<211>314

<212>PRT

<213>Chlamydia pneumoniae

<400>1182

Met Asn Lys Lys His Ala Ser Phe Ser Ser Arg Leu Gly Phe Ile Phe
 1 5 10 15
 Ser Met Ile Gly Ile Ala Val Gly Ala Gly Asn Ile Trp Arg Phe Pro
 20 25 30
 Arg Val Ala Ala Gln Asn Gly Gly Gly Ala Phe Leu Ile Leu Trp Leu
 35 40 45
 Cys Phe Leu Phe Leu Trp Ser Ile Pro Leu Ile Ile Ile Glu Leu Ser
 50 55 60
 Ile Gly Lys Leu Thr Lys Lys Ala Pro Ile Gly Ala Leu Ile Lys Thr
 65 70 75 80
 Ala Gly Lys Lys Phe Ala Trp Ala Gly Gly Phe Ile Thr Leu Val Thr
 85 90 95
 Thr Cys Ile Leu Ala Tyr Tyr Ser Thr Ile Val Gly Trp Gly Leu Ser
 100 105 110
 Tyr Phe Tyr Tyr Ala Val Ser Gly Lys Ile His Leu Gly Asn Asp Phe
 115 120 125
 Ala Lys Leu Trp Thr Ser His Tyr Gln Ser Ser Ile Pro Leu Trp Ala
 130 135 140
 His Leu Thr Ser Leu Gly Leu Ala Tyr Leu Val Ile Arg Lys Gly Ile
 145 150 155 160
 Val His Gly Ile Glu Lys Cys Asn Lys Ile Leu Ile Pro Ala Phe Phe
 165 170 175

Leu Cys Thr Ile Ala Leu Leu Leu Arg Ala Val Thr Lys Pro Gly Ala
 180 185 190
 Val Gln Gly Ile Lys Gln Leu Phe Ser Cys Asp Lys Ser Cys Phe Ser
 195 200 205
 Asn Tyr Lys Val Trp Ile Glu Ala Leu Thr Gln Asn Ala Trp Asp Thr
 210 215 220
 Gly Ala Gly Trp Gly Leu Leu Leu Val Tyr Ala Gly Phe Ala Ser Lys
 225 230 235 240
 Lys Thr Gly Val Val Ser Asn Gly Ala Leu Thr Ala Ile Cys Asn Asn
 245 250 255
 Leu Val Ser Leu Ile Met Gly Asp His Tyr Leu Phe His Met Cys Phe
 260 265 270
 Phe Arg His Phe Arg Asn His Ala Ala Thr Arg Trp Ser Arg Ser Xaa
 275 280 285
 Lys His Arg Asp Tyr Leu Tyr Leu Pro Thr Arg Val Ile Tyr Pro Phe
 290 295 300
 Ala Trp Arg Asn Leu Ser Asn His Pro Val
 305 310

<210>1183

<211>132

<212>PRT

<213>Chlamydia pneumoniae

<400>1183

Met Arg Ala Glu Met Ala Val Ile Tyr Trp Asp Arg Ser Lys Ile Val
 1 5 10 15
 Trp Ser Phe Glu Pro Trp Ser Leu Arg Leu Thr Trp Tyr Gly Val Phe
 20 25 30
 Phe Thr Val Gly Ile Phe Leu Ala Cys Leu Ser Ala Arg Tyr Leu Ala
 35 40 45
 Leu Ser Tyr Tyr Gly Leu Lys Asp His Leu Ser Phe Ser Lys Ser Gln
 50 55 60
 Leu Arg Val Ala Leu Glu Asn Phe Phe Ile Tyr Ser Ile Leu Phe Ile
 65 70 75 80
 Val Pro Gly Ala Arg Leu Ala Tyr Val Ile Phe Tyr Gly Trp Ser Phe
 85 90 95
 Tyr Leu Gln His Pro Glu Glu Ile Ile Gln Ile Trp His Gly Gly Leu
 100 105 110
 Ser Ser His Gly Gly Val Leu Trp Leu Ser Phe Val Gly Gly His Phe
 115 120 125
 Phe Leu Asp Ile
 130

<210>1184

<211>171

<212>PRT

<213>Chlamydia pneumoniae

<400>1184

Met Ser Val His Ile Thr Pro Arg Lys Cys Phe Ile Leu Cys Ile Leu
 1 5 10 15
 Ser Met Phe Thr Leu Pro Thr Leu Phe Pro Lys Ala His Leu Ile Leu
 20 25 30
 Phe Ser Pro Tyr Ile Val Leu Cys Phe Tyr Cys Phe Ser Lys Asp Lys
 35 40 45
 Gly Leu Val Leu Ala Leu Gly Cys Gly Val Leu Ser Asp Leu Ala Leu
 50 55 60
 Gly Ser Arg Gly Val Phe Leu Leu Leu Tyr Pro Leu Thr Ala Leu Ile
 65 70 75 80
 Thr His Lys Ala His Leu Ile Phe Ser Lys Glu Ser Lys Ala Ala Leu
 85 90 95
 Val Ile Val Asn Met Ile Phe Tyr Gly Val Phe Leu Leu Leu Thr Ile
 100 105 110
 Pro Met Cys Ala Leu Phe Gly His Glu Val Arg Trp Ser Ile Asp Val
 115 120 125
 Leu Met Ile Pro Leu Lys Cys Ser Phe Leu Asp Asn Leu Ile Phe Thr
 130 135 140

WO 99/27105

Ser Val Ile Tyr Ile Leu Pro Cys Ala Ile Asn Ser Gly Ile His Lys
 145 150 155 160
 Met Ile Ser Phe Phe Arg Arg Leu Val Cys Tyr
 165 170

<210>1185

<211>205

<212>PRT

<213>Chlamydia pneumoniae

<400>1185

Met Phe Met Lys Ile Cys Ser Leu Lys Leu Lys Asn Phe Arg Asn His
 1 5 10 15
 Ser Asp Leu Glu Ile Ser Leu Ala Pro Lys Leu Asn Tyr Ala Gln Gly
 20 25 30
 Lys Thr Asn Leu Leu Glu Ala Leu Tyr Val Leu Ser Leu Gly Arg Ser
 35 40 45
 Phe Arg Thr Gln His Leu Thr Asp Thr Ile Thr Phe Gly Ser Ser His
 50 55 60
 Phe Phe Leu Glu Thr Gln Phe Glu Lys Asp His Leu Pro Gln Ala Leu
 65 70 75 80
 Ser Ile Tyr Thr Asp Lys Gln Gly Lys Lys Ile Cys Tyr Asn Gln Leu
 85 90 95
 Pro Ile Lys Thr Leu Ser Gln Leu Ile Gly Lys Val Pro Ile Val Leu
 100 105 110
 Phe Ser Ser Lys Asp Arg Leu Leu Ile Ser Gly Ala Pro Ala Asp Arg
 115 120 125
 Arg Leu Phe Leu Asn Leu Leu Leu Ser Gln Cys Asp Asn His Tyr Thr
 130 135 140
 Leu Cys Leu Ser Tyr Tyr His Arg Ala Leu Gln Gln Arg Asn Ala Leu
 145 150 155 160
 Leu Lys Ser Lys Gln Thr Ser Thr Val Ala Ser Gly Met Asn Ser Trp
 165 170 175
 Ser Asn Thr Ala Pro Thr Tyr Pro Ser Asn Gly Phe Ser Val Val Arg
 180 185 190
 Asn Phe Gln Ile Tyr Pro Lys Asn Phe Gly Leu Thr Thr
 195 200 205

<210>1186

<211>81

<212>PRT

<213>Chlamydia pneumoniae

<400>1186

Leu Arg Phe Arg Asn Ile Lys Lys Ser Leu Ile Phe Ile Lys Arg Ile
 1 5 10 15
 Arg Tyr Ser Gln Ser Gly Lys Glu Gln Lys Gly Ala Arg Pro Phe Phe
 20 25 30
 Lys Lys Ser Ile Thr Ser Ser Leu Val Ile Leu Leu Leu Glu Ala Ile
 35 40 45
 Phe Asn Glu Asn Phe Ser Ser Ile Ile Gln Asn Asn Phe Asn Lys Asn
 50 55 60
 Phe Lys Asn Lys Asn Ile Ser Ile Asn Arg Ile Phe Val Lys Phe Thr
 65 70 75 80
 Ile

<210>1187

<211>79

<212>PRT

<213>Chlamydia pneumoniae

<400>1187

Val Gln Leu Phe Gln Tyr Met Asn Glu Ser Gly Trp Asp Trp Leu Cys
 1 5 10 15
 Asp Phe Asp Ser Gln Gly Glu Gly Phe Gln Leu Ser Arg Leu Val Gly
 20 25 30
 Leu Leu His Ser Ser Trp Ala Leu Tyr Glu Ala Lys Glu Gln Phe Tyr
 35 40 45
 Leu Pro Glu Val Ser Leu Leu Thr Trp Glu Glu Leu Ile Glu Met Gln

50 55 60
 Phe Val Lys Gln Thr Asn Lys Thr Arg Gly Cys Lys Arg Ser Leu
 65 70 75
 <210>1188
 <211>119
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>1188
 Met Pro Val Ser Ser Ala Pro Leu Pro Thr Ser His Arg Pro Ser Ser
 1 5 10 15
 Gly Asn Leu Gly Leu Met Glu Pro Asn Ser Lys Ala Leu Lys Ala Lys
 20 25 30
 His Gln Asp Lys Thr Thr Lys Thr Ile Lys Leu Leu Val Lys Ile Leu
 35 40 45
 Val Ala Ile Leu Val Ile Glu Val Leu Gly Ile Ile Ala Ala Phe Phe
 50 55 60
 Ile Pro Gly Thr Pro Pro Ile Cys Leu Ile Ile Leu Gly Gly Leu Ile
 65 70 75 80
 Leu Thr Thr Val Leu Cys Val Leu Leu Leu Val Ile Lys Leu Ala Leu
 85 90 95
 Val Asn Lys Thr Glu Gly Thr Thr Ala Glu Gln Gln Ile Lys Arg Lys
 100 105 110
 Leu Ser Ser Lys Ser Ile Ser
 115
 <210>1189
 <211>105
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>1189
 Met Ser Ser Pro Val Val Thr Gly Thr Ser Ser Ala Ser Pro Val Glu
 1 5 10 15
 Gln Thr Lys Leu Gly Glu Phe Leu Glu Arg Leu Ser Gly Ser Gly Arg
 20 25 30
 Cys Ile Lys Ile Ala Phe Ala Ala Ser Thr Ala Leu Leu Leu Leu Asn
 35 40 45
 Thr Phe Val Ser Gly Ile Val Ala Ile Ala Met Ile Phe Val Ala Thr
 50 55 60
 Ser Val Gly Ala Tyr Phe Thr Val Ile Gly Pro Leu Phe Leu Leu Ser
 65 70 75 80
 Leu Ile Leu Leu Ala Ile Met Leu Ile Ser Met Tyr Lys Ile Thr His
 85 90 95
 Pro Ser Gln Asn Thr Pro Ile Ser Asn
 100 105
 <210>1190
 <211>162
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>1190
 Met Leu Cys Thr Cys Ser Arg Ile Gln Asp Gly Asn Pro Trp Met Lys
 1 5 10 15
 Ser Glu Arg Leu Lys Lys Leu Glu Ser Glu Leu His Asp Leu Thr Gln
 20 25 30
 Trp Met Gln Leu Gly Leu Val Pro Lys Lys Glu Ile Ser Arg His Gln
 35 40 45
 Glu Glu Ile Arg Ile Leu Glu His Lys Ile Tyr Glu Glu Lys Glu Arg
 50 55 60
 Leu Gln Leu Leu Lys Glu Asn Gly Glu Ile Glu Glu Tyr Val Thr Pro
 65 70 75 80
 Arg Arg Ser Pro Ala Lys Thr Val Tyr Pro Asp Gly Pro Ser Met Ser
 85 90 95
 Asp Ile Glu Phe Val Glu Pro Thr Glu Thr Glu Ile Asp Ile Asp Pro
 100 105 110
 Gly Glu Thr Val Glu Leu Glu Leu Thr Asp Glu Gly Arg Glu Asp Gly
 115 120 125

WO 99/27105

Ala Val Glu Val Asp Tyr Ser His Glu Asp Asp Glu Asp Pro Phe Ser
 130 135 140
 Asp Arg Asn Arg Trp Arg Arg Gly Gly Ile Ile Asp Pro Asp Ala Asn
 145 150 155 160
 Glu Trp

<210>1191

<211>83

<212>PRT

<213>Chlamydia pneumoniae

<400>1191

Leu Val Ile Gln Ile Gly Val Leu Pro Pro Leu Val Ala Thr Lys Lys
 1 5 10 15
 Ile Asp Ile Asn Arg Phe Met Gln Asp Ala Asp Asn Trp Ile Pro Met
 20 25 30
 Phe Ser His Pro Phe Phe Leu Arg Glu Lys Thr Leu Ser Asp Gly Lys
 35 40 45
 Asp Ile His Ile Leu Ser Arg Leu Lys Gly Leu Gln Thr Cys Ala Pro
 50 55 60
 Cys Ser Pro His Glu Glu Arg Thr Ile Thr Leu Leu Ser His Ser Asn
 65 70 75 80
 Ser Val Ser

<210>1192

<211>95

<212>PRT

<213>Chlamydia pneumoniae

<400>1192

Met Asn Lys Ser Arg Phe Leu Arg Leu Cys Cys Cys Leu Cys Phe Cys
 1 5 10 15
 Gly Ser Leu Phe Tyr Phe Tyr Ile Asn Lys Gln Asn Ser Leu Thr Lys
 20 25 30
 Leu Arg Leu Glu Ile Pro Cys Leu Ser Val Arg Leu Arg Gln Leu Glu
 35 40 45
 Gln Gln Asn Ile Ser Leu Arg Phe Leu Ile Asp Lys Ile Glu Arg Pro
 50 55 60
 Asp His Leu Met Glu Ile Ala Ala Leu Pro Glu Tyr Gln Tyr Leu Glu
 65 70 75 80
 Tyr Pro Ser Glu Glu Ser Ile Ser Leu Leu Ser Tyr Glu Leu Pro
 85 90 95

<210>1193

<211>101

<212>PRT

<213>Chlamydia pneumoniae

<400>1193

Met Asp Pro Ala Ser Pro Val Ala Pro His Val Leu Gln Asp His Val
 1 5 10 15
 Gln Leu Ser Ser Glu Glu Leu Ser Ala Leu Ser Ser Gly Val Ser Arg
 20 25 30
 Val Lys Lys Leu Thr Ile Ala Ile Met Val Leu Ser Leu Ile Ala Ile
 35 40 45
 Ser Leu Val Ala Cys Gly Leu Phe Leu Thr Gly Ser Ala Pro Leu Gln
 50 55 60
 Leu Ser Ile Trp Ile Ala Ala Ser Cys Ile Thr Leu Ser Met Leu Val
 65 70 75 80
 Cys Ala Cys Trp Arg Tyr Lys Ile Ser Asn Ala Leu Glu Lys Thr Lys
 85 90 95
 Val Ala His Glu Ser
 100

<210>1194

<211>77

<212>PRT

<213>Chlamydia pneumoniae

<400>1194

Val Met Trp Tyr Ser Asp Tyr His Val Trp Ile Leu Pro Val His Glu
 1 5 10 15
 Arg Val Val Arg Leu Gly Leu Thr Glu Lys Met Gln Lys Asn Leu Gly
 20 25 30
 Ala Ile Leu His Val Asp Leu Pro Ser Val Gly Ser Leu Cys Lys Glu
 35 40 45
 Gly Glu Val Leu Val Ile Leu Glu Ser Ser Lys Ser Ala Ile Arg Gly
 50 55 60
 Val Lys Ser Cys Ile Arg Arg Gly Tyr Arg Tyr Gln Pro
 65 70 75

<210>1195

<211>172

<212>PRT

<213>Chlamydia pneumoniae

<400>1195

Met Gly Phe Lys Asn Ile Cys Lys Gln Gly Ser Gln Leu Tyr Leu Asn
 1 5 10 15
 Gly Ile Phe Pro Glu Arg Ile Leu Ala Arg Lys Leu Lys Asn Cys Ala
 20 25 30
 Lys Ser Tyr Pro Arg Thr Ala Leu Thr Ile Glu Val Leu Val Ser Ser
 35 40 45
 Val Leu Gly Ala Leu Lys Val Ile Leu Ile Pro Cys Ala Ser Thr Tyr
 50 55 60
 Ala Ala Leu Thr Leu Pro Leu Arg Ala Leu Phe Asn Ala Ile Lys Thr
 65 70 75 80
 Lys Ser Cys Gln His Leu Ala Ser Tyr Ala Met Ala Trp Leu Leu His
 85 90 95
 Ile Leu Thr Ile Ala Val Ile Ile Gly Leu Val Phe Ser Leu Val Phe
 100 105 110
 Ile Pro Pro Pro Val Val Phe Ile Ser Leu Gly Leu Leu Met Ser Val
 115 120 125
 Thr Thr Ser Val Thr Leu Phe Gln Val His Lys Asn Leu Phe Pro Pro
 130 135 140
 Tyr Glu Pro Pro Pro Ser Arg Pro His Thr Pro Pro Pro Phe Ala Asp
 145 150 155 160
 Glu Tyr Val Pro Leu Ile Ser Glu Ser Tyr Phe Asp
 165 170

<210>1196

<211>224

<212>PRT

<213>Chlamydia pneumoniae

<400>1196

Val Thr Pro Ser Ala Asp Asp Ala Lys Lys Ile Ala Val Glu Lys Lys
 1 5 10 15
 Lys Asp Leu Ser Ala Ser Ala Arg Met Glu Glu His Glu Ala Ser Gln
 20 25 30
 Arg Gln Asp Ala Arg His Arg Arg Ile Gly Arg Glu Ala Gln Gly Ser
 35 40 45
 Phe Phe Tyr Ser Ser Arg Asn Pro Glu His Arg Arg Ser Phe Gly Ser
 50 55 60
 Leu Ser Arg Phe Lys Thr Lys Pro Ser Asp Ala Ala Ser Thr Arg Pro
 65 70 75 80
 Ala Ser Ile Ser Pro Phe Lys Asp Asp Phe Gln Pro Tyr His Phe
 85 90 95
 Lys Asp Leu Arg Ser Ser Ser Phe Gly Ser Gly Ala Ser Ser Ala Phe
 100 105 110
 Thr Pro Ile Met Pro Ala Ser Ser Arg Ser Pro Asn Phe Ser Thr Gly
 115 120 125
 Thr Val Leu His Pro Glu Pro Val Tyr Pro Lys Gly Gly Lys Glu Pro
 130 135 140
 Ser Ile Pro Arg Val Ser Ser Ser Ser Arg Arg Ser Pro Arg Asp Arg
 145 150 155 160
 Gln Asp Lys Gln Gln Gln Gln Asn Gln Asp Glu Glu Gln Lys Gln
 165 170 175

WO 99/27105

Gln Ser Lys Lys Lys Ser Gly Lys Ser Asn Gln Ser Leu Lys Thr Pro
 180 185 190
 Pro Pro Asp Gly Lys Ser Thr Ala Asn Leu Ser Pro Ser Asn Pro Phe
 195 200 205
 Ser Asp Gly Tyr Asp Glu Arg Glu Lys Arg Lys His Arg Lys Asn Lys
 210 215 220

<210>1197

<211>139

<212>PRT

<213>Chlamydia pneumoniae

<400>1197

Leu Ile Lys Lys Arg Ala Ile Phe Glu Arg Met Phe Pro Ile Pro Pro
 1 5 10 15
 Pro His Cys Pro Pro Asn Asn Lys Asn Asn Phe Tyr His Leu Thr Thr
 20 25 30
 Asp Thr Lys Asp Pro Leu Leu Leu Arg Ile Leu Arg Thr Ile Gly Tyr
 35 40 45
 Val Leu Leu His Ile Ile Thr Leu Gly Leu Leu Leu Leu Ile His Tyr
 50 55 60
 Tyr Lys His His Arg Val Val Arg Lys Glu Gly Leu Pro Thr Pro Pro
 65 70 75 80
 Thr Leu Pro Lys Gly Pro Glu Pro Lys Thr Ile Glu Ile Ala Lys Gln
 85 90 95
 Pro Pro Lys Asp Gly Glu Asp Lys Lys Pro Asp Val Pro Lys Pro Gly
 100 105 110
 Thr Pro Pro Pro Glu Asp Thr Pro Pro Pro Pro Lys Ala Pro Ser
 115 120 125
 Pro Ala Ser Pro Lys Val Pro Lys Thr Thr Cys
 130 135

<210>1198

<211>79

<212>PRT

<213>Chlamydia pneumoniae

<400>1198

Val Val Glu Ser Ala Phe Tyr Gln Gln Val Val Leu Gly Thr Phe Gly
 1 5 10 15
 Leu Ala Gly Glu Gly Ala Leu Gly Gly Gly Gly Gly Val Ser Ser Gly
 20 25 30
 Gly Gly Val Pro Gly Leu Gly Thr Ser Gly Phe Leu Ser Ser Pro Ser
 35 40 45
 Leu Gly Gly Cys Leu Ala Ile Ser Ile Val Phe Gly Ser Gly Pro Leu
 50 55 60
 Gly Arg Val Gly Gly Val Gly Lys Pro Ser Phe Leu Thr Thr Arg
 65 70 75

<210>1199

<211>90

<212>PRT

<213>Chlamydia pneumoniae

<400>1199

Leu Asp Asp Ser Trp Ile Leu Glu Val Lys Val Thr Pro Lys Ala Lys
 1 5 10 15
 Glu Asn Lys Ile Val Gly Phe Asp Gly Gln Ala Leu Lys Val Arg Val
 20 25 30
 Thr Glu Pro Pro Glu Lys Gly Lys Ala Asn Asp Ala Val Ile Ser Leu
 35 40 45
 Leu Ala Lys Ala Leu Ser Leu Pro Lys Arg Asp Val Thr Leu Ile Ala
 50 55 60
 Gly Glu Thr Ser Arg Lys Lys Lys Phe Leu Leu Pro Asn Arg Val Gln
 65 70 75 80
 Asp Ile Ile Phe Ser Leu His Ile Asp Val
 85 90

<210>1200

<211>107

<212>PRT

<213>Chlamydia pneumoniae

<400>1200

Leu Gln Asn Ser Met His Lys Val Phe Ala Asp Pro Ser Leu Thr Asp
1 5 10 15
Thr Ile Thr Leu Pro Ile Asp Ala Pro Gly Asp Pro Ala Tyr Pro His
20 25 30
Val Leu Gly Glu Ala Phe Ile Ser Pro Gln Ala Ala Leu Arg Phe Leu
35 40 45
Glu Asn Thr Ser Pro Asn Gln Glu Asp Ile Tyr Glu Glu Ile Ser Arg
50 55 60
Tyr Leu Val His Ser Ile Leu His Met Leu Gly Tyr Asp Asp Thr Ser
65 70 75 80
Ser Glu Glu Lys Arg Lys Met Arg Val Lys Glu Asn Gln Ile Leu Cys
85 90 95
Met Leu Arg Lys Lys His Ala Leu Leu Thr Ala
100 105

<210>1201

<211>279

<212>PRT

<213>Chlamydia pneumoniae

<400>1201

Met Ser Ser Leu Leu Ser Cys Gly Arg Ile Glu Pro Thr Arg Val Thr
1 5 10 15
Cys Ser Leu Lys Thr Tyr Leu Glu Asp Thr Ser Gln Asn Gln Leu Ser
20 25 30
Thr Arg Leu Val Arg Ala Ser Val Ile Phe Leu Cys Ala Leu Leu Ile
35 40 45
Ile Leu Val Cys Val Ala Leu Ser Ser Leu Ile Pro Ser Ile Met Ala
50 55 60
Leu Ala Thr Ser Phe Thr Val Met Gly Leu Ile Leu Phe Val Met Ser
65 70 75 80
Leu Leu Gly Asp Val Ala Ile Ile Ser Tyr Leu Thr Tyr Ser Thr Val
85 90 95
Thr Ser Tyr Arg Gln Asn Lys Arg Ala Phe Glu Ile His Lys Pro Ala
100 105 110
Arg Ser Val Tyr Tyr Glu Gly Val Arg His Trp Asp Leu Gly Arg Ser
115 120 125
Ser Leu Gly Thr Gly Glu Ile Pro Ile Val Arg Thr Leu Phe Ser Pro
130 135 140
Phe Gln Asn His Gly Leu Asn His Ala Leu Ala Ala Lys Ile Phe Leu
145 150 155 160
Phe Met Glu His Phe Ser Pro Glu Pro Pro Asn Glu Pro Leu Val Asp
165 170 175
Trp Ala Cys Leu Ile Arg Asp Phe Arg Pro His Val Ser Ser Leu Cys
180 185 190
Phe Val Ile Glu Lys Gln Gly Ser Ser Leu Arg Thr Lys Glu Gly Asn
195 200 205
Thr Ile Cys Glu Ala Phe Arg Ser Asp Tyr Asp Ala His Phe Ala Met
210 215 220
Val Asp Cys Tyr Arg Leu Ile His Ser Lys Leu Ile Ile Glu Lys Met
225 230 235 240
Gly Leu Lys Asn Ile Asp Ile Ile Pro Ser Val Met Val Arg Glu Asp
245 250 255
Tyr Pro Ser Arg Pro Gly Glu Gly Tyr Arg Glu Gly Leu Leu Arg Met
260 265 270
Tyr Gly Gly Lys Gly Ala Leu
275

<210>1202

<211>239

<212>PRT

<213>Chlamydia pneumoniae

<400>1202

Leu Lys Val Gln Lys Leu Arg Gln Pro Ser Phe Tyr Pro Lys Arg Leu
1 5 10 15

Met Thr Leu Tyr Leu Gly Leu Asn Gln Lys Thr Ala Arg Lys Tyr Gln
 20 25 30
 Ala His Tyr Leu Pro Ile Leu Thr Leu Phe Pro Tyr Ala Lys Ser Thr
 35 40 45
 Pro Gln Asn Lys Arg Ala Leu Gln Phe Leu Pro Gln Ala Thr His Val
 50 55 60
 Ile Leu Thr Ser Pro Ser Ser Thr His Leu Phe Leu Ser Arg Met Thr
 65 70 75 80
 Ser Leu Leu Ser Lys Ala Thr Leu Lys Thr Lys Thr Tyr Leu Cys Ile
 85 90 95
 Gly Glu Ser Thr Lys Glu Arg Leu Leu Ser Phe Leu Gly Gln Val Lys
 100 105 110
 Tyr Val Val Ala Thr Gln Glu Ile Ala Glu Gly Ile Phe Pro Leu Leu
 115 120 125
 Gln Ala Leu Pro Ser Ser Ala Arg Ile Leu Tyr Pro His Ser Ser Leu
 130 135 140
 Ala Arg Pro Val Ile Arg Glu Phe Leu Tyr Asn Arg Phe Thr Phe Phe
 145 150 155 160
 Ser Tyr Pro His Tyr Thr Val Lys Pro Arg Lys Leu Lys Lys Asn Ile
 165 170 175
 Leu Ser Lys Tyr Lys Lys Ile Ile Phe Thr Ser Pro Ser Thr Val Arg
 180 185 190
 Ala Phe Ala Lys Ile Phe Pro Arg Phe Pro Glu Lys Thr Tyr Trp Cys
 195 200 205
 Gln Gly Arg Met Thr Leu Gln Glu Phe Gln Lys Phe Ser Ser Gln Lys
 210 215 220
 Gln Val Ser Leu Leu Glu Thr Leu Gly Lys Ser Arg Thr Ser Pro
 225 230 235

<210>1203

<211>110

<212>PRT

<213>Chlamydia pneumoniae

<400>1203

Met Ala Ser Ser Ala Thr Pro Gly Phe Asp Gly Thr Ala Pro Ser Leu
 1 5 10 15
 Phe Pro Pro Ala Thr Arg Pro Arg Tyr Asn Phe Lys Leu Ala Leu Phe
 20 25 30
 Val Thr Ile Ala Ile Ala Leu Val Trp Ile Ala Leu Ile Ala Thr Thr
 35 40 45
 Ile Ala Ile Gly Leu Cys Ile His Pro Leu Cys Ser Phe Ile Phe Leu
 50 55 60
 Thr Ala Ile Pro Leu Tyr Phe Ile Ser Arg Tyr Ile Cys Ser His Tyr
 65 70 75 80
 Ala Arg Asn Val Tyr Ile Ala Leu Asp Val Val Pro Asp His Ser Lys
 85 90 95
 Leu Gln Asp Met Arg Ser His Ser Pro Ile Phe Ser Asp Arg
 100 105 110

<210>1204

<211>196

<212>PRT

<213>Chlamydia pneumoniae

<400>1204

Met Leu Ile Leu Gly Leu Leu Thr Pro Thr Phe Gly Ser Leu Lys Thr
 1 5 10 15
 Phe Pro Ser His Ser Ala Gly Lys Gln Thr His Ser Met Ile Gly Trp
 20 25 30
 Val Pro Gln His Phe Ser Tyr Asp Pro Cys Phe Pro Ile Ser Val Lys
 35 40 45
 Asp Val Val Leu Ser Gly Arg Leu Ser Gln Leu Ser Trp His Xaa Lys
 50 55 60
 Tyr Lys Xaa Lys Asp Phe Glu Ala Val Asp His Ala Leu Asp Asn Val
 65 70 75 80
 Gly Leu Ser Asp His His His His Cys Phe Ala His Leu Ser Gly Gly
 85 90 95

Gln Ile Gln Arg Val Leu Leu Ala Arg Ala Leu Ala Ser Tyr Pro Glu
 100 105 110
 Ile Leu Ile Leu Asp Glu Pro Thr Thr Asn Ile Asp Pro Asp Asn Gln
 115 120 125
 Gln Arg Ile Leu Ser Ile Leu Lys Lys Leu Asn Arg Thr Cys Thr Ile
 130 135 140
 Leu Met Val Thr His Asp Leu His His Thr Thr Asn Tyr Phe Asn Lys
 145 150 155 160
 Val Phe Tyr Met Asn Lys Thr Leu Thr Ser Leu Ala Asp Thr Ser Thr
 165 170 175
 Leu Thr Asp Gln Phe Cys Cys His Pro Tyr Lys Asn Gln Glu Phe Ser
 180 185 190
 Cys Ser Pro His
 195

<210>1205

<211>92

<212>PRT

<213>Chlamydia pneumoniae

<400>1205

Met Leu Ser Ser Leu Ile Arg Asp Ser Phe Pro Leu Leu Ile Leu Leu
 1 5 10 15
 Pro Thr Phe Leu Ala Ala Leu Gly Ala Ser Val Ala Gly Gly Val Met
 20 25 30
 Gly Thr Tyr Ile Val Val Lys Arg Ile Val Ser Ile Ser Gly Ser Ile
 35 40 45
 Ser His Ala Ile Leu Gly Gly Ile Gly Leu Thr Leu Trp Ile Gln Tyr
 50 55 60
 Lys Leu His Leu Ser Phe Pro Met Tyr Gly Ala Ile Val Gly Ala
 65 70 75 80
 Ile Phe Leu Ala Leu Cys Ile Gly Lys Arg Ser Thr
 85 90

<210>1206

<211>188

<212>PRT

<213>Chlamydia pneumoniae

<400>1206

Leu His Arg Gln Lys Ile His Leu Lys Tyr Gln Glu Arg Glu Asp Ser
 1 5 10 15
 Leu Ile Ala Met Ile Trp Ser Val Gly Met Ala Ile Gly Ile Ile Phe
 20 25 30
 Ile Ser Arg Leu Pro Thr Phe Asn Gly Glu Leu Ile Asn Phe Leu Phe
 35 40 45
 Gly Asn Ile Leu Trp Val Thr Pro Ser Asp Leu Tyr Ser Leu Xaa Ile
 50 55 60
 Phe Asp Leu Leu Val Leu Gly Ile Val Val Leu Cys His Thr Arg Phe
 65 70 75 80
 Leu Ala Leu Cys Phe Asp Glu Arg Tyr Thr Ala Leu Asn His Cys Ser
 85 90 95
 Val Gln Leu Trp Tyr Phe Leu Leu Leu Val Leu Thr Ala Ile Thr Ile
 100 105 110
 Val Met Leu Ile Tyr Val Met Gly Thr Ile Leu Met Leu Ser Met Leu
 115 120 125
 Val Leu Pro Val Ala Ile Ala Cys Arg Phe Ser Tyr Lys Met Thr Arg
 130 135 140
 Ile Met Phe Ile Ser Val Leu Leu Asn Ile Leu Cys Ser Phe Ser Gly
 145 150 155 160
 Ile Cys Ile Ala Tyr Cys Leu Asp Phe Pro Val Gly Pro Thr Ile Ser
 165 170 175
 Leu Leu Met Gly Leu Xaa Tyr Thr Ala Ser Leu Val
 180 185

<210>1207

<211>112

<212>PRT

<213>Chlamydia pneumoniae

WO 99/27105

<400>1207
 Val Phe Ser Tyr Leu Leu Leu Cys Ile Ile Leu Val Tyr Val Arg Phe
 1 5 10 15
 Met Tyr Glu Gly Lys Ser Arg Met Ala Ser Pro Thr Pro Gly Gln Leu
 20 25 30
 His Leu Gln Gln Lys Val Glu Ser Lys Ala Tyr Asp Tyr Ser Arg Ser
 35 40 45
 Leu Ala Met Ile Ala Thr Ala Leu Leu Phe Phe Ile Val Ala Leu Ile
 50 55 60
 Leu Ser Gly Leu Ser Leu Leu Pro Gln Val Phe Leu Pro Phe Ser Gly
 65 70 75 80
 Ala Tyr Phe Ile Ile Gly Ser Phe Leu Ala Phe Ile Ala Leu Gly Ile
 85 90 95
 Leu Leu Ile Asn Cys Val Cys Asp Leu Lys Gln Tyr Leu Thr Ser Ser
 100 105 110

<210>1208

<211>320

<212>PRT

<213>Chlamydia pneumoniae

<400>1208
 Val Leu Ile Ser Ile Ser Leu Ala Thr Leu Pro Ile Leu Ala Phe Ser
 1 5 10 15
 Trp Ala Ser Phe Ile Glu Pro Asn Trp Leu Arg Thr Thr Ala Ile Pro
 20 25 30
 Trp Arg Leu Pro Lys Lys His Ala His Leu His Gly Leu Arg Ile Ala
 35 40 45
 Gln Ile Ser Asp Leu His Phe His Lys Arg Val Pro Glu Lys Phe Leu
 50 55 60
 Asn Lys Val Ser Lys Ser Ile Lys Asn Phe Ser Pro Asp Leu Ile Val
 65 70 75 80
 Phe Cys Gly Asp Leu Leu Cys Arg Ala Arg Leu Glu Asp Lys Glu Arg
 85 90 95
 Leu Glu Thr Phe Leu Asn Thr Leu Glu Ala Pro Leu Gly Val Phe Ala
 100 105 110
 Ile Leu Gly Asn His Asp Tyr Ser Ser Tyr Ile Ser Arg Asn Thr Lys
 115 120 125
 Gly Glu Ile Thr Cys Ile Pro Glu Glu Lys Ser Arg Pro Ile Gln Arg
 130 135 140
 Ala Ile Ile Ala Val Met Gln Gly Leu Phe Ser Ser Pro Ser Tyr Arg
 145 150 155 160
 Tyr Asp Pro Asn Leu Thr Pro Gln Glu Pro His Pro Asp Leu Leu Lys
 165 170 175
 Leu Leu Lys Asn Thr Pro Leu Thr Leu Leu His Asn Thr Thr His Val
 180 185 190
 Ile Pro Asn Thr Leu Asn Ile Val Gly Leu Gly Asp Leu Phe Ala Arg
 195 200 205
 Gln Phe His Pro Glu Gln Ala Phe Lys Asn Tyr Asp Pro Ser Leu Pro
 210 215 220
 Gly Leu Leu Leu Ser His Asn Pro Asp Gly Ile Thr Arg Leu Gln Gln
 225 230 235 240
 Tyr Pro Gly Asp Phe Val Leu Ser Gly His Ser His Gly Pro Gln Val
 245 250 255
 Thr Leu Ser Trp Pro Lys Phe Ala Arg Lys Phe Phe Glu Arg Leu Ser
 260 265 270
 Gly Leu Glu Asn Pro Tyr Leu Ala Arg Gly Tyr Phe Val Thr Lys Glu
 275 280 285
 Gly Lys Gln Leu Tyr Val Asn Arg Gly Leu Gly Gly Leu Lys Arg Ile
 290 295 300
 Arg Phe Cys Ser Pro Pro Glu Ile Cys Tyr Ile Thr Cys Ser Tyr Asp
 305 310 315 320

<210>1209

<211>185

<212>PRT

<213>Chlamydia pneumoniae

<400>1209
Met Thr Ala Thr Met Ser Leu Leu Asn Leu Pro Ser Ser Gln Asp Ser
1 5 10 15
Ala Ser Glu Asp Ser Thr Ser Gln Ser Gln Ile Phe Asp Pro Ile Arg
20 25 30
Asn Arg Glu Leu Val Ser Thr Pro Glu Glu Lys Val Arg Gln Arg Leu
35 40 45
Leu Ser Phe Leu Met His Lys Leu Asn Tyr Pro Lys Lys Leu Ile Ile
50 55 60
Ile Glu Lys Glu Leu Lys Thr Leu Phe Pro Leu Leu Met Arg Lys Gly
65 70 75 80
Thr Leu Ile Pro Lys Arg Arg Pro Asp Ile Leu Ile Ile Thr Pro Pro
85 90 95
Thr Tyr Thr Asp Ala Gln Gly Asn Thr His Asn Leu Gly Asp Pro Lys
100 105 110
Pro Leu Leu Leu Ile Glu Cys Lys Ala Leu Ala Val Asn Gln Asn Ala
115 120 125
Leu Lys Gln Leu Leu Ser Tyr Asn Tyr Ser Ile Gly Ala Thr Cys Ile
130 135 140
Ala Met Ala Gly Lys His Ser Gln Val Ser Ala Leu Phe Asn Pro Lys
145 150 155 160
Thr Gln Thr Leu Asp Phe Tyr Pro Gly Leu Pro Glu Tyr Ser Gln Leu
165 170 175
Leu Asn Tyr Phe Ile Ser Leu Asn Leu
180 185

<210>1210

<211>173

<212>PRT

<213>Chlamydia pneumoniae

<400>1210

Met Ala Asp Asp Thr Leu Ile Pro Lys Leu Met Lys Asn Ser Leu Ser
1 5 10 15
Gln Ala Cys Ser Glu Gly Leu Leu Ile Ala Lys Tyr Pro Pro Leu Gln
20 25 30
Val Ile Val His Phe Asp Asn Asn Leu Val Val Lys Thr His Leu Ser
35 40 45
Val Ala Pro Val Phe Ser Cys Leu Phe Leu Gly Pro Ala Ala His Lys
50 55 60
Ala Met Gln Glu Ile Val Leu Trp Cys Ser Arg Tyr Ala Asn Lys Glu
65 70 75 80
His Pro Pro Phe Ser Ser His Phe Ala Lys Asp Leu Ile Pro Ser Gln
85 90 95
Tyr Leu Glu Ile Leu Asn Cys Val Ala Glu Ile Pro Phe Gly Glu Gln
100 105 110
Gln Thr Tyr Ala Glu Ile Ala Lys Lys Thr Asp Thr His Pro Arg Thr
115 120 125
Val Gly Ala Ala Cys Lys Gln Asn Pro Phe Leu Leu Phe Phe Pro Cys
130 135 140
His Arg Val Val Gly Ser His Gly Glu Arg Asn Tyr Val Leu Gly Pro
145 150 155 160
Val Ile His Glu Ile Leu Leu Lys Phe Glu Asn Ser Tyr
165 170

<210>1211

<211>137

<212>PRT

<213>Chlamydia pneumoniae

<400>1211

Met Ile Glu Asn Asp Phe Pro Glu Ala Ser Asn Phe Glu Ser Ser His
1 5 10 15
Phe Tyr Arg Asp Lys Val Gly Val Ile Ile Leu Cys Gly Gly Glu Gly
20 25 30
Lys Arg Leu Ser Pro Leu Thr Asn Cys Arg Cys Lys Pro Thr Val Ser
35 40 45
Phe Gly Gly Arg Tyr Lys Leu Ile Asp Ile Pro Ile Ser His Ala Ile

WO 99/27105

50 55 60
 Ser Ala Gly Phe Ser Lys Ile Phe Val Ile Gly Gln Tyr Leu Thr Tyr
 65 70 75 80
 Thr Leu Gln Gln His Leu Phe Lys Thr Tyr Phe Tyr His Gly Val Leu
 85 90 95
 Gln Asp Gln Ile His Leu Leu Ala Pro Glu Ala Arg Gln Gly Asp Gln
 100 105 110
 Ile Trp Tyr Gln Gly Thr Gln Met Gln Phe Glu Lys Thr Tyr Phe Ile
 115 120 125
 Ser Lys Ile Gln Lys Ser Asn Thr Phe
 130 135

<210>1212

<211>94

<212>PRT

<213>Chlamydia pneumoniae

<400>1212

Met Leu Ile Arg Leu Phe Leu Gly Ile Ser Leu Pro Lys Gly Phe Pro
 1 5 10 15
 Leu Tyr Leu Glu Pro Pro Leu Val Leu Ala Thr Phe Gln Gly Thr Gln
 20 25 30
 Phe Val Gly Thr Tyr Ser Glu Ala Thr Asn Pro Leu Tyr Ile Asp Asn
 35 40 45
 Leu Asn Leu Asn Tyr His Tyr Thr Gln Glu Leu Leu Tyr Lys Ala Val
 50 55 60
 Pro Cys Asn Tyr Lys Ser Ile Tyr Arg Glu Ile Pro Leu Ile Ile Phe
 65 70 75 80
 Pro Glu Val Leu Ile Gly Ser Thr Pro Thr Gln Ser Thr Glu
 85 90

<210>1213

<211>168

<212>PRT

<213>Chlamydia pneumoniae

<400>1213

Met Arg Gln Phe Cys Asn Leu Leu Ser Leu Ser Arg Leu Trp Leu Ala
 1 5 10 15
 Leu Tyr Phe Cys Gln Glu Lys Leu His Ile Arg Leu Leu Ala Ile Val
 20 25 30
 Gly Ala Met Leu Ser Asp Val Leu Asp Gly Tyr Leu Ala Arg Arg Tyr
 35 40 45
 Lys Ala Thr Ser Arg Leu Gly Ser Ile Leu Asp Pro Ile Thr Asp Lys
 50 55 60
 Val Phe Val Phe Val Cys Ile Thr Val Leu Tyr Met Glu Gly Ser Leu
 65 70 75 80
 Ser Ile Ala His Leu Phe Phe Ile Cys Ala Arg Asp Leu Phe Leu Xaa
 85 90 95
 Thr Phe Val Phe Tyr Leu Ser Leu Val Lys Gly Trp Lys Gly Tyr Asp
 100 105 110
 Tyr Gly Ser Leu Phe Trp Gly Lys Ile Phe Thr Val Val Gln Phe Ile
 115 120 125
 Ile Leu Leu Gly Val Thr Ala Gly Gly Glu Ile Pro Trp Thr Gly Leu
 130 135 140
 Val Pro Leu Val Ala Leu Gly Phe Leu Tyr Phe Leu Glu Arg Ile Met
 145 150 155 160
 Asp Tyr Lys Lys Gln Phe Leu Arg
 165

<210>1214

<211>88

<212>PRT

<213>Chlamydia pneumoniae

<400>1214

Met Ser Arg Ser Leu Arg Lys Gly Pro Phe Val Asp His His Leu Leu
 1 5 10 15
 Lys Lys Val Arg Ala Met Asn Ile Glu Glu Lys Lys Thr Pro Ile Lys
 20 25 30

Thr Trp Ser Arg Arg Ser Met Ile Thr Pro Glu Met Ile Gly His Thr
35 40 45
Phe Glu Val His Asn Gly Lys Lys Phe Leu Thr Val Phe Val Ser Glu
50 55 60
Thr Met Val Gly His Lys Leu Gly Glu Phe Ser Pro Thr Arg Ile Phe
65 70 75 80
Lys Ser His Pro Val Lys Lys Gly
85

<210>1215

<211>252

<212>PRT

<213>Chlamydia pneumoniae

<400>1215

Met Leu Ile Val Leu Ala Phe Arg Gln Val Phe Phe Ser His Ser Arg
1 5 10 15
Ser Gln Leu Asp Arg Leu Lys Asn Tyr Leu Arg Leu Leu Lys Gln Asn
20 25 30
Phe Ala Ile Thr Leu Pro Lys Glu Arg Thr Ser Lys Gly His Ser Leu
35 40 45
Met Leu Thr Phe Asp Phe Ala Ser Phe Asp Phe Tyr Thr Asn Ile Phe
50 55 60
Pro Phe Leu Glu Glu Gln Lys Ile Pro Ala Val Val Gly Val Ala Ser
65 70 75 80
Arg Tyr Ile Pro Ser Asn Ala Ala Gln Asp Leu His Pro Ser His Arg
85 90 95
Leu Lys Pro Ser Glu Thr Leu Ala Phe Gln Asp Glu Ile Phe Ser Asn
100 105 110
Tyr Met Pro Phe Cys Cys Gln Asn Glu Leu Ile Glu Met Ala Lys Ser
115 120 125
Pro Tyr Ile Gln Leu Ala Ser Ser Gly Phe Ala Ile Arg Asn Leu Met
130 135 140
Asn Asn Pro Pro Tyr Leu Thr Thr Glu Ile Leu Leu Ser Arg His His
145 150 155 160
Ile Glu Thr Ile Thr Gly Ala Lys Pro Leu Ala Phe Leu Phe Pro Phe
165 170 175
Gly Lys Ser Asp Pro Thr Ser Arg Lys Leu Ala Ala Asp His Tyr Pro
180 185 190
Tyr Ser Phe Leu Leu Gly Asn Thr Ile Asn Arg Lys Leu Lys Thr His
195 200 205
Asn Ile Tyr Arg Leu Asp Ile Lys Pro Met Gln Tyr Val Cys Pro Ser
210 215 220
Leu Phe Gln Ser Ser Arg Tyr Leu Lys Asn Trp Ile Lys Glu Lys Ser
225 230 235 240
Lys Gln Leu Tyr Leu Lys Lys Gln Leu Pro Lys Arg
245 250

<210>1216

<211>149

<212>PRT

<213>Chlamydia pneumoniae

<400>1216

Met Ala Asp Leu Glu Val Phe Gln Ala Asp Phe Ala Leu Leu Phe Glu
1 5 10 15
Ala Gly Leu Leu Ala Ile Lys Gln Gly Asp Glu Asp Ser Ala Arg Lys
20 25 30
Leu Phe Gln Ser Leu His Ile Leu Asn Pro Asn His Tyr Gly His Asp
35 40 45
Leu Gly Leu Ala Leu Ile Ser Leu His Lys Met Asp Leu Phe Asp Ala
50 55 60
Glu Glu Arg Leu Ser Ala Leu Ile Lys Gly Asn Glu Asp Asn Trp Ser
65 70 75 80
Ile Lys Ala Phe Leu Ser Leu Thr His Met Leu Ile Val Leu His Gln
85 90 95
Gly Ser Ser Phe Glu Val Arg Arg Glu Ser Leu Glu Ser Cys Leu Lys
100 105 110

WO 99/27105

Phe Ala Asp Gln Val Ile Ala Asn Cys Lys Ile Glu Ser Thr Arg Ala
 115 120 125
 Leu Ala Gln Ser Val Leu Asp Trp His Asp Thr Leu Val Ala Lys Ser
 130 135 140
 Ala Gly Pro Leu Gly
 145
 <210>1217
 <211>75
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>1217
 Met Phe Phe Ala Pro Leu Leu Tyr Glu Ser Leu Arg Arg Gly Leu Met
 1 5 10 15
 His Pro Thr Ser His Met Gln Gln Gln Leu Ala Arg Leu Glu Phe Ile
 20 25 30
 Asn Asp Gln Leu Thr Thr Glu Leu Glu His Val Asn Glu Leu Leu Cys
 35 40 45
 Ser Leu Gly Phe Pro Glu Gly Leu Thr Thr Ile Lys Ala Ile Ala Glu
 50 55 60
 Glu Val Leu Ser Asp Asp Glu Pro Leu Leu Asp
 65 70 75
 <210>1218
 <211>467
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>1218
 Leu Pro Ser Asn Arg Lys Asn Ala Lys Arg Asn Leu Tyr Lys Leu Ser
 1 5 10 15
 Phe Ile Ile Val Arg Lys Cys Val Val Thr Ser Ala Leu Asn Asp Phe
 20 25 30
 Phe Leu Thr Glu Thr Val Met Asn Ala Thr Lys His Cys Arg Ala Ser
 35 40 45
 Phe Ser Asn Ser Pro Arg His Leu Leu Ala Gln Leu Ala Glu Asp Ile
 50 55 60
 Thr Ser Thr His Gln Lys Pro Phe Thr Lys Arg Trp Ile Leu Val Ala
 65 70 75 80
 Asn Ala Thr Thr Gly His Trp Ile Lys Asn Gln Leu Val His Val Leu
 85 90 95
 Ser Asp His Ile Phe Met Gly Ser Thr Ile Phe Thr Ala Ser Asp Ser
 100 105 110
 Ile Val Lys His Leu Phe Leu Gly Ser Gly Cys Ser Gln Pro Asn Ile
 115 120 125
 Pro Asp Tyr Leu Thr Leu Pro Leu Leu Ile Asn Asn Ile Leu Glu Glu
 130 135 140
 Ile Ser Lys Ala Ser Lys Phe Glu Asn Gly Arg Glu Phe Leu Ser Pro
 145 150 155 160
 Pro Thr Tyr Gly Thr Lys Lys Leu Ala Ala Ala Phe Lys Gln Phe
 165 170 175
 His Thr Phe Ser Gln Arg Pro Thr Lys Asn Ala Ser His Tyr Gln Glu
 180 185 190
 Leu Phe Gln Ile Leu Glu Ser His Phe Ser Ser Tyr Glu Met Phe
 195 200 205
 Thr Thr Ile Leu Asn Asn Arg Thr Gln Glu Glu Asp Cys Ser Leu His
 210 215 220
 Ile Phe Gly Tyr Ala His Leu Pro Lys His Leu Ala Glu Phe Phe Ile
 225 230 235 240
 Asn Leu Ser Thr Tyr Phe Pro Val Tyr Phe Tyr Cys Phe Ser Pro Cys
 245 250 255
 Arg Glu Tyr Phe Gly Asp Leu Leu Ser Asp Arg Ala Ile Asp Phe Phe
 260 265 270
 Trp Asn Gln Leu Pro Asp Ser Pro Ile Lys Asn Ala Trp Glu His Tyr
 275 280 285
 Val Leu Ser Asp Arg Gln Ala Leu Leu Ala Asn Leu Ala His Lys Ser
 290 295 300

Gln Ser Ser Gln Asn Phe Phe Leu Asp Arg Glu Ile Asp Tyr Gln Glu
 305 310 315 320
 Met Phe Leu Pro Ser Lys His Asp Ser Ser Leu Gly Val Ile Gln Asn
 325 330 335
 Ser Ile Leu Asp Leu Lys Pro Thr Ser Pro Gln Asp Phe Ser Gln Thr
 340 345 350
 Lys Gln Thr Ile Cys Ile Tyr Arg Ala Leu Asn Ile Pro Arg Glu Val
 355 360 365
 Gln Glu Val Phe Cys Lys Val Thr Glu Leu Leu His Arg Gly Val Ser
 370 375 380
 Pro Glu Glu Ile Phe Ile Leu Ser Ser His Ile Glu Ser Tyr Lys Val
 385 390 395 400
 His Leu Asn Ala Ile Phe Asn Pro His Val Pro Ile Tyr Phe Thr Asp
 405 410 415
 Glu Val Asp Pro Arg Ala Glu Asp Leu Arg Asn Lys Asn Pro Pro Thr
 420 425 430
 Phe Phe Tyr Phe Thr Asn Thr Arg Gly Phe Thr Leu His Ser Ser Thr
 435 440 445
 Pro Tyr Ala Pro Thr Thr Thr Thr Thr Tyr Arg Ser Lys Gln Gly Ser
 450 455 460
 Leu Ser Asp
 465

<210>1219

<211>81

<212>PRT

<213>Chlamydia pneumoniae

<400>1219

Leu Glu Ala Pro Met Asn Glu Gly Ile His Ser Val Cys Phe Gln Lys
 1 5 10 15
 Thr Pro Arg Leu Thr Ala Lys Ser Val Val Ser Met Glu Met Leu Leu
 20 25 30
 Thr Thr Gln Gln Leu Pro Ser Ala Glu Gly Met Pro Ser Val Ala Asn
 35 40 45
 Leu Glu Ala Asp Phe Leu Arg Ala Glu Ala Leu Leu Ala Glu Met Arg
 50 55 60
 Glu Ile Arg Gly Cys Leu Glu Gln Ser Leu Arg Thr Leu Val Pro Ser
 65 70 75 80
 Glu

<210>1220

<211>95

<212>PRT

<213>Chlamydia pneumoniae

<400>1220

Met Met Lys Tyr Leu Pro Tyr Ile Ala Ile Thr Ala Cys Ile His Gly
 1 5 10 15
 Gly Ile Leu Leu Leu Val Phe Ala Ser Pro Leu Pro Lys Lys Arg Leu
 20 25 30
 Gln Pro Lys Ala Phe Gln Glu Lys Leu Val Thr Ile Gln Pro Lys Pro
 35 40 45
 Pro Val Pro Thr Pro Ser Val Val Val Asp Pro Ala Lys Thr Ile Arg
 50 55 60
 Pro Ser Val Leu Arg Ser His Lys Asn Lys Leu Asn Ala Ala Leu Leu
 65 70 75 80
 Lys Arg Thr Ser Arg Arg Leu Tyr Lys Asn Pro Phe Gln Lys Leu
 85 90 95

<210>1221

<211>96

<212>PRT

<213>Chlamydia pneumoniae

<400>1221

Leu Asn Lys Phe Lys Thr Tyr Leu Gln Thr Ala Leu Ile Ala Pro Phe
 1 5 10 15
 Phe Ser Phe Pro Ala Leu Ser Gly Ser Phe Ser Ser Ile Gln Ala Glu

WO 99/27105

20 25 30
 Glu Ile Xaa Gln Gln Val Asn His Pro Gly Ala Glu Leu Leu Ser Glu
 35 40 45
 Gly Ser Tyr Ile Pro Gly Leu Gln Thr Phe Arg Leu Gly Ile Lys Ile
 50 55 60
 Tyr Ser Phe Gln Arg Glu Pro Tyr Leu Leu Glu Glu Ser Arg Arg Asn
 65 70 75 80
 Trp Lys Ser Ser Gln Asn Phe Leu Ala Val Ala Glu Arg Phe Arg Gly
 85 90 95

<210>1222

<211>76

<212>PRT

<213>Chlamydia pneumoniae

<400>1222

Val Arg Ala Leu Phe Arg Ser Gly Tyr Lys Gly Arg Gln Gly Ile Tyr
 1 5 10 15
 Glu Phe Leu Arg Pro Asn Thr Leu Phe Arg Ser Glu Val Ala Ser Asn
 20 25 30
 Arg Pro Tyr His Ile Leu Arg Glu Thr Ala Glu Gln Asn Gly Phe Leu
 35 40 45
 Pro Ile Leu Glu His Gly Ile Ala Leu Ala Val Ser Gly Glu Thr Thr
 50 55 60
 Leu Ala Glu Val Leu Arg Val Thr Lys Arg Cys Asp
 65 70 75

<210>1223

<211>185

<212>PRT

<213>Chlamydia pneumoniae

<400>1223

Val Pro Thr Leu Ala Lys Ser Phe Tyr Ile Asn Ile Arg Asp Ser Arg
 1 5 10 15
 Phe Tyr Ser Trp Leu Cys Phe Ile Met Lys Glu Thr Tyr Tyr Arg Asp
 20 25 30
 Phe Leu His Glu Asn Tyr Leu Lys Asn Lys Lys Ser Met Phe Met Lys
 35 40 45
 Ile Tyr Lys Thr Ala Gly Glu Phe Phe Leu Ala Asn Ala Lys Trp Pro
 50 55 60
 Leu Val Pro Ala Gly Tyr Arg Arg Val Arg Gly Lys Asp Phe Val Leu
 65 70 75 80
 Ser Pro Leu Val Asp Leu Val Ile Leu Phe Pro Trp Val Thr Lys Asp
 85 90 95
 Ser Arg Tyr Ser Pro Cys Ser Met Thr Phe Thr Cys Ile Cys Arg Ser
 100 105 110
 Ile Val Glu Cys Ile Pro Val Val Ser Thr Leu Phe Gly Ile Gly Arg
 115 120 125
 Phe Cys Ala Val Trp Cys Val Glu Gly Phe Ser Gly Ser Thr Phe Asp
 130 135 140
 Lys Ile Tyr His Thr Ile Val Ala Val Leu Gly Ile Leu Gly Leu Gly
 145 150 155 160
 Ile Leu Thr Phe Ile Leu Arg Ile Ile Phe Ser Val Leu Met Leu Pro
 165 170 175
 Val Trp Phe Leu Phe Lys Cys Tyr Ser
 180 185

<210>1224

<211>75

<212>PRT

<213>Chlamydia pneumoniae

<400>1224

Met Trp Trp Asn Pro Ala Val Glu Asn Gln Ala Thr Asp Arg Val His
 1 5 10 15
 Arg Ile Gly Gln Ser Arg Ser Val Ser Ser Tyr Lys Leu Val Thr Leu
 20 25 30
 Asn Thr Ile Glu Glu Lys Ile Leu Thr Leu Gln Asn Arg Lys Xaa Ser
 35 40 45

Leu Val Lys Lys Val Ile Asn Ser Asp Asp Glu Val Val Ser Lys Leu
 50 55 60
 Thr Trp Glu Glu Val Leu Glu Leu Leu Gln Ile
 65 70 75
 <210>1225
 <211>122
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>1225
 Met Arg Asp Arg Leu Gly Ser Leu Ser Leu Ile Leu Lys Val Lys Ile
 1 5 10 15
 His Lys Tyr Leu Asp Thr Leu His Asn Gln Lys Arg Leu Ala Leu Thr
 20 25 30
 Val Ser Arg Asn Ile Gln Ala Thr Asn Lys Arg Ile Ala Asp Leu His
 35 40 45
 Leu Glu Arg Tyr Glu His Phe Ile Ser Arg Asp Asn Ile Lys His Tyr
 50 55 60
 Asp Ile Leu Leu Glu Tyr Leu Lys Thr Leu Gln Ser Ser Leu Tyr Lys
 65 70 75 80
 Gln Gln Ser Glu Ser Leu Arg Phe Leu Glu Ile His His Gln Gln Leu
 85 90 95
 Gln Glu Leu Ile Asn Arg Arg Lys Ile Ile Glu Lys Ile Lys Asn Asn
 100 105 110
 Lys Tyr Ser Lys Asp Gln Glu Ile Gly Thr
 115 120
 <210>1226
 <211>178
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>1226
 Val Thr Thr Pro Gln Ser Pro Gly Ser Leu Ser Gln Ser His Leu Pro
 1 5 10 15
 His Pro His Asp Pro Trp Asp Thr Glu Pro Thr Ser Leu Xaa Glu Xaa
 20 25 30
 Pro Asn Asp Lys Ala Ser Gln Glu Leu His Ser Leu Val His Leu Phe
 35 40 45
 Arg Lys Leu Ser Ile His Leu Leu Ser Glu Val Glu Lys Thr Val Gln
 50 55 60
 Gln Leu Lys Pro Asp Leu Leu Glu Leu Ala Leu Leu Ile Cys Glu Lys
 65 70 75 80
 Phe Leu Tyr Lys Lys Leu Glu Asn Pro Gln Glu Leu Ala Leu Leu Leu
 85 90 95
 Ser Thr Ala Leu Gln Arg His Thr Thr Leu Arg Ser Leu Thr Pro Ile
 100 105 110
 Lys Val Phe Leu His Pro Glu Asp Leu Lys Thr Leu Thr Asp Trp Ile
 115 120 125
 Ser Thr His Glu Leu Pro Met Ile Lys His Ala Glu Phe Phe Pro Asp
 130 135 140
 Thr Ser Cys Arg Arg Ser Gly Phe Lys Ile Glu Thr Pro Asn Gly Ile
 145 150 155 160
 Leu Arg Gln Glu Ile Ser Glu Glu Leu Asp His Leu Leu Ser Val Leu
 165 170 175
 Thr Ala
 <210>1227
 <211>161
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>1227
 Leu Leu Leu Arg Tyr His Ala Lys Ala Glu Lys Pro Thr Leu Gln Leu
 1 5 10 15
 Thr Leu Asn Glu Asn Tyr Ile Ala His Leu Thr Lys Glu Glu Ser Glu
 20 25 30
 Lys Ile Val Ala His Thr Lys His Tyr Leu Leu Ser Asn Xaa Asp Asp

35 40 45
 Ser Tyr Asp Ile Val Ile Glu Thr Leu Pro Phe Ala Arg Leu Gln Asn
 50 55 60
 Lys Lys Ser Phe Ser Ala Lys Val Leu Ile Gly Ser Met Ile Leu Val
 65 70 75 80
 Ile Ser Leu Met Ile Val Ala Leu Ala Ser Phe Tyr Leu Ala Arg His
 85 90 95
 Ala Tyr Glu Arg Val Ser Pro Glu Pro Arg Lys Ile Lys Arg Gly Ile
 100 105 110
 Asn Ile Ser Lys Leu Leu Glu Ile Ile Gln Lys Glu Ser Pro Glu Lys
 115 120 125
 Ile Ala Leu Ile Leu Ser Tyr Leu Asp Pro Lys Lys Ala Glu Ala Leu
 130 135 140
 Leu Asn Arg Leu Pro Glu Asp Leu Lys His Gln Val Leu Lys Tyr Lys
 145 150 155 160
 Leu

<210>1228

<211>75

<212>PRT

<213>Chlamydia pneumoniae

<400>1228

Val Phe Phe Gln Asn Leu Ala Lys Lys Leu Thr Ala Leu Gly Ile Ser
 1 5 10 15
 Pro Leu Gly Cys Leu Leu Ile Gly Gly Val Val Ser Cys Ala Ile Leu
 20 25 30
 Phe Gly Arg Ser Ser Asn Pro Ser Leu Ala Pro Thr Gln Val Lys Thr
 35 40 45
 Glu Lys Thr Ser Gly Asn Trp Leu Lys Leu Thr Gln Met Gly Asn Pro
 50 55 60
 Lys Leu Ile Glu Ser Leu Thr Lys Lys Asp Ser
 65 70 75

<210>1229

<211>100

<212>PRT

<213>Chlamydia pneumoniae

<400>1229

Met Gly Tyr Val Phe Tyr Val Ile Ala Gly Ser Ile Phe Leu Gly Ile
 1 5 10 15
 Ser Leu Gly Ala Tyr Cys Gln Leu Tyr Tyr Ser Val Lys Ser Val Leu
 20 25 30
 Phe Ser Trp Tyr Leu Leu Thr Val Tyr Ala Leu Glu Lys Arg His Ala
 35 40 45
 Leu Leu Ala Leu Ser Gln Leu Val Gly Glu Glu Asp Ala Gln Ser Gln
 50 55 60
 Lys Glu Ile Asp Phe Leu Ser Gln Cys Asp Lys Leu Ser Trp Arg Ala
 65 70 75 80
 Phe Leu Lys Asn Ser Tyr Glu Ile Ile Pro Thr Phe Gln Arg Asp Gly
 85 90 95
 Arg Pro Ser Phe
 100

<210>1230

<211>103

<212>PRT

<213>Chlamydia pneumoniae

<400>1230

Val Thr Ser Ser Leu Gly Val Arg Ser Ser Lys Ile Ala Thr Arg Ser
 1 5 10 15
 Ser Gln His Phe Lys Glu Met Glu Asp Leu Leu Ser Glu Arg Val Gln
 20 25 30
 Gly Phe Leu Glu Ser Ile Glu Thr Ile Ala Glu His Asp Arg Ala Ile
 35 40 45
 Leu Cys Ile Glu Asn Phe Trp Ala Ser Lys Asn Leu Phe Asp Phe Glu
 50 55 60

Ile Ala Ala Tyr Glu Glu Ala Val Glu Lys Tyr Leu Lys Leu Arg Gln
 65 70 75 80
 Arg Ala Pro Leu Arg Leu Ala Ser Lys Leu Phe Arg Phe Leu Asp Val
 85 90 95
 Pro Ser Ile Arg Phe Ser Ser
 100
 <210>1231
 <211>94
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>1231
 Ser Ile Ala Thr Gly Glu Thr Met Leu Tyr Phe Ile Glu Gln Leu Asn
 1 5 10 15
 Lys Leu Ser Thr Ser Phe Cys Val Phe Pro Met Ile Leu Leu Leu Gly
 20 25 30
 Gly Phe Leu Thr Trp Lys Leu Arg Gly Leu Gln Phe His Gly Leu Lys
 35 40 45
 Leu Gly Phe Asn Leu Met Leu Gln Asn Lys Leu Asp Asp Ser Ser Ser
 50 55 60
 Lys Ala Asn Glu Val Ser Ser Tyr Glu Ala Val Ala Gly Ile Leu Ala
 65 70 75 80
 Gly Asn Phe Gly Thr Gly Asn Ile Ala Gly Met Leu Ser Pro
 85 90
 <210>1232
 <211>240
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>1232
 Val Pro Asn Arg His Val Asp Met Asn Ser Trp Trp Arg Ser Ala Cys
 1 5 10 15
 Tyr Pro Arg Ser Thr Phe Tyr Pro Leu Ser Asp Gly Asp Ser Thr Phe
 20 25 30
 His Arg Arg Ile Thr Lys Pro Asp Phe Arg Leu Cys Ser Thr Cys Lys
 35 40 45
 Ser Cys Ser Gln Pro Ile Leu Tyr Leu Tyr Ala Leu Leu Val Ile Ala
 50 55 60
 Asn His Asp Glu Ile Ser Phe Gly Leu Leu Arg Tyr Phe Leu Gly Gly
 65 70 75 80
 Tyr Arg Pro Ser Lys Thr Ala Arg Leu Ala Met Ser Ile Leu Gln Ile
 85 90 95
 His Gly Val Met Leu Asp Ser Gln Leu Val Lys Thr Ser Ile Ser Thr
 100 105 110
 Met Thr Pro Thr Leu Leu Thr Lys Ser Val His Ser Leu Leu Ala Ile
 115 120 125
 Leu His Ile Thr Asn Gln Lys Ser Ile Pro Lys Tyr Ser Lys Gly Ser
 130 135 140
 Arg Gly Leu Phe Val Leu Leu Arg Val Asn Ser Ile Phe Thr Ala Thr
 145 150 155 160
 Thr Ile Ser Pro Ser Leu Ser Leu Arg Gln Cys Pro Asp Arg Tyr Thr
 165 170 175
 Ile Arg Ala Gly Arg Asn Leu Pro Asp Lys Glu Phe Arg Tyr Leu Ser
 180 185 190
 Thr Val Ile Val Thr Ala Ala Ile His Gln Gly Leu Gly Ser Met Leu
 195 200 205
 Ser Leu Arg Leu Thr Tyr Pro Phe Asn Leu Leu Ala Leu Gly Arg Arg
 210 215 220
 His Thr Ile Tyr Phe Pro Leu Glu Val Cys Ile Val Leu Cys Phe Cys
 225 230 235 240
 <210>1233
 <211>133
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>1233
 Leu Asn Phe Val Ser Thr Leu Thr Gly Ser Asp Phe Tyr Ala Pro Val

WO 99/27105

1 5 10 15
 Leu Glu Lys Leu Glu Glu Ala Phe Ala Asp Thr Thr Gly Gln Ala Ile
 20 25 30
 Leu Phe Ser Ser Ser Pro Asp Phe Ile Val His Pro Ile Ala Gln Gln
 35 40 45
 Leu Gly Ile Ser Ser Trp Tyr Ala Ser Cys Tyr Arg Asp Gln Ser Ala
 50 55 60
 Glu Gln Thr Ile Tyr Lys Lys Cys Leu Thr Gly Asp Lys Lys Ala Gln
 65 70 75 80
 Ile Leu Ser Tyr Ile Lys Lys Ile Asn Gln Ala Arg Ser His Thr Phe
 85 90 95
 Ser Asp His Ile Leu Asp Leu Pro Phe Leu Met Leu Gly Glu Glu Lys
 100 105 110
 Thr Val Val Arg Pro Gln Gly Arg Leu Lys Lys Met Ala Lys Lys Tyr
 115 120 125
 Tyr Trp Asn Ile Val
 130

<210>1234

<211>118

<212>PRT

<213>Chlamydia pneumoniae

<400>1234

Val Ile Leu Leu Gln Asn Ile Lys Arg Cys Ser Leu Lys Gln Leu Lys
 1 5 10 15
 Val Leu Ala Thr Leu Leu Leu Ser Leu Ser Leu Pro Thr Leu Glu Ala
 20 25 30
 Ala Glu Asn Arg Asp Ser Asp Ser Ile Val Trp His Leu Asp Tyr Gln
 35 40 45
 Glu Ala Leu Gln Lys Ser Lys Glu Ala Glu Leu Pro Leu Leu Val Ile
 50 55 60
 Phe Ser Gly Ser Asp Trp Asn Gly Pro Cys Met Lys Ile Arg Lys Glu
 65 70 75 80
 Val Leu Glu Ser Pro Glu Phe Ile Lys Arg Val Gln Gly Lys Phe Val
 85 90 95
 Cys Val Glu Val Glu Tyr Leu Lys His Arg Pro Gln Leu Lys Thr Phe
 100 105 110
 Val Ser Lys Ile Leu Leu
 115

<210>1235

<211>87

<212>PRT

<213>Chlamydia pneumoniae

<400>1235

Met Lys Ser Phe Lys Phe Leu Leu Pro Phe Leu Ser Val Ile Leu Cys
 1 5 10 15
 Cys Gly Asn Leu Leu Ser Ser Pro Arg Ser Arg Ala Ile Ser Val Thr
 20 25 30
 Glu Ser Ile Gly Met Ser Ala Val Lys Thr Leu Val Leu Ser Glu Lys
 35 40 45
 Ala His Glu Phe Leu Glu Gly Ile Gly Tyr Gly Val Gly Ala Ser Ser
 50 55 60
 Ile Leu Arg Asp Trp Gln Thr Gln Gln Trp Leu Glu Ile Glu Ser Leu
 65 70 75 80
 Leu Ala Gln Asn Glu Val Met
 85

<210>1236

<211>141

<212>PRT

<213>Chlamydia pneumoniae

<400>1236

Met Gln Tyr Phe Ser Pro Ala Lys Leu Asn Leu Phe Leu Lys Ile Trp
 1 5 10 15
 Gly Lys Arg Phe Asp Asn Phe His Glu Leu Thr Thr Leu Tyr Gln Ala
 20 25 30

Ile Asp Phe Gly Asp Thr Leu Ser Leu Lys Asn Ser Met Lys Asp Ser
35 40 45
Leu Ser Ser Asn Val Asn Glu Leu Leu Ser Pro Ser Asn Leu Ile Trp
50 55 60
Lys Ser Leu Glu Ile Phe Arg Arg Glu Thr Gln Ile His Gln Pro Val
65 70 75 80
Ser Trp His Leu Asn Lys Ser Ile Pro Leu Gln Ser Gly Leu Gly Gly
85 90 95
Gly Ser Ser Asn Ala Ala Thr Ala Leu Tyr Ala Leu Asn Glu His Phe
100 105 110
Gln Thr His Ile Pro Ile Thr Thr Leu Gln Leu Trp Ala Arg Glu Ile
115 120 125
Gly Ser Asp Val Pro Phe Phe Phe Leu Gln Glu Gln His
130 135 140

<210>1237

<211>174

<212>PRT

<213>Chlamydia pneumoniae

<400>1237

Leu Gly Ser Arg Asn Arg Lys Arg Cys Ser Phe Phe Phe Ser Ser Gly
1 5 10 15
Thr Ala Leu Gly Lys Gly Arg Gly Glu His Leu Phe Ser Ile Lys Lys
20 25 30
Leu Asn His Lys His Lys Tyr Val Leu Tyr Leu Asp His Gln Gly Ile
35 40 45
Pro Thr Glu Lys Ala Tyr Gln Ser Leu Leu Pro Gln Asp Tyr Ser Thr
50 55 60
Gly Asn His Asn Ala Cys Phe Tyr Gly Glu Asn Asp Leu Glu Lys Ser
65 70 75 80
Val Phe Arg Ile Arg Thr Asp Leu Lys Asn Lys Lys His Met Leu Glu
85 90 95
Arg Met Trp Ser Pro Phe Glu Ser His Val Leu Met Ser Gly Ser Gly
100 105 110
Ala Thr Leu Phe Val Cys Tyr Leu Glu Glu Leu Glu Gln Asp Ser Lys
115 120 125
Val Ser Ser Gln Ile His Ser Leu Ile Lys Gln Thr Gln Gly Ile Pro
130 135 140
Val Ser Arg Leu Tyr Arg Glu Pro His Trp Tyr Ser Leu Lys Gln Ser
145 150 155 160
Thr Tyr Lys Asn Ser Pro Leu Glu Cys Phe Gln Pro Gln Ile
165 170

<210>1238

<211>106

<212>PRT

<213>Chlamydia pneumoniae

<400>1238

Met Gly Leu Tyr Asp Arg Asp Tyr Ile Gln Asp Ser Arg Val Gln Gly
1 5 10 15
Thr Phe Ala Ser Arg Val Tyr Gly Trp Met Thr Ala Gly Leu Ile Val
20 25 30
Thr Ser Cys Val Ala Leu Gly Leu Tyr Phe Ser Gly Leu Tyr Arg Ser
35 40 45
Leu Phe Ser Phe Trp Trp Val Trp Cys Phe Ala Thr Leu Gly Val Ser
50 55 60
Phe Phe Ile Asn Ser Lys Ile Gln Thr Leu Ser Val Val Gly Gln Val
65 70 75 80
Met Ala Tyr Ala Met Val Leu Ala Lys Gly Met Glu Ile Asp Cys Pro
85 90 95
Arg Asn Leu Ala Lys Ser Val Thr Val Glu
100 105

<210>1239

<211>217

<212>PRT

<213>Chlamydia pneumoniae

WO 99/27105

<400>1239

Met Ser Asn Lys Val Leu Gly Gly Ser Leu Leu Ile Ala Gly Ser Ala
 1 5 10 15
 Ile Gly Ala Gly Val Leu Ala Val Pro Val Leu Thr Ala Lys Gly Gly
 20 25 30
 Phe Phe Pro Ala Thr Phe Leu Tyr Ile Val Ser Trp Leu Phe Ser Met
 35 40 45
 Ala Ser Gly Leu Cys Leu Leu Glu Val Met Thr Trp Met Lys Glu Ser
 50 55 60
 Lys Asn Pro Val Asn Met Leu Ser Met Ala Glu Ser Ile Leu Gly His
 65 70 75 80
 Val Gly Lys Ile Ser Ile Cys Leu Val Tyr Leu Phe Leu Phe Tyr Ser
 85 90 95
 Leu Leu Ile Ala Tyr Phe Cys Glu Gly Gly Asn Ile Leu Cys Arg Val
 100 105 110
 Phe Asn Cys Gln Asn Leu Gly Ile Ser Trp Ile Xaa Xaa Leu Gly Pro
 115 120 125
 Leu Gly Phe Ala Ile Leu Met Gly Pro Ile Ile Xaa Xaa Gly Thr Xaa
 130 135 140
 Xaa Ile Asp Tyr Cys Xaa Xaa Phe Phe Xaa Xaa Gly Leu Xaa Val Xaa
 145 150 155 160
 Phe Gly Ile Xaa Xaa Ala Leu Gly Phe Leu Lys Ile Gln Pro Ser Phe
 165 170 175
 Met Val Arg Ser Ser Met Val Asn Tyr Asn Lys Arg Ile Ser Cys Val
 180 185 190
 Phe Ser Leu Leu Phe Gly Phe Gln Ser Xaa Ile Pro Thr Leu Tyr Tyr
 195 200 205
 Tyr Met Asp Lys Lys Ser Trp Arg Cys
 210 215

<210>1240

<211>115

<212>PRT

<213>Chlamydia pneumoniae

<400>1240

Leu Val Ser Ser Phe Val Gly Val Ala Leu Gly Val Met Asp Phe Leu
 1 5 10 15
 Ala Asp Gly Leu Lys Trp Asn Lys Lys Ser His Pro Phe Ser Ile Phe
 20 25 30
 Phe Leu Thr Phe Ile Ile Pro Leu Ala Trp Ala Val Cys Tyr Pro Glu
 35 40 45
 Ile Val Leu Thr Cys Leu Lys Tyr Ala Gly Gly Phe Gly Ala Ala Val
 50 55 60
 Ile Ile Gly Val Phe Pro Thr Leu Ile Val Trp Lys Gly Arg Tyr Gly
 65 70 75 80
 Lys Gln His His Arg Glu Lys Gln Leu Val Pro Gly Gly Lys Phe Ala
 85 90 95
 Leu Phe Leu Met Phe Leu Leu Ile Val Ile Asn Val Val Ser Ile Tyr
 100 105 110
 His Glu Leu
 115

<210>1241

<211>105

<212>PRT

<213>Chlamydia pneumoniae

<400>1241

Leu Phe Pro Leu Val Leu Leu Ala Trp Val Ile Arg Tyr Gln Leu His
 1 5 10 15
 Ala Asn Phe His Cys Ser Val Val Pro Phe Pro Gly Phe Ser Val Asn
 20 25 30
 Gln Ala Tyr Lys Cys Ser Glu Ala Lys Ile Glu Glu Met Leu Asp Leu
 35 40 45
 Leu Asp Leu Glu Thr Leu Glu Trp Ser Ser Arg Cys Leu Arg Gln Asp
 50 55 60
 Met Thr Phe Ala Asn Arg Leu Glu Glu Glu Leu Ile Gln Glu Leu Arg

65 70 75 80
 Val Ser Glu Thr Glu Glu Leu Ile Ser Leu Gly Gly Lys Arg Asn Leu
 85 90 95
 Val Arg Leu Leu Thr His Ser Phe
 100 105
 <210>1242
 <211>158
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>1242
 Met Arg Val Ile Phe Pro Asp Lys His Asn Asn Phe Pro Asn Leu Ser
 1 5 10 15
 Lys Leu Leu Lys Lys Leu Pro Ser Val Ile Leu Val Thr Ser Cys Ile
 20 25 30
 Ala Pro Phe Phe Ser Tyr Ile Ile Asn Lys Phe Phe Gly Ile Pro Gly
 35 40 45
 Leu Leu Glu Ile Leu Ala Leu Ser Val Lys Gly Ile Gln Lys His His
 50 55 60
 Phe Trp Gln Phe Leu Thr Tyr Pro Leu Ile Thr Ala Asp Ser Leu Ser
 65 70 75 80
 Leu Asn Lys Asp Gln Ser Phe Glu Ile Thr Gln Arg Leu Leu Leu Arg
 85 90 95
 Asn Val Leu Asp Phe Phe Leu Phe Tyr Lys Ala Ile Gln His Leu Ile
 100 105 110
 Arg Lys Leu Gly Ala Phe Ser Val Leu Val Val Ile Ser Gly Gln Ala
 115 120 125
 Leu Ile Ile Gly Ala Val Leu Trp Gly Phe Met Ala Leu Ile Thr Ala
 130 135 140
 Pro Asn Leu Ser Ser Val Arg Lys Val Leu Ser Val Val Phe
 145 150 155
 <210>1243
 <211>135
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>1243
 Met Arg Leu Lys Asn Tyr Pro Met Ile Gln Phe Ser Phe Phe Leu Pro
 1 5 10 15
 Gln Thr Cys Ile Leu Leu Leu Ala Ser Asp Ser Leu Thr Asn Ile Leu
 20 25 30
 Ala Leu His His Leu Leu Ala Asn Tyr Ser Val Lys Gln Arg Met Leu
 35 40 45
 Val Leu Leu Arg Glu Ser Phe Phe Ala Phe Ile Ala Met Phe Ala Leu
 50 55 60
 Tyr Gly Leu Ala Leu Gly Gly Leu Lys Val Leu Asn Thr Pro Val Cys
 65 70 75 80
 Ala Ile Glu Val Val Gly Gly Ile Ala Val Thr Leu Ala Gly Val Arg
 85 90 95
 Ala Val Leu Arg Leu Gly Lys Glu Glu Ser Trp Ile Pro Tyr Lys Phe
 100 105 110
 Asn Met Ser Pro Ser Tyr Ser Pro Cys Ile Ser Pro Ile Ala Leu Pro
 115 120 125
 Leu Met Phe Gly Pro Ser Gly
 130 135
 <210>1244
 <211>160
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>1244
 Met Lys Lys Lys Phe Ile Phe Tyr Phe Val Ile Val Phe Ser Leu Leu
 1 5 10 15
 Phe Leu Trp Glu Met Thr Ser Arg His Arg Pro Thr Phe Ser Phe Phe
 20 25 30
 Cys Pro Pro Pro Ser Ser Ile Ala Ser Ser Thr Leu Gln Ser Leu Pro
 35 40 45

WO 99/27105

Leu Leu Leu Thr Ser Ala Trp His Thr Leu Lys Ala Ile Leu Gly Gly
 50 55 60
 Phe Phe Leu Ala Ile Thr Leu Ser Ile Val Leu Ala Thr Ile Met Leu
 65 70 75 80
 Ser Tyr Lys Ser Ala Lys Asp Leu Leu Gln Pro Leu Phe Ile Leu Leu
 85 90 95
 Gln Cys Thr Pro Met Phe Ala Leu Ala Pro Leu Ile Val Leu Trp Phe
 100 105 110
 Gly Trp Gly Ile Gly Ala Val Ile Val Pro Thr Ala Leu Thr Ile Phe
 115 120 125
 Phe Pro Leu Thr Leu Thr Ile Tyr Gln Gly Ile Leu Ser Thr Pro Glu
 130 135 140
 Glu Leu Ile Glu Gln Phe Val Leu Cys Gly Val Gln Asn Ser Asn Ser
 145 150 155 160

<210>1245

<211>227

<212>PRT

<213>Chlamydia pneumoniae

<400>1245

Met Leu Trp Gly Val Ser Met Arg Gln Ser Phe Asp Glu Leu Ser Gln
 1 5 10 15
 Asn Ala Phe Lys Asn Ile Phe Asn Lys Gln Arg Phe Cys Phe Ile Phe
 20 25 30
 Cys Ser Leu Cys Cys Phe Gly Phe Val Phe Ala Leu Phe Leu Lys Leu
 35 40 45
 Cys Ser Arg Leu Ala Pro Glu Ile Ser Leu Ser Thr Leu Gly Leu Gly
 50 55 60
 Ala Phe Phe Cys Ala Phe Ser Val Ile Cys Ala Ser Ala Ile Ile Val
 65 70 75 80
 Gln Phe Leu Leu His Lys Glu Ser Gln Gly Glu Thr Ser Lys Leu Cys
 85 90 95
 Cys Ala Ile Lys Asn Thr Trp Ser Ser Leu Trp Leu Ser Leu Leu Val
 100 105 110
 Ser Met Pro Phe Phe Ile Ala Met Val Ala Val Val Thr Val Ala Met
 115 120 125
 Leu Ser Ser Phe Leu Gly Ser Leu Pro Trp Val Gly Lys Leu Phe His
 130 135 140
 Thr Val Leu Ile Phe Ile Pro Tyr Leu Ser Ala Thr Ala Leu Ile Leu
 145 150 155 160
 Leu Phe Leu Gly Ser Phe Ser Cys Leu Phe Phe Cys Ile Pro Val Leu
 165 170 175
 His Asn Gln Glu Ser Ile Asp Tyr Arg Lys Leu Pro Arg Val Phe Ser
 180 185 190
 Trp Glu Tyr Pro Ser Ala Val Tyr Arg Gly Gly Asp Cys Phe Gly Ser
 195 200 205
 Xaa Ser Pro Met Gln Leu Val Ser Phe Arg Phe Phe Leu Phe Asp Asp
 210 215 220

Thr Ser Cys

225

<210>1246

<211>78

<212>PRT

<213>Chlamydia pneumoniae

<400>1246

Val Val Ile Ala Leu Val Pro Leu Ala Leu Cys Ser Trp Leu Ala Leu
 1 5 10 15
 Asp Ser Phe Tyr Leu Met Thr His Leu Val Glu Ile Ala Asp Ile His
 20 25 30
 Thr Trp Ser Phe Leu Ala Gln Met Phe Val Leu Ile Val Pro Ile Ala
 35 40 45
 Leu Ile Leu Thr Pro Ala Val Ser Phe Phe Phe Asn Phe Ser Phe Ser
 50 55 60
 Phe Tyr Leu Ala Lys Gln Glu Glu Glu Lys Ala Leu Val Lys
 65 70 75

<210>1247
 <211>94
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>1247
 Leu Arg Ala Phe Phe Pro Val Lys Ala Trp Arg Ser Pro Glu Asp Ile
 1 5 10 15
 Pro Glu Ala Pro Ser Pro Lys Gly Ile Gly Ser Lys Arg Ser Ile Val
 20 25 30
 Ala Val Pro Trp Glu Trp Arg Ser Arg Cys Gln Val Thr Glu Ser Pro
 35 40 45
 Ala Tyr Pro Ala Pro Lys Thr Ala Ile Arg Ile Lys Cys Thr Leu Asn
 50 55 60
 Gln Val Ser Leu His Arg Pro Cys Leu Glu Asn Lys Arg Ile Arg Asp
 65 70 75 80
 Lys Arg Thr Gly Gly Asn Leu Ser Asp Trp Glu Ile Lys Met
 85 90

<210>1248
 <211>86
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>1248
 Met Arg Ile Ala Val Leu Gly Ala Gly Tyr Ala Gly Leu Ser Val Thr
 1 5 10 15
 Trp His Leu Leu Leu His Ser Gln Gly Thr Ala Thr Ile Asp Leu Phe
 20 25 30
 Asp Pro Ile Pro Leu Gly Glu Gly Ala Ser Gly Met Ser Ser Gly Leu
 35 40 45
 Leu His Ala Phe Thr Gly Lys Lys Ala Leu Lys Pro Pro Leu Val Gly
 50 55 60
 Ser Arg Asn Gln Cys Tyr Thr Arg Val Asn His Xaa Ala Leu Val Lys
 65 70 75 80
 Pro Ser Thr Tyr Leu Leu
 85

<210>1249
 <211>232
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>1249
 Leu Pro Met Asn Thr Ser His Arg Lys Thr Leu Val Phe Ser Tyr Leu
 1 5 10 15
 Ser Ser Thr Phe Thr Leu Leu Leu Val Leu Ser Asn Leu Val Leu Ser
 20 25 30
 Ser Lys Leu Ile Pro Thr Thr Phe Asn Phe Ile Ile Pro Gly Gly
 35 40 45
 Leu Ile Leu Tyr Pro Leu Thr Phe Leu Ile Ser Asp Val Val Asn Glu
 50 55 60
 Ile Phe Gly Pro Lys Lys Ala Arg Val Met Ile Phe Ser Ala Phe Ile
 65 70 75 80
 Ala Asn Leu Leu Ala Ser Ser Ile Val Gln Ile Phe Met Phe Phe Pro
 85 90 95
 Val Ala Ser Pro Glu Met Gln Thr Ala Trp His Cys Leu Phe Asp Leu
 100 105 110
 Ser Pro Leu Arg Phe Leu Ala Ser Leu Leu Ala Phe Ile Val Ser Gln
 115 120 125
 Gln Leu Asp Ile Val Leu Tyr Thr Phe Phe Lys Asn Arg Thr Pro Asn
 130 135 140
 Ser Ser Leu Trp Leu Arg Ser Asn Gly Ser Thr Trp Ile Ser Gln Xaa
 145 150 155 160
 Pro Asp Thr Phe Ile Val Asp Thr Cys Ile Leu Tyr Phe Gly Met Gly
 165 170 175
 Leu Ser Phe Pro Gln Thr Leu Asn Ile Met Phe Tyr Ser Tyr Ile Tyr
 180 185 190
 Lys Ile Thr Phe Cys Val Leu Thr Thr Pro Leu Phe Tyr Leu Ala Val

WO 99/27105

195 200 205
 Asn Thr Ile Arg Lys Phe Leu Gly Met Pro Ser Thr Lys Ile Ala Asn
 210 215 220
 Thr Val Pro Leu Ile Asn Gln Pro
 225 230
 <210>1250
 <211>103
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>1250
 Met Thr Pro Lys Ser Ile Gln Gln Leu His Leu Ile Lys Thr Ile Asp
 1 5 10 15
 Pro Val Arg Lys Ile Ser Pro Val Thr Thr Lys Lys Ser Ser Phe Phe
 20 25 30
 Arg Gln Ser Leu Leu Arg Phe Leu Glu Leu Phe Trp Met Phe Leu Tyr
 35 40 45
 Cys Ile Arg Ser Ile Arg Phe His Cys Val His Ile Ala Thr Phe Ile
 50 55 60
 Cys Arg Gly Leu Ile Leu Phe Leu Thr Thr Leu Phe Leu Ser Met Ile
 65 70 75 80
 Cys Ile Leu His Phe Ile Thr Leu Pro Trp Ile Cys Lys Glu Asp Pro
 85 90 95
 Arg Ile Ile Arg Lys Asn Lys
 100
 <210>1251
 <211>79
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>1251
 Leu Asn Phe Ala Lys Ile Asp His Asn His Leu Tyr Leu Thr Cys Leu
 1 5 10 15
 Gly Asp Leu Gly Val Ala Cys Pro Ile Leu Ser Thr Asp Cys Leu Pro
 20 25 30
 Asn Tyr Ser Glu Lys Ala Ser His Glu Val Leu Val Tyr Ser Lys Phe
 35 40 45
 Arg Cys Ile Ser Gly Glu Pro Ser Arg Leu Ala Thr Ser Gly Asn Asp
 50 55 60
 Thr Tyr Tyr Ser Ile Val Ser Leu Pro Ile Gly Leu Arg Tyr Glu
 65 70 75
 <210>1252
 <211>85
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>1252
 Met Val Glu Ile His His Lys Asp Pro Ser Leu Lys Lys Leu Phe Ala
 1 5 10 15
 Leu Gln Gln Ser Leu Glu Thr Leu Asn Ser Leu Ser Asp Ile Val Ala
 20 25 30
 Thr Tyr Glu Ala Met Phe Ser Leu Ile Tyr Glu Gly Leu Asn Lys Ala
 35 40 45
 Leu Arg Lys Asp Gln Leu Cys Tyr Leu Leu Ser Val Asn Ser Lys Gly
 50 55 60
 Glu Leu Leu Lys Ser Pro Ser Gly Asp Pro Ile Val Gln Thr Phe Pro
 65 70 75 80
 Ile His Pro His His
 85
 <210>1253
 <211>75
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>1253
 Met Glu Glu Val Pro Phe Glu Asn Ala Met Gln Arg Leu Glu Glu Ile
 1 5 10 15
 Val Asp Leu Met Asn Gln Pro Thr Thr Ser Leu Asp Ala Ser Leu Ala

20 25 30
 Leu Tyr Glu Glu Ala Asp Ala Leu Met Arg Ile Cys Glu Ser Arg Ile
 35 40 45
 Arg Gln Val Glu Gln Arg Val Arg Glu Leu Ala Glu Lys Arg His Glu
 50 55 60
 Ser Ser Leu Phe Glu Glu Gln Ala Val Val Arg
 65 70 75

<210>1254

<211>126

<212>PRT

<213>Chlamydia pneumoniae

<400>1254

Met Tyr Ile Ser Ser Ser Phe Ser Ser Ser Ala Lys Val Ser Ala Ile
 1 5 10 15
 Cys Leu Ala Ser Ile Cys Ser Lys Val Ser Ser Arg Phe Leu Ser Asn
 20 25 30
 Asn Ile Asn Pro Lys Thr Asn Arg Thr Thr Pro Arg Glu Ile Val Leu
 35 40 45
 Ile Pro Asn Pro Gln Thr Met Ser Ala Leu Asn Pro Glu Ile Thr Pro
 50 55 60
 Leu Ser Thr Ile Ala Pro Gln Thr Thr Arg Arg Met Pro Thr Thr Asn
 65 70 75 80
 Lys Val Ile Pro Arg Ala Arg Asp Leu Leu Ser Leu Gly Ile Thr Asn
 85 90 95
 Phe Val Ser Ser Gly Gly Val Gly Asp Thr Cys Arg Ile Ala Gly Ala
 100 105 110
 Ala Val Met Ile Glu Tyr Gln Asn His Lys Arg Asn Ile Asp
 115 120 125

<210>1255

<211>81

<212>PRT

<213>Chlamydia pneumoniae

<400>1255

Met Glu Ser Lys Lys Val Ser Lys Leu Ala Ser Asn Ser Thr Phe Phe
 1 5 10 15
 Leu Ala Ser Val Ser Cys Leu Gly Ser Thr Val Pro Pro Tyr Arg Ala
 20 25 30
 Leu Arg Ser Leu Thr Arg Val Ser Thr Ser Ser Cys Phe Phe Arg Lys
 35 40 45
 Asn Phe Val Leu Ala Ser Ser Arg Arg Ser Thr Lys Ser Asp Lys Ser
 50 55 60
 Phe Leu Phe Ala Ser Val Asp Ser Phe Glu Leu Ser Ser Arg Ser Phe
 65 70 75 80
 Ser

<210>1256

<211>80

<212>PRT

<213>Chlamydia pneumoniae

<400>1256

Leu Leu Gly Met Cys Thr Leu Leu Leu Ile Pro Lys Gln Leu Arg Leu
 1 5 10 15
 Leu Ile Leu Thr Lys Cys Leu Ser Ile Thr Leu Ser His Thr Leu Ile
 20 25 30
 His Thr Arg Leu Gln Gly Ser Lys Cys Leu Phe Lys Gly Arg Leu Arg
 35 40 45
 His Thr Ile Asn Met Pro Ile Lys Ser His Gly Tyr Leu Pro Tyr Val
 50 55 60
 Thr Ser Arg Ser His Lys Ala Ile His Asn Leu Thr Ser Arg Phe Leu
 65 70 75 80

<210>1257

<211>87

<212>PRT

<213>Chlamydia pneumoniae

<210>1258

<212>PRT

<400>1258

<210>1259

<212>PRT

<400>1259

<210>1260

<212>PRT

<400>1260

<400>1260

Leu	Pro	Pro	Ala	Leu	Gln	Val	Leu	Tyr	Met	Lys	Ser	Leu	Asp	Asn	Ala
1				5					10					15	
Asn	Leu	Glu	Ile	Leu	His	Lys	Ile	Phe	Gln	Val	Gln	Val	Glu	Ala	Asn
			20					25					30		
Glu	Leu	Pro	Leu	Gln	Met	Leu	His	Glu	Thr	Thr	Pro	Lys	Ala	Leu	Leu
		35					40					45			
Gln	Gly	His	Ala	Ala	Phe	Ser	Asp	Gln	Asn	Glu	Leu	Leu	Glu	Ile	Ser
	50					55					60				
Tyr	Thr	Tyr	His	Lys	Leu	Thr	Ser	Tyr	Lys	Glu	Ala				
65					70					75					

<210>1261

<211>76

<212>PRT

<213>Chlamydia pneumoniae

<400>1261

```
Met Cys Asn Arg Cys Lys Asp Ser Ser Thr Ser Leu Val Phe Ser Thr
 1          5          10          15
Cys Leu Gly Thr His Lys Thr Glu Thr Pro Ser Phe Ile Asn Phe Cys
          20          25          30
Thr Thr Gly Ser His Phe Pro Ala Ser Leu Leu Cys Ile Glu Pro Arg
          35          40          45
Ile Thr Asn Phe Glu Ser Val Gly Asn Leu Lys Arg Ser Leu Gln Val
          50          55          60
Ser Leu Ser Lys Cys Ser Ala Val Cys Ala Ala Thr
 65          70          75
```

<210>1262

<211>80

<212>PRT

<213>Chlamydia pneumoniae

<400>1262

```
Met Leu Asn His Gln Gln His Lys Val Val Ser Ile Ser Gln Phe His
 1          5          10          15
Gln Gln Arg Gln Leu Val His Lys Lys Asn Trp Arg Arg Gly Ser Thr
          20          25          30
Thr His Lys Glu Cys Ala Thr Asp Ala Lys Ile Leu Gln His Pro Trp
          35          40          45
Ser Phe Gln Arg Val Leu Ala Pro Ile Lys Leu Arg Pro Pro Leu Leu
          50          55          60
Leu Ile Ser Ala Leu Gln Glu Ala Ile Phe Leu His His Phe Tyr Ala
 65          70          75          80
```

<210>1263

<211>112

<212>PRT

<213>Chlamydia pneumoniae

<400>1263

```
Met Ile Arg Leu Trp Ser Cys Ser Ser Ile Lys Ile Glu Thr Val Pro
 1          5          10          15
Tyr Ser Lys Glu Ile Ala Tyr Cys Arg Trp Tyr Ser Asn Thr Thr Leu
          20          25          30
Ser Tyr Trp Ile Leu Ile Arg Glu Lys Cys Arg Pro Thr Lys Lys Ser
          35          40          45
Ala Ser Ser Arg Phe Leu Thr Lys Asn Asn Asn Ile Val His His Met
          50          55          60
Ser Ser Gln Lys Leu Phe Ala Phe Gln Ala Lys Ile Phe Val Ala Phe
 65          70          75          80
Phe Phe Gln Lys Asn Ile Phe Tyr Gln Phe Phe Phe Arg Met Thr
          85          90          95
Cys Lys Val Lys Arg Ser Ile Phe Gln Glu Glu Phe Cys Arg Pro Ile
          100          105          110
```

<210>1264

<211>148

<212>PRT

<213>Chlamydia pneumoniae

<400>1264

```
Ser Gly Arg Ile Ile Ser Val Met Leu Ser Ala Pro Pro Cys Glu Leu
 1          5          10          15
His Ser Asp Leu Ile Asp Pro Asp Leu Phe Glu Phe Asn His Arg Leu
          20          25          30
Asn Ile Cys Ile Ser Ala Glu Val Arg Gly Arg Val Thr His Thr
          35          40          45
Phe Arg Gly Asp Ser Cys Asn Met Ser Phe Asn Cys Ser Val Arg Gly
          50          55          60
Asn Val Ile Thr Ile Pro Arg Ile Ile Arg Ile Glu Ile Arg Ser Leu
 65          70          75          80
```

Thr Ser Ser Phe Ser Ile Ile Thr Lys Cys Lys Arg Ile Ser Ser Arg
 85 90 95
 Leu Arg Ile Thr Asn Ile Ile Ala Tyr Trp Ser Leu Arg Tyr Val Cys
 100 105 110
 Leu Arg Ile Asp Ile Lys Thr Val Arg Glu Cys Ser Ser Ile Lys Leu
 115 120 125
 Arg Thr Phe Arg Arg His Ile Thr Leu His Asn Lys Phe Thr Trp Arg
 130 135 140
 Ser Arg Gly Ile
 145

<210>1265

<211>130

<212>PRT

<213>Chlamydia pneumoniae

<400>1265

Ser Phe Phe Ser Phe Arg Lys Val Pro Asn Phe Ser Asn Gln Pro Met
 1 5 10 15
 Cys Phe Leu Ile Arg Ser Cys Trp Ser Ala Ser Ile Asn Ala Trp Arg
 20 25 30
 Gly Asp Arg Phe Cys Asp Ser Ser Leu Ser Asn His Asp His Met Val
 35 40 45
 Cys Asn Arg Asn Met Pro Ser Asn Ser Gly Leu Pro Ser Asn Asp Asp
 50 55 60
 Met Phe Thr Asn Phe Cys Arg Thr Cys Asn Ala Cys Leu Gly Asn Asn
 65 70 75 80
 Asn Thr Met Leu Ser Asn Phe Tyr Val Met Ser Tyr Leu Tyr Leu Val
 85 90 95
 Ile Tyr Phe Ser Ser Phe Met Asp His Gly Val Leu Glu Ser Thr Thr
 100 105 110
 Ile Tyr Arg Ser Val Gly Ser Asp Phe Tyr Ile Ile Thr Tyr Asn His
 115 120 125
 Ile Ala
 130

<210>1266

<211>78

<212>PRT

<213>Chlamydia pneumoniae

<400>1266

Glu Ala Val Phe Val Ser Gly Lys Lys Asp Gly Val Arg Gly Met Ile
 1 5 10 15
 Phe Val Pro Leu Ser Ile Leu Val Leu Ile Phe Leu Pro Leu Pro Gln
 20 25 30
 Ile Leu Leu Asp Phe Gly Leu Cys Ile Ser Phe Ala Leu Ser Leu Leu
 35 40 45
 Thr Val Cys Trp Val Phe Thr Leu Asn Ser Ser Asn Ser Ala Lys Phe
 50 55 60
 Phe Leu His Phe Ser Tyr Ile Phe Ala Tyr Cys Gly Trp Asp
 65 70 75

<210>1267

<211>74

<212>PRT

<213>Chlamydia pneumoniae

<400>1267

Leu Cys Thr Asp Ser Thr Ser Ile Ser Cys Cys Ser Ile Ile Ile Glu
 1 5 10 15
 Gly Cys Asn Ser Trp Val Val Phe Tyr Arg Thr Thr Asn Ala Ile Asp
 20 25 30
 Ser Pro Ser Arg Gly Met Val Ser Arg Asp Val Arg Phe His Gly Lys
 35 40 45
 Ile Ile Val Glu Asp His Arg Thr Gly Ile Leu Cys Lys Asn Ala Leu
 50 55 60
 Leu Met Tyr Ser Tyr Cys Thr Thr Gln Thr
 65 70

<210>1268

<211>90
<212>PRT
<213>Chlamydia pneumoniae
<400>1268

Met	Gly	Ala	Glu	Ile	Glu	Ile	Ser	Gly	Val	Leu	Asp	Ser	Glu	Leu	Ser
1				5					10					15	
Leu	Val	Leu	Ala	Pro	Cys	Leu	Cys	Ala	His	Pro	Thr	Lys	Ala	Phe	Ile
			20					25					30		
Asn	Gly	Glu	Ser	Ser	Arg	Gly	Leu	Pro	Phe	Leu	Arg	Gly	Thr	Ser	Cys
		35					40					45			
Gly	Glu	Pro	Val	Leu	Ser	Val	Ser	Ser	Ile	Ser	Glu	Gly	Asp	Pro	Thr
	50					55					60				
Asp	Ile	Glu	Ser	Ser	Ser	Glu	Glu	Val	His	Ser	Ser	Pro	Arg	His	Val
65					70					75					80
Gln	Gln	Arg	Pro	Thr	Ala	Ser	Ala	Ala	Ala						
				85					90						

<210>1269
<211>184
<212>PRT
<213>Chlamydia pneumoniae
<400>1269

Phe	Phe	Val	Phe	Thr	His	Val	Trp	Tyr	Leu	Ile	Ser	Arg	Gly	Tyr	Phe
1				5					10					15	
Tyr	Ser	Leu	Phe	Ser	Leu	Gly	Val	Gly	Ala	Leu	Ala	Thr	Leu	Thr	Leu
			20					25					30		
Ala	Thr	Arg	Ile	Gly	Arg	Ser	Pro	Ile	Leu	Tyr	Pro	Phe	Ala	Asn	Ser
		35					40					45			
Ser	Lys	Ile	Val	Pro	Ser	Gly	Thr	Ser	Glu	Val	Ser	Ser	Val	Cys	Thr
	50					55					60				
Ala	Ser	Cys	Arg	Lys	Gly	Leu	Asn	Phe	Trp	Pro	Ile	Glu	Glu	Tyr	Ser
65					70					75					80
Ile	Ile	Pro	Phe	Ser	Ser	Lys	Ile	Cys	Leu	Asn	Trp	Leu	Arg	Ile	Met
				85					90					95	
Leu	Asn	Pro	Arg	Ala	Gln	Phe	Phe	Thr	Ser	Ser	Asp	Ile	Cys	Val	Ala
			100					105					110		
Asn	Pro	Arg	Ala	Phe	Ser	Met	Leu	Ser	Met	Gly	Leu	Arg	Lys	Ser	Ile
		115					120					125			
Lys	Val	Phe	Ser	Lys	Ala	Tyr	Cys	Ile	Ser	Ser	Trp	Arg	Ser	Phe	Cys
	130					135					140				
Lys	Arg	Phe	Leu	Glu	Phe	Ser	Asp	Ser	Ala	Arg	Ala	Met	Arg	Tyr	Leu
145					150					155					160
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			20					25					30		
Met	Pro	Ser	Cys	Phe	Leu	Asn	Ser	Ser	Ile	Ile	His	Leu	Ile	Met	Thr
		35					40					45			
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	50					55					60				
Thr	Ser	Lys	Thr	Pro	Ser	Pro	Ile	Ser	Arg	Met	Glu	Ile	Ser	Lys	Val
65					70					75					80
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<212>PRT

<213>Chlamydia pneumoniae

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 20 25 30
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 35 40 45
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 65 70 75

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<211>122

<212>PRT

<213>Chlamydia pneumoniae

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 20 25 30
 Pro Arg Leu Arg Ala Ser Lys Pro Ile Ala Pro Ile Pro Ala Lys Arg
 35 40 45
 Ser Lys Lys Ala Ala Pro Ser Ile Ser Ser Leu Gln Ile Leu Lys Asn
 50 55 60
 Ala Ser Phe Thr Lys Pro Glu Val Gly Arg Ile Cys Gly Leu Glu Asn
 65 70 75 80
 Val Phe Lys Asp Phe Pro Leu Tyr Leu Pro Ala Lys Ile Leu Thr Ser
 85 90 95
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<211>112

<212>PRT

<213>Chlamydia pneumoniae

<400>1273

Phe Thr Phe Phe Phe Leu Ala Gln Leu Glu Lys Gln Leu Pro His Leu
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 20 25 30
 Ile His Ser Ser Leu Trp Ser Arg Val Phe Ser Ser Ser Phe Leu Arg
 35 40 45
 Phe Ala Lys Phe Thr Ser Ala Phe Ser Ser Ser Leu Glu Ala Ala Ser
 50 55 60
 Thr Thr Ser Phe Cys Leu Thr Phe Ser Ser Ser Ser Glu Ser Cys
 65 70 75 80
 Thr Ala Thr Thr Leu Met Tyr Asp Phe Ile Cys Lys Thr Ala Ser Leu
 85 90 95
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 100 105 110

<210>1274

<211>82

<212>PRT

<213>Chlamydia pneumoniae

<400>1274

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 20 25 30

Ser Leu Lys Ile Ser Glu Arg Ser Glu Arg Glu Arg Val Trp Arg Ser
35 40 45
Tyr Val Tyr Ser Val Asp Val Gly Pro Gly Val Phe Leu Met Met Thr
50 55 60
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65 70 75 80
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<211>134

<212>PRT

<213>Chlamydia pneumoniae

<400>1275

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Ser Phe Gln Tyr Thr Ala Leu Ala Ile Ser Ser Leu Pro Met Ala Ser
35 40 45
Pro Thr Ile Thr Glu Pro Ser Ser Glu Ala Ser Gln Ala Gln Glu Cys
50 55 60
Arg Ser Ser Gly Lys Leu Gly Arg Thr Thr Ile Pro Val Ser Ser His
65 70 75 80
Phe Thr Ala Lys Phe Val Ser Val Ser Ser Leu Tyr Arg His Pro Thr
85 90 95
Ile Val Phe Pro Ser Leu Glu Thr Pro Ser Ala Lys Asp Cys Ile Pro
100 105 110
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<211>84

<212>PRT

<213>Chlamydia pneumoniae

<400>1276

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20 25 30
Asn Thr Asn Tyr Ser Ser Ser Cys Cys Pro Ser Gly Glu Thr Ser Cys
35 40 45
Tyr His Ser Cys Gln Thr Ser Asp His Arg Gly Tyr Lys Ser Gly Cys
50 55 60
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65 70 75 80
Gln Ser His Phe

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<212>PRT

<213>Chlamydia pneumoniae

<400>1277

Met Arg Glu Phe Ser Cys Ile Lys Asp Arg Lys Asn Arg Cys Phe Arg
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Thr Thr Arg Pro Lys Glu Val Lys Lys Arg Thr Ser Leu Glu Tyr Ile
35 40 45
Gln Ser Ile Trp Asp Leu Gly Pro Leu Asp Val Tyr Ser Cys Phe Ser
50 55 60
Lys Glu Thr Ser Ser Glu Leu Tyr Ala Lys Arg Phe
65 70 75

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<213>Chlamydia pneumoniae

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 20 25 30
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 35 40 45
 Pro Leu Pro Gly Ser Glu Lys Thr Pro Ile Arg Cys Pro Phe Pro Lys
 50 55 60
 Val Arg Asn Ala Ser Ile Ala Leu Ile Pro Val Gly Lys Ile
 65 70 75

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<211>86

<212>PRT

<213>Chlamydia pneumoniae

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 Lys Leu Pro Ser Ser Lys Thr Ser Gln Pro Val Val Gly Ala Ser Cys
 20 25 30
 Phe Lys Glu Thr Lys Val Leu Phe Ala Phe Pro Asp Thr Ile Cys Pro
 35 40 45
 Asn Ala Ser Glu Ile Ala Asn Lys Thr Arg Ser Lys Ala Pro Ser Lys
 50 55 60
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<212>PRT

<213>Chlamydia pneumoniae

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 20 25 30
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 35 40 45
 Ser Pro Ala Ile Ile Arg Ser Pro Ser Ser Ser Leu Glu Ala Ser Ser
 50 55 60
 Thr Thr Ile Thr Asn Phe Pro Ala Leu Lys Ser Ser Ile Ala Arg Ser
 65 70 75 80
 Lys Glu Thr Lys Phe Ala Glu Pro Thr Ser Ser Arg Val Ser Ile Ile
 85 90 95
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<211>85

<212>PRT

<213>Chlamydia pneumoniae

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 20 25 30
 Leu Asn Phe Arg Leu Lys Leu Ile Phe Ser Leu Ile Leu Tyr Gly Leu
 35 40 45
 Ala Asn Val Ala Gln Leu Val Arg Ala Ser Asp Cys Gly Ser Glu Gly

50 55 60
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 35 40 45
 Arg Leu Asp Val Ile Ala Leu Val Gly Phe Tyr Pro Thr Asn Lys Leu
 50 55 60
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 35 40 45
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 50 55 60
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 65 70 75
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 35 40 45
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 50 55 60
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 65 70 75 80
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 35 40 45
 Tyr Lys Pro Trp Lys Lys Gly Lys Ser His Lys Asn Asn Cys Ile Leu
 50 55 60
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<211>74

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<213>Chlamydia pneumoniae

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 20 25 30
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 35 40 45
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 50 55 60
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 Phe Gln Ile Leu Ile Leu Ser Trp Leu Leu Ile Thr Leu Ala Thr Phe
 35 40 45
 Ser Leu Gln Ile Phe Cys Lys Gly Asn Lys Val Leu Leu Ala Thr Gln
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 35 40 45
 Leu Glu Ala Ala Ser Val Ser Cys Asp Arg Glu Val Lys Thr Phe Pro
 50 55 60
 Ile Pro Leu Lys Lys Val Phe Ala Val Ala Ser Leu Asn Leu Pro Glu
 65 70 75 80
 Ile Leu Trp Thr Asn Pro Lys Met Leu Ser Pro Glu Ile Ser Pro Thr
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 35 40 45
 Pro Leu Lys Ile Ala Thr Met Pro Ile Pro Ile Glu Thr Asn Gly Ala
 50 55 60
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 65 70 75 80
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 35 40 45
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 35 40 45
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 50 55 60
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Figure 1.

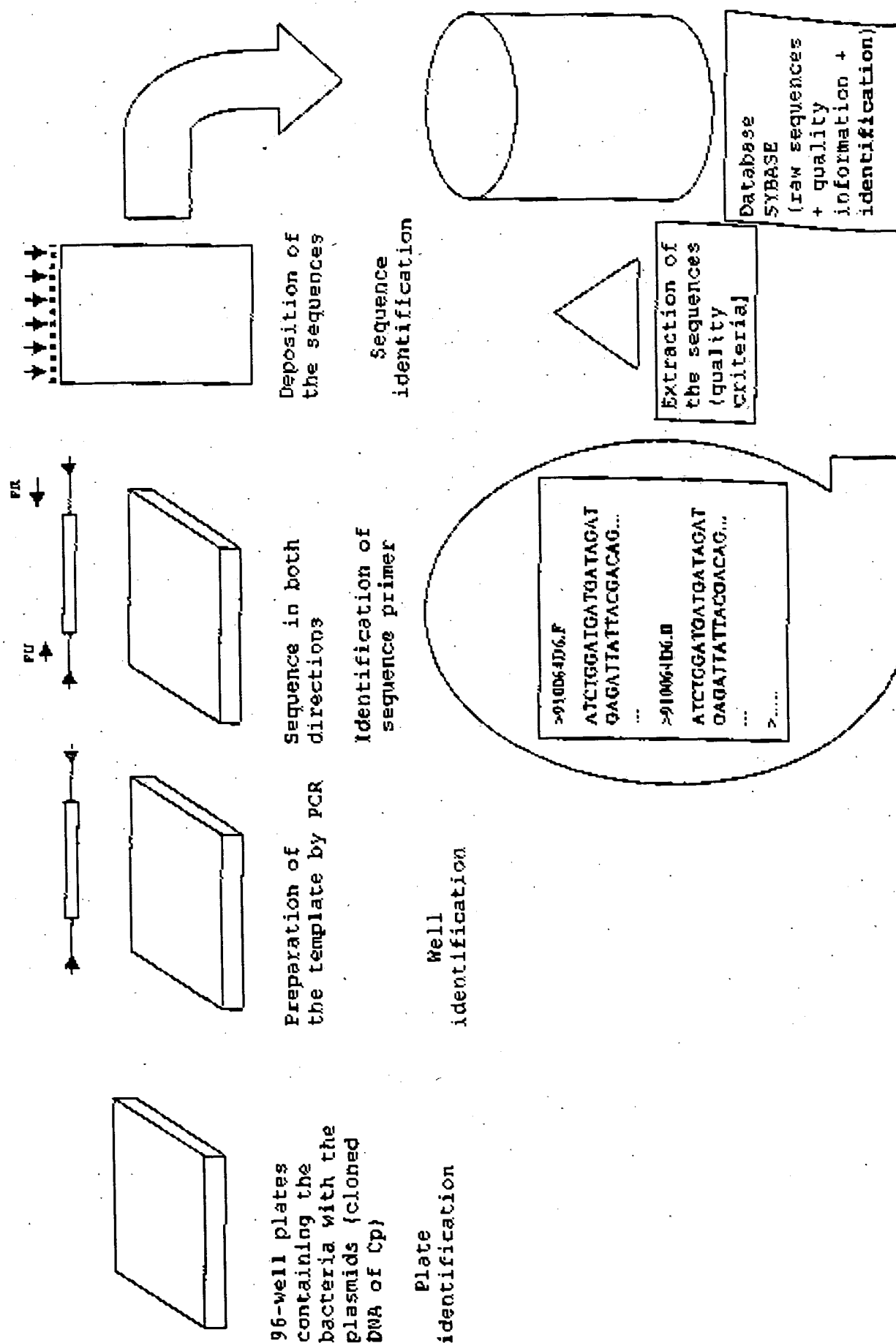
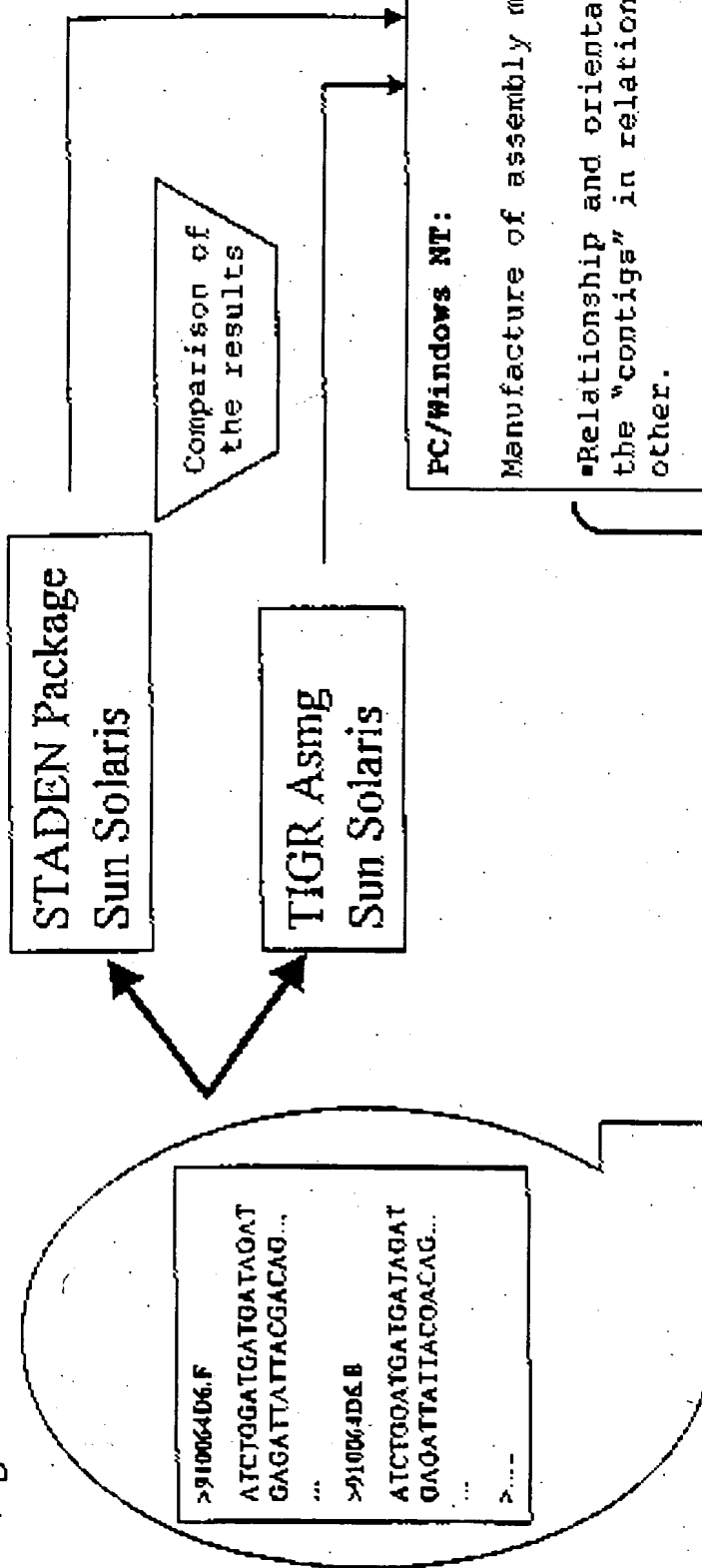


Figure 2.



```
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...
>910064D6.B
ATCTGGATGATGATGAT
GAGATTATTACGACAG...
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PC/Windows NT:

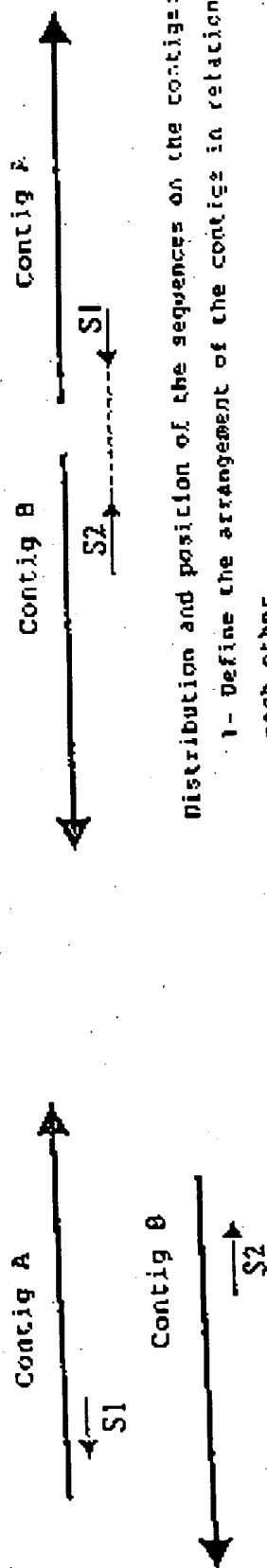
Manufacture of assembly map:

- Relationship and orientation of the "contigs" in relation to each other.
- Determination of the clones useful for obtaining the missing sequences between the "contigs"
- Choice of the PCR and sequencing primers for obtaining the missing sequences between the "contigs"
- Determination of the ends of the "contigs" having no relationship with other "contigs" (orphan ends)
- Choice of the PCR primers which make it possible to study the relationship between the orphan ends

Figure 3a

Figure 3b

FIGURE 3A



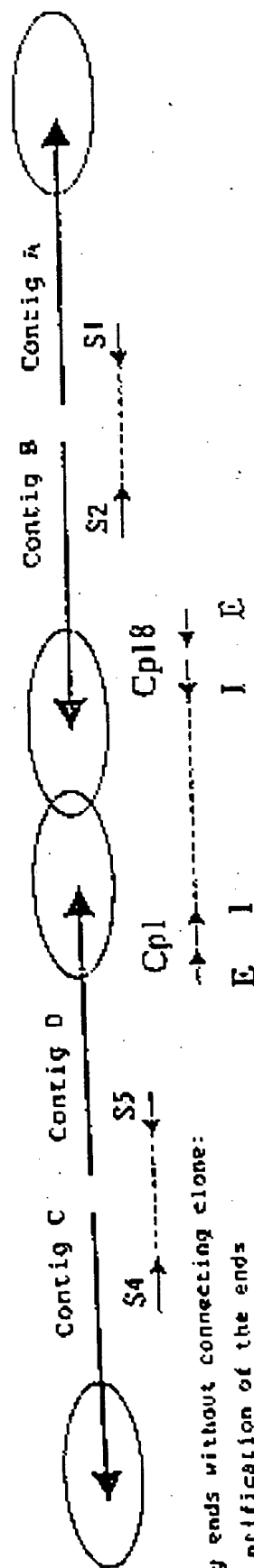
Distribution and position of the sequences on the contigs:

- 1- Define the arrangement of the contigs in relation to each other
- 2- Define the PCR primers which make it possible to fill the sequence

Statistical determination of the sequences:

- 1- Belonging to the same clone
- 2- Situated on two different contigs

FIGURE 3B



Contigs ends without connecting clone:

- 1- Identification of the ends
- 2- Determination of outer and inner PCR primers for studying the relationships between the contigs

E: outer primers
I: inner primers

SEQUENCE LISTING

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<120>Chlamydia pneumoniae genomic sequence and polypeptides, fragments thereof and uses thereof, in particular for the diagnosis, prevention and treatment of infection

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<160>6849

<210>1

<211>1230025

<212>DNA

<213>Chlamydia pneumoniae

<400>1

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<210>2

<211>251

<212>PRT

<213>Chlamydia pneumoniae

<400>2

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Lys	Glu	Tyr	Val	Gln	Thr	Leu	Ala	Ser	Xaa	Leu	Gln	Gly	Glu	Pro	Leu
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His	Glu	Met	Ile	Asn	Thr	Thr	Gly	Ala	Phe	Leu	Trp	Leu	Gly	Ala	Gln
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Pro	Met	Leu	Lys	Glu	Val	Gly	Val	Glu	Phe	Val	Leu	Val	Gly	His	Ser
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Val	Lys	Ser	Val	Ala	Gln	Ala	Gly	Leu	Val	Pro	Val	Leu	Cys	Val	Gly
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Glu	Ser	Leu	Glu	Val	Arg	Glu	Glu	Gly	Lys	Ala	His	Gln	Val	Ile	Lys
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Lys	Gln	Leu	Leu	Leu	Gly	Leu	Glu	Gln	Met	Asp	Asn	Gly	Ser	Glu	Phe
		165					170						175		
Leu	Ile	Ala	Tyr	Glu	Pro	Val	Trp	Ala	Ile	Gly	Thr	Gly	Lys	Val	Ala
	180					185						190			
Glu	Ala	Ser	Asp	Val	Gln	Asp	Ile	His	Met	Phe	Cys	Arg	Glu	Val	Val
	195					200						205			

Ala Glu Arg Phe Ser Glu Ala Thr Ala Glu Glu Ile Ser Ile Leu Tyr
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 Gly Gly Ser Val Lys Val Asp Asn Ala Gln Arg Phe Gly Gln Cys Ser
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 Asp Val Asp Gly Leu Leu Val Gly Gly Xaa Leu
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<211>119

<212>PRT

<213>Chlamydia pneumoniae

<400>3

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 20 25 30
 Leu Val Gln Glu Ser Lys Ser Met Gly Leu Gly Ser Ser Phe Gly Val
 35 40 45
 Asp Ser Gly Asp Ser Val Phe Gly Val Ser Thr Pro Asp Ile Leu Lys
 50 55 60
 Lys Val Thr Ser Xaa Cys Ala Val Ala Phe Cys Ile Gly Cys Leu Leu
 65 70 75 80
 Leu Ser Phe Ser Thr Asn Leu Leu Gly Lys Lys Leu Asp Ala Lys Glu
 85 90 95
 Phe Leu Leu Pro Ala Ala Gln Gln Ser Asp Thr Gln Ala Ser Ser Glu
 100 105 110
 Ser Val Glu Ala Asp Glu Ser
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<210>4

<211>204

<212>PRT

<213>Chlamydia pneumoniae

<400>4

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 20 25 30
 Lys Lys Ser Ser Pro Ile Ala Glu Ile Thr Asp Glu Ile Arg Asn Leu
 35 40 45
 Val Ser Asp Met Cys Asp Thr Met Glu Ala His Arg Gly Val Gly Leu
 50 55 60
 Ala Ala Pro Gln Val Gly Lys Asn Val Ser Leu Phe Val Met Cys Val
 65 70 75 80
 Asp Arg Glu Thr Glu Asp Gly Glu Leu Ile Phe Ser Glu Ser Pro Arg
 85 90 95
 Val Phe Ile Asn Pro Val Leu Ser Asp Pro Ser Glu Thr Pro Ile Ile
 100 105 110
 Gly Lys Glu Gly Cys Leu Ser Ile Pro Gly Leu Arg Gly Glu Val Phe
 115 120 125
 Arg Pro Gln Lys Ile Thr Val Thr Ala Met Asp Leu Asn Gly Lys Ile
 130 135 140
 Phe Thr Glu His Leu Glu Gly Phe Thr Ala Arg Ile Ile Met His Glu
 145 150 155 160
 Thr Asp His Leu Asn Gly Val Leu Tyr Ile Asp Leu Met Glu Glu Pro
 165 170 175
 Lys Asp Pro Lys Lys Phe Lys Ala Ser Leu Glu Lys Ile Lys Arg Arg
 180 185 190
 Tyr Asp Thr His Leu Ser Lys Glu Leu Val Ser
 195 200

<210>5

<211>301

<212>PRT

<213>Chlamydia pneumoniae

<400>5

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 35 40 45
 Thr Leu Tyr Pro Ser Gly Lys Leu Val Ile Gln Gly Lys Gly Ser Glu
 50 55 60
 Glu Phe Ile Glu Phe Phe Leu Glu Pro Glu Ile Leu His Thr Phe Thr
 65 70 75 80
 His Ala Arg Val Glu Gln Asp Leu Arg Pro Arg Leu Gly Val Asp Glu
 85 90 95
 Ser Gly Lys Gly Asp Phe Phe Gly Pro Leu Cys Ile Ala Ala Val Tyr
 100 105 110
 Ala Ser Asn Ala Glu Ile Leu Lys Lys Leu Tyr Glu Asn Lys Val Glu
 115 120 125
 Asp Ser Lys Asn Leu Lys Asp Thr Lys Ile Ala Ser Leu Ala Arg Ile
 130 135 140
 Ile Arg Ser Leu Cys Val Cys Asp Val Ile Ile Leu Tyr Pro Glu Lys
 145 150 155 160
 Tyr Asn Glu Leu Tyr Gly Lys Phe Gln Asn Leu Asn Thr Leu Leu Ala
 165 170 175
 Trp Ala His Ala Thr Val Ile Asn Asn Leu Ala Pro Lys Pro Ala Gly
 180 185 190
 Asp Val Phe Ala Ile Ser Asp Gln Phe Ala Ala Ser Glu Tyr Thr Leu
 195 200 205
 Leu Lys Ala Leu Gln Lys Lys Glu Thr Asp Ile Thr Leu Ile Gln Lys
 210 215 220
 Pro Arg Ala Glu Gln Asp Val Val Val Ala Ala Ala Ser Ile Leu Ala
 225 230 235 240
 Arg Asp Ala Phe Val Gln Ser Ile Gln Lys Leu Glu Glu Gln Tyr Gln
 245 250 255
 Val Gln Leu Pro Lys Gly Ala Gly Phe Asn Val Lys Ala Ala Gly Arg
 260 265 270
 Glu Ile Ala Lys Gln Arg Gly Lys Glu Leu Leu Ala Lys Ile Ser Lys
 275 280 285
 Thr His Phe Lys Thr Phe Asp Glu Ile Cys Ser Gly Lys
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<210>6

<211>143

<212>PRT

<213>Chlamydia pneumoniae

<400>6

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 20 25 30
 Ala Thr Ser Ile Arg Tyr Ser Cys Leu Glu Ala Ile Glu Gln Gly Cys
 35 40 45
 Leu Gly Lys Leu Ile Ser Pro Val Tyr Ala Gln Gly Phe Ile Lys Lys
 50 55 60
 Tyr Ala Thr Tyr Leu Gly Leu Asp Gly Asp Ser Ile Leu Gln Glu His
 65 70 75 80
 Pro Tyr Val Met Lys Ile Phe Lys Glu Phe Ser Asp His Asn Met Glu
 85 90 95
 Met Leu Leu Asp Leu Glu Ser Met Gly Gly Arg Asn Ser Pro Glu Arg
 100 105 110
 Ala Ile His Ser Trp Ser Asn Leu Trp Trp Ala Gly Leu Ile Ile Ile
 115 120 125
 Gly Gly Ile Met Val Trp Trp Leu Gly Ser Leu Phe Ser Ile Phe
 130 135 140

<210>7

<211>460

<212>PRT

<213>Chlamydia pneumoniae

<400>7

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 20 25 30
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 35 40 45
 Pro Gly Thr Gly Gly Arg Glu Met Gly Ile Ser Leu Gly Ser Asp Asn
 50 55 60
 Val Leu Gly Met Val Glu Gln Ala Gly Ser Leu Leu Asn Asn Leu Leu
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 Asp Ser Ala Arg Met Gln Arg Leu Gly His Tyr Cys Tyr Arg Thr Gly
 85 90 95
 Thr Pro Trp Cys Arg Glu His Cys Pro Gly Phe Leu Gln Trp Ile Trp
 100 105 110
 Gly Gly Cys Cys Ala Cys Cys Leu Glu Thr Val Asp Asp Pro Asp Asn
 115 120 125
 Pro Ser Ala Gln Phe Leu Gln Gln Leu Ile Gln Gln Tyr Gly Pro Ile
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 Cys Val Gly Met Ser Phe Gln Gln Leu Pro His Cys Thr Gln Lys Ile
 145 150 155 160
 Glu Gln Gly Glu Pro Leu Gly Asp Gly Asp Lys Gln Glu Val Glu Asn
 165 170 175
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 Glu Gly Ala Leu Ser Phe Val Thr Ser Ser Asp Asn Pro Pro Thr Cys
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 245 250 255
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 260 265 270
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 Ser Gly Tyr Lys Gly Pro Leu Gly Gln Ala Ala Lys Gln Ile Val Asp
 305 310 315 320
 Leu Ile Lys Lys Ser Leu Lys Arg Leu Val Ala Ser Asp Leu Ala Thr
 325 330 335
 Phe Leu Gly Pro Gly Ile Gly Leu Ser Leu Glu Ser Gln Val Phe Glu
 340 345 350
 Val Leu Val Leu Leu Cys Leu Leu Ser Lys Gly Tyr Leu Pro Leu Asp
 355 360 365
 Pro Leu His Pro Glu Gln Thr Val Leu Asp Pro Arg Val Gln Gly Pro
 370 375 380
 Trp Gln Arg Ile Leu Arg Lys Val Leu Val Thr Thr Thr Ala Gly Glu
 385 390 395 400
 Asn Ile Trp Arg Gln Thr Gln Gly Glu Ala Pro Arg Gln Ala Pro Pro
 405 410 415
 Pro Pro Asp Pro Trp Asp Asp Asp Glu Ile Glu Arg Asp Gly Ile Val
 420 425 430
 Thr Gly Gly Gly Phe Gly Ile Pro Cys Gln Cys Leu Arg Cys Trp Arg
 435 440 445
 Lys Leu Pro Thr Glu Lys Arg Pro Asn Arg Trp Leu
 450 455 460

<210>8

<211>484

<212>PRT

<213>Chlamydia pneumoniae

<400>8

Lys	Gly	Thr	Thr	Met	Val	Cys	Pro	Asn	Asn	Ser	Trp	Phe	Arg	Met	Cys
1				5					10					15	
Gly	Asn	Phe	Asn	Cys	Glu	Trp	Val	Glu	Val	Thr	Thr	Thr	Glu	Glu	Thr
			20					25					30		
Thr	Arg	Gln	Ser	Ala	Ser	Asp	Ile	Ser	Glu	Glu	Ala	Gly	Ser	Ser	Gly
		35					40					45			
Gly	Ala	Ala	Pro	Ile	Thr	Thr	Gln	Pro	Thr	Lys	Ile	Thr	Lys	Val	Glu
50						55					60				
Lys	Arg	Val	Gln	Phe	Asn	Thr	Ala	Gln	Gly	Asp	Glu	Ser	Thr	Ile	His
65					70					75					80
Met	Ile	Gln	Glu	Ala	Gly	Glu	Leu	Val	Asp	Ser	Ile	Leu	Ser	His	Arg
				85					90					95	
Arg	Thr	Gln	Gly	Cys	Thr	Glu	Tyr	Cys	Tyr	Asp	Ser	Tyr	Ala	Thr	Gly
		100						105					110		
Cys	Gly	Gln	Arg	Cys	Gly	Ser	Phe	Gly	Arg	Leu	Ile	Cys	Gly	Thr	Tyr
		115					120					125			
Lys	Ala	Cys	Cys	Leu	Asp	Arg	Glu	Asp	Asn	Gln	Val	Ala	Gly	Leu	Val
130					135						140				
His	Glu	Cys	Glu	Gln	Thr	His	Gly	Pro	Ile	Ala	Val	Ala	Leu	Ala	Ala
145					150					155					160
Lys	Thr	Met	Gly	Leu	Asn	Leu	Met	Glu	Leu	Val	Glu	Lys	Asn	Thr	Ile
			165						170					175	
Leu	Ser	Glu	Glu	Gln	Lys	Asn	Glu	Phe	Arg	Gln	His	Cys	Ser	Glu	Ala
			180					185					190		
Lys	Thr	Gln	Leu	Tyr	Gly	Thr	Met	Gln	Ser	Leu	Ser	Gln	Asn	Phe	Phe
		195					200					205			
Leu	Glu	Gly	Val	Asn	Ser	Ile	Arg	Glu	Arg	Gly	Leu	Asp	Asp	Ser	Leu
210						215					220				
Val	Gln	Ala	Val	Leu	Ser	Phe	Ile	Ala	Thr	Arg	Ser	Trp	Glu	Lys	Thr
225					230					235					240
Ile	Glu	Ser	Glu	Glu	Ala	Ser	Gly	Thr	Ser	Ser	Ala	Ser	Asn	Ser	Thr
				245					250					255	
Arg	Ile	Pro	Ala	Cys	Tyr	Ile	Leu	Asn	Thr	Ser	Pro	Leu	Thr	Thr	Ser
			260					265					270		
Arg	Leu	Ser	Cys	Gly	Ser	Arg	Asp	Ala	Arg	Arg	Pro	Ser	Ser	Val	Gly
		275					280					285			
Ala	Glu	Pro	Gln	Tyr	Val	Ala	Lys	Lys	Tyr	Asn	Asp	Asn	Gly	Met	Ala
290						295					300				
Arg	Gln	Leu	Gly	Lys	Ile	Gln	Val	Thr	Asn	Leu	Lys	Thr	Gly	Asp	Phe
305					310						315				320
Ser	Ala	Leu	Gly	Pro	Phe	Gly	Leu	Leu	Ile	Val	Lys	Met	Leu	Asn	Ser
				325					330					335	
Phe	Leu	Leu	Ser	Ala	Ser	Gln	Ser	Thr	Ser	Ser	Ile	Leu	Lys	His	Thr
			340					345					350		
Gly	Gly	Glu	Ile	Cys	Tyr	Thr	Cys	Pro	Asn	Phe	Arg	Asp	Ile	Val	Val
		355					360					365			
Leu	Leu	Met	Leu	Ala	Ile	Gly	Tyr	Cys	Pro	Ala	Asn	Thr	Asp	Glu	Thr
370						375					380				
Ser	Val	Val	Asp	Ile	His	Met	Ile	Asp	Asp	Pro	Ile	Met	Thr	Ile	Phe
385					390					395					400
Tyr	Arg	Leu	Gln	Tyr	Ser	Tyr	Arg	Thr	Gly	Lys	Thr	Ser	Ala	Ser	Phe
				405					410					415	
Leu	Lys	Lys	Lys	Pro	Ser	Leu	Val	Arg	Gln	Glu	Ser	Leu	Asp	Cys	Pro
			420					425					430		
Thr	Pro	Ala	Glu	Ser	Val	Pro	Leu	Met	Ser	Ser	Leu	Glu	Glu	Glu	Asp
		435					440					445			
Glu	Asn	Glu	Asp	Asp	Asp	Glu	Asp	Gly	Asn	Leu	Ala	Tyr	Gln	Gln	Arg
		450				455					460				
Ile	Leu	Glu	Cys	Ser	Gly	His	Leu	Gln	Thr	Leu	Phe	Leu	Gly	Ile	Lys
465					470					475					480
Ile	Asn	Lys	Glu												

<210>9

<211>304

<212>PRT

<213>Chlamydia pneumoniae

<400>9

Lys Lys Asp Tyr Ile Leu His Ala Asn Trp Cys Cys Trp Lys Gln Met
 1 5 10 15
 Leu Lys Ile Gln Lys Lys Arg Met Cys Val Ser Val Val Ile Thr Val
 20 25 30
 Gly Ala Ile Val Gly Phe Phe Asn Ser Ala Asp Ala Ala Pro Lys Lys
 35 40 45
 Lys Lys Ile Pro Ile Gln Ile Leu Tyr Ser Phe Thr Lys Val Ser Ser
 50 55 60
 Tyr Leu Lys Asn Glu Asp Ala Ser Thr Ile Phe Cys Val Asp Val Asp
 65 70 75 80
 Arg Gly Leu Leu Gln His Arg Tyr Leu Gly Ser Pro Gly Trp Gln Glu
 85 90 95
 Thr Arg Arg Arg Gln Leu Phe Lys Ser Leu Glu Asn Gln Ser Tyr Gly
 100 105 110
 Asn Glu Arg Leu Gly Gln Gln Thr Leu Ala Ile Asp Ile Phe Arg Asn
 115 120 125
 Lys Glu Cys Leu Glu Ser Glu Ile Pro Glu Gln Met Glu Ala Ile Leu
 130 135 140
 Ala Asn Ser Ser Ala Leu Val Leu Gly Ile Ser Ser Phe Gly Ile Thr
 145 150 155 160
 Gly Ile Pro Ala Thr Leu His Ser Leu Leu Arg Gln Asn Leu Ser Phe
 165 170 175
 Gln Lys Arg Ser Ile Ala Ser Glu Ser Phe Leu Leu Lys Ile Asp Ser
 180 185 190
 Ala Pro Ser Asp Ala Ser Val Phe Tyr Lys Gly Val Leu Phe Arg Gly
 195 200 205
 Glu Thr Ala Ile Val Asp Ala Leu Ser Gln Leu Phe Ala Gln Leu Asp
 210 215 220
 Leu Ser Pro Lys Lys Ile Ile Phe Leu Gly Glu Asp Pro Glu Val Val
 225 230 235 240
 Gln Ala Val Gly Ser Ala Cys Ile Gly Trp Gly Met Asn Phe Leu Gly
 245 250 255
 Leu Val Tyr Tyr Pro Ala Gln Glu Ser Leu Phe Ser Tyr Val His Pro
 260 265 270
 Tyr Ser Thr Ala Thr Glu Leu Gln Glu Ala Gln Gly Leu Gln Val Ile
 275 280 285
 Ser Asp Glu Val Ala Gln Leu Thr Leu Asn Ala Leu Pro Lys Met Asn
 290 295 300

<210>10

<211>277

<212>PRT

<213>Chlamydia pneumoniae

<400>10

Arg Ile Phe Met Arg Arg Tyr Leu Phe Met Val Leu Ala Leu Cys Leu
 1 5 10 15
 Tyr Arg Ala Ala Pro Leu Glu Ala Val Val Ile Lys Ile Thr Asp Ala
 20 25 30
 Gln Ala Val Leu Lys Phe Ala Arg Glu Lys Thr Leu Val Cys Phe Asn
 35 40 45
 Ile Glu Asp Thr Val Val Phe Pro Lys Gln Met Val Gly Gln Ser Ala
 50 55 60
 Trp Leu Tyr Asn Arg Glu Leu Asp Leu Lys Thr Leu Ser Glu Glu
 65 70 75 80
 Gln Ala Arg Glu Gln Ala Phe Leu Glu Trp Met Gly Ile Ser Phe Leu
 85 90 95
 Val Asp Tyr Glu Leu Val Ser Ala Asn Leu Arg Asn Val Leu Thr Gly
 100 105 110
 Leu Ser Leu Lys Arg Ser Trp Val Leu Gly Ile Ser Gln Arg Pro Val
 115 120 125
 His Leu Ile Lys Asn Thr Leu Arg Ile Leu Arg Ser Phe Asn Ile Asp
 130 135 140

Phe Thr Ser Cys Pro Ala Ile Cys Glu Asp Gly Trp Leu Ser His Pro
 145 150 155 160
 Thr Lys Asp Thr Thr Phe Asp Gln Ala Met Ala Ile Glu Lys Asn Ile
 165 170 175
 Leu Phe Val Gly Ser Leu Lys Asn Gly Gln Pro Met Asp Ala Ala Leu
 180 185 190
 Glu Val Leu Leu Ser Gly Ile Ser Ser Pro Pro Ser Gln Ile Ile Tyr
 195 200 205
 Val Asp Gln Asp Ala Glu Arg Leu Arg Ser Ile Gly Ala Phe Cys Lys
 210 215 220
 Lys Ala Asn Ile Tyr Phe Ile Gly Met Leu Tyr Thr Pro Ala Lys Gln
 225 230 235 240
 Arg Val Glu Ser Tyr Asn Pro Lys Leu Thr Ala Ile Gln Trp Ser Gln
 245 250 255
 Ile Arg Lys Asn Leu Ser Asp Glu Tyr Tyr Glu Ser Leu Leu Ser Tyr
 260 265 270
 Val Lys Ser Lys Gly
 275

<210>11

<211>109

<212>PRT

<213>Chlamydia pneumoniae

<400>11

Lys Arg Leu Lys Asp Glu Ile Lys Tyr Thr Ser Leu Arg Arg Lys Ala
 1 5 10 15
 Met Leu Gly Lys Ile Ile Arg Gly Leu Ser Ser Leu Ile Val Ile Leu
 20 25 30
 Cys Ala Leu Asn Val Gly Leu Ile Gly Ile Thr His Asn Lys Leu Asn
 35 40 45
 Ile Ile Ala Lys Leu Cys Gly Gly Val Ser Thr Pro Ala Thr Gln Ile
 50 55 60
 Thr Tyr Ile Ile Ile Gly Ile Ala Gly Val Ile Cys Leu Leu Ser Phe
 65 70 75 80
 Cys Pro Phe Cys Ser Lys Lys Ser Arg His Ser His Gly Asp Ser Cys
 85 90 95
 Ser Ser Gly Gly Cys His Ser His His Ser Asp Lys Asn
 100 105

<210>12

<211>102

<212>PRT

<213>Chlamydia pneumoniae

<400>12

His Met Glu Gln Phe His Leu Asp Arg Glu Glu Ile Leu Leu Leu Ala
 1 5 10 15
 Lys Ala Ser Ala Leu Gln Leu Ser Glu Glu Leu Ile Gln Glu Tyr Gln
 20 25 30
 Thr Ser Leu Ser Ala Val Ile Thr Ser Met Lys Glu Ala Leu Ala Ile
 35 40 45
 Glu Ile Asp Asp Ala Asp Ser Cys Glu Ser Leu Phe Met His Val Val
 50 55 60
 Asn Val Glu Asp Leu Arg Glu Asp Ser Val Thr Ser Asp Phe Asn Arg
 65 70 75 80
 Glu Glu Phe Leu Arg Asn Val Pro Gln Ser Leu Gly Gly Leu Val Lys
 85 90 95
 Val Pro Ala Val Ile Lys
 100

<210>13

<211>494

<212>PRT

<213>Chlamydia pneumoniae

<400>13

Lys Ile Met Tyr Arg Tyr Ser Ala Leu Glu Leu Ala Lys Ala Val Thr
 1 5 10 15
 Leu Gly Glu Leu Thr Ala Thr Gly Val Thr Gln His Phe Phe His Arg

20 25 30
 Ile Glu Glu Ala Glu Gly Gln Val Gly Ala Phe Ile Ser Leu Cys Lys
 35 40 45
 Glu Gln Ala Leu Glu Gln Ala Glu Leu Ile Asp Lys Lys Arg Ser Arg
 50 55 60
 Gly Glu Pro Leu Gly Lys Leu Ala Gly Val Pro Val Gly Ile Lys Asp
 65 70 75 80
 Asn Ile His Val Thr Gly Leu Lys Thr Thr Cys Ala Ser Arg Val Leu
 85 90 95
 Glu Asn Tyr Gln Pro Pro Phe Asp Ala Thr Val Val Glu Arg Ile Lys
 100 105 110
 Lys Glu Asp Gly Ile Ile Leu Gly Lys Leu Asn Met Asp Glu Phe Ala
 115 120 125
 Met Gly Ser Thr Thr Leu Tyr Ser Ala Phe His Pro Thr His Asn Pro
 130 135 140
 Trp Asp Leu Ser Arg Val Pro Gly Gly Ser Ser Gly Gly Ser Ala Ala
 145 150 155 160
 Ala Val Ser Ala Arg Phe Cys Pro Val Ala Leu Gly Ser Asp Thr Gly
 165 170 175
 Gly Ser Ile Arg Gln Pro Ala Ala Phe Cys Gly Val Val Gly Phe Lys
 180 185 190
 Pro Ser Tyr Gly Ala Val Ser Arg Tyr Gly Leu Val Ala Phe Ala Ser
 195 200 205
 Ser Leu Asp Gln Ile Gly Pro Leu Ala Asn Thr Val Glu Asp Val Ala
 210 215 220
 Leu Met Met Asp Val Phe Ser Gly Arg Asp Pro Lys Asp Ala Thr Ser
 225 230 235 240
 Arg Glu Phe Phe Arg Asp Ser Phe Met Ser Lys Leu Ser Thr Glu Val
 245 250 255
 Pro Lys Val Ile Gly Val Pro Arg Thr Phe Leu Glu Gly Leu Arg Asp
 260 265 270
 Asp Ile Arg Glu Asn Phe Phe Ser Ser Leu Ala Ile Phe Glu Gly Glu
 275 280 285
 Gly Thr His Leu Val Asp Val Glu Leu Asp Ile Leu Ser His Ala Val
 290 295 300
 Ser Ile Tyr Tyr Ile Leu Ala Ser Ala Glu Ala Ala Thr Asn Leu Ala
 305 310 315 320
 Arg Phe Asp Gly Val Arg Tyr Gly Tyr Arg Ser Pro Gln Ala His Thr
 325 330 335
 Ile Ser Gln Leu Tyr Asp Leu Ser Arg Gly Glu Gly Phe Gly Lys Glu
 340 345 350
 Val Met Arg Arg Ile Leu Leu Gly Asn Tyr Val Leu Ser Ala Glu Arg
 355 360 365
 Gln Asn Val Tyr Tyr Lys Lys Ala Thr Ala Val Arg Ala Lys Ile Val
 370 375 380
 Lys Ala Phe Arg Thr Ala Phe Glu Lys Cys Glu Ile Leu Ala Met Pro
 385 390 395 400
 Val Cys Ser Ser Pro Ala Phe Glu Ile Gly Glu Ile Leu Asp Pro Val
 405 410 415
 Thr Leu Tyr Leu Gln Asp Ile Tyr Thr Val Ala Met Asn Leu Ala Tyr
 420 425 430
 Leu Pro Ala Ile Ala Val Pro Ser Gly Phe Ser Lys Glu Gly Leu Pro
 435 440 445
 Leu Gly Leu Gln Ile Ile Gly Gln Gln Gly Gln Asp Gln Gln Val Cys
 450 455 460
 Gln Val Gly Tyr Ser Phe Gln Glu His Ala Gln Ile Lys Gln Leu Phe
 465 470 475 480
 Ser Lys Arg Tyr Ala Lys Ser Val Val Leu Gly Gly Gln Ser
 485 490

<210>14

<211>500

<212>PRT

<213>Chlamydia pneumoniae

<400>14

Glu Ile Cys Gln Lys Cys Cys Ser Arg Arg Ser Ile Met Ser Ala Val
 1 5 10 15
 Tyr Ala Asp Trp Glu Ser Val Ile Gly Leu Glu Val His Val Glu Leu
 20 25 30
 Asn Thr Ala Ser Lys Leu Phe Ser Ser Ala Leu Asn Arg Phe Gly Asp
 35 40 45
 Glu Pro Asn Thr Asn Ile Ser Thr Val Cys Thr Gly Leu Pro Gly Ser
 50 55 60
 Leu Pro Val Leu Asn Gln Ser Ala Val Glu Lys Ala Val Leu Phe Gly
 65 70 75 80
 Cys Ala Val Glu Gly Glu Ile Ser Leu Leu Ser Arg Phe Asp Arg Lys
 85 90 95
 Ser Tyr Phe Tyr Pro Asp Ser Pro Arg Asn Phe Gln Ile Thr Gln Phe
 100 105 110
 Glu His Pro Ile Ile Arg Gly Gly Arg Ile Lys Ala Ile Val Gln Gly
 115 120 125
 Glu Glu Arg Tyr Phe Glu Leu Ala Gln Thr His Ile Glu Asp Asp Ala
 130 135 140
 Gly Met Leu Lys His Phe Gly Glu Phe Ala Gly Val Asp Tyr Asn Arg
 145 150 155 160
 Ala Gly Val Pro Leu Ile Glu Ile Val Ser Lys Pro Cys Met Phe Cys
 165 170 175
 Pro Glu Asp Gly Cys Cys Tyr Ala Thr Ser Leu Val Ser Leu Leu Asp
 180 185 190
 Tyr Ile Gly Ile Ser Asp Cys Asn Met Glu Gln Gly Ser Ile Arg Phe
 195 200 205
 Asp Val Asn Val Ser Val Arg Pro Lys Gly Ser Pro Glu Leu Arg Asn
 210 215 220
 Lys Val Glu Ile Lys Asn Met Asn Ser Phe Ala Phe Met Ala Gln Ala
 225 230 235 240
 Leu Glu Ala Glu Lys Gln Arg Gln Ile Asp Glu Tyr Leu Asn Gln Pro
 245 250 255
 Asn Lys Asp Pro Lys Leu Val Ile Pro Ala Ala Thr Tyr Arg Trp Asp
 260 265 270
 Pro Glu Lys Lys Lys Thr Val Leu Met Arg Leu Lys Glu Ser Ala Glu
 275 280 285
 Asp Tyr Lys Tyr Phe Pro Glu Pro Asp Leu Pro Thr Leu Gln Leu Thr
 290 295 300
 Glu Ser Tyr Ile Glu Arg Ile Arg Lys Thr Leu Pro Glu Leu Pro Tyr
 305 310 315 320
 Asp Lys Tyr His Arg Tyr Ile Gln Glu Tyr Gly Leu Ser Glu Asp Ile
 325 330 335
 Ala Ser Ile Leu Ile Ser Asp Lys Asn Ile Ala Thr Phe Phe Glu Val
 340 345 350
 Ala Cys Lys Asp Cys Lys Asn Phe Arg Ser Leu Ser Asn Trp Val Thr
 355 360 365
 Val Glu Phe Gly Gly Arg Cys Lys Thr Leu Gly Val Lys Leu Pro Ser
 370 375 380
 Ser Gly Ile Phe Pro Glu Gly Val Ala Gln Leu Val Asn Ala Ile Asp
 385 390 395 400
 Gln Gly Val Ile Thr Gly Lys Ile Ala Lys Glu Ile Ala Asp Leu Met
 405 410 415
 Met Glu Ser Pro Gly Lys Asn Pro Glu Glu Ile Leu Lys Glu Lys Pro
 420 425 430
 Glu Leu Leu Pro Met Ser Asp Glu Gly Glu Leu Gln Lys Ile Ile Ala
 435 440 445
 Glu Val Val Leu Ala Asn Pro Glu Ser Ile Val Asp Tyr Lys Asn Gly
 450 455 460
 Lys Thr Lys Ala Leu Gly Phe Leu Val Gly Gln Ile Met Lys Arg Thr
 465 470 475 480
 Ala Gly Lys Ala Pro Lys Arg Val Asn Glu Leu Leu Leu Leu Glu
 485 490 495
 Leu Asp Lys Gly
 500

<210>15

<211>922

<212>PRT

<213>Chlamydia pneumoniae

<400>15

Met Arg Phe Ser Leu Cys Gly Phe Pro Leu Val Phe Ser Phe Thr Leu
 1 5 10 15
 Leu Ser Val Phe Asp Thr Ser Leu Ser Ala Thr Thr Ile Ser Leu Thr
 20 25 30
 Pro Glu Asp Ser Phe His Gly Asp Ser Gln Asn Ala Glu Arg Ser Tyr
 35 40 45
 Asn Val Gln Ala Gly Asp Val Tyr Ser Leu Thr Gly Asp Val Ser Ile
 50 55 60
 Ser Asn Val Asp Asn Ser Ala Leu Asn Lys Ala Cys Phe Xaa Val Thr
 65 70 75 80
 Ser Gly Ser Val Thr Phe Ala Gly Asn His His Gly Xaa Tyr Phe Asn
 85 90 95
 Asn Ile Ser Ser Gly Thr Thr Lys Glu Gly Ala Val Leu Cys Cys Gln
 100 105 110
 Asp Pro Gln Ala Thr Ala Arg Phe Ser Gly Phe Ser Thr Leu Ser Phe
 115 120 125
 Asn Gln Ser Pro Gly Asp Ile Lys Glu Gln Gly Cys Leu Tyr Ser Lys
 130 135 140
 Asn Ala Leu Met Leu Leu Asn Asn Tyr Val Val Arg Phe Glu Gln Asn
 145 150 155 160
 Gln Ser Lys Thr Lys Gly Gly Ala Ile Ser Gly Ala Asn Val Thr Ile
 165 170 175
 Val Gly Asn Tyr Asp Ser Val Ser Phe Tyr Gln Asn Ala Ala Thr Phe
 180 185 190
 Gly Gly Ala Ile His Ser Ser Gly Pro Leu Gln Ile Ala Val Asn Gln
 195 200 205
 Ala Glu Ile Arg Phe Ala Gln Asn Thr Ala Lys Asn Gly Ser Gly Gly
 210 215 220
 Ala Leu Tyr Ser Asp Gly Asp Ile Asp Ile Asp Gln Asn Ala Tyr Val
 225 230 235 240
 Leu Phe Arg Glu Asn Glu Ala Leu Thr Thr Ala Ile Gly Lys Gly Gly
 245 250 255
 Ala Val Cys Cys Leu Pro Thr Ser Gly Ser Ser Thr Pro Val Pro Ile
 260 265 270
 Val Thr Phe Ser Asp Asn Lys Gln Leu Val Phe Glu Arg Asn His Ser
 275 280 285
 Ile Met Gly Gly Gly Ala Ile Tyr Ala Arg Lys Leu Ser Ile Ser Ser
 290 295 300
 Gly Gly Pro Thr Leu Phe Ile Asn Asn Ile Ser Tyr Ala Asn Ser Gln
 305 310 315 320
 Asn Leu Gly Gly Ala Ile Ala Ile Asp Thr Gly Gly Glu Ile Ser Leu
 325 330 335
 Ser Ala Glu Lys Gly Thr Ile Thr Phe Gln Gly Asn Arg Thr Ser Leu
 340 345 350
 Pro Phe Leu Asn Gly Ile His Leu Leu Gln Asn Ala Lys Phe Leu Lys
 355 360 365
 Leu Gln Ala Arg Asn Gly Tyr Ser Ile Glu Phe Tyr Asp Pro Ile Thr
 370 375 380
 Ser Glu Ala Asp Gly Ser Thr Gln Leu Asn Ile Asn Gly Asp Pro Lys
 385 390 395 400
 Asn Lys Glu Tyr Thr Gly Thr Ile Leu Phe Ser Gly Glu Lys Ser Leu
 405 410 415
 Ala Asn Asp Pro Arg Asp Phe Lys Ser Thr Ile Pro Gln Asn Val Asn
 420 425 430
 Leu Ser Ala Gly Tyr Leu Val Ile Lys Gln Gly Ala Glu Val Thr Val
 435 440 445
 Ser Lys Phe Thr Glu Ser Pro Gly Ser His Leu Val Leu Asp Leu Gly
 450 455 460
 Thr Lys Leu Ile Ala Ser Lys Glu Asp Ile Ala Ile Thr Gly Leu Ala

465		470		475		480
Ile Asp Ile Asp Ser Leu Ser Ser Ser Ser Thr Ala Ala Val Ile Lys						
	485			490		495
Ala Asn Thr Ala Asn Lys Gln Ile S r Val Thr Asp Ser Ile Glu Leu						
	500			505		510
Ile Ser Pro Thr Gly Asn Ala Tyr Glu Asp Leu Arg Met Arg Asn Ser						
	515			520		525
Gln Thr Phe Pro Leu Leu Ser Leu Glu Pro Gly Ala Gly Gly Ser Val						
	530			535		540
Thr Val Thr Ala Gly Asp Phe Leu Pro Val S r Pro His Tyr Gly Phe						
	545			550		555
Gln Gly Asn Trp Lys Leu Ala Trp Thr Gly Thr Gly Asn Lys Val Gly						
	565			570		575
Glu Phe Phe Trp Asp Lys Ile Asn Tyr Lys Pro Arg Pro Glu Lys Glu						
	580			585		590
Gly Asn Leu Val Pro Asn Ile Leu Trp Gly Asn Ala Val Asp Val Arg						
	595			600		605
Ser Leu Met Gln Val Gln Glu Thr His Ala Ser Ser Leu Gln Thr Asp						
	610			615		620
Arg Gly Leu Trp Ile Asp Gly Ile Gly Asn Leu Phe His Val Ser Ala						
	625			630		635
Ser Glu Asp Asn Ile Arg Tyr Arg His Asn Ser Gly Gly Tyr Val Leu						
	645			650		655
Ser Val Asn Asn Glu Ile Thr Pro Lys His Tyr Thr Ser Met Ala Phe						
	660			665		670
Ser Gln Leu Phe Ser Arg Asp Lys Asp Tyr Ala Val Ser Asn Asn Glu						
	675			680		685
Tyr Arg Met Tyr Leu Gly Ser Tyr Leu Tyr Gln Tyr Thr Thr Ser Leu						
	690			695		700
Gly Asn Ile Phe Arg Tyr Ala Ser Arg Asn Pro Asn Val Asn Val Gly						
	705			710		715
Ile Leu Ser Arg Arg Phe Leu Gln Asn Pro Leu Met Ile Phe His Phe						
	725			730		735
Leu Cys Ala Tyr Gly His Ala Thr Asn Asp Met Lys Thr Asp Tyr Ala						
	740			745		750
Asn Phe Pro Met Val Lys Asn Ser Trp Arg Asn Asn Cys Trp Ala Ile						
	755			760		765
Glu Cys Gly Gly Ser Met Pro Leu Leu Val Phe Glu Asn Gly Arg Leu						
	770			775		780
Phe Gln Gly Ala Ile Pro Phe Met Lys Leu Glu Leu Val Tyr Ala Tyr						
	785			790		795
Gln Gly Asp Phe Lys Glu Thr Thr Ala Asp Gly Arg Arg Phe Ser Asn						
	805			810		815
Gly Ser Leu Thr Ser Ile Ser Val Pro Leu Gly Ile Arg Phe Glu Lys						
	820			825		830
Leu Ala Leu Ser Gln Asp Val Leu Tyr Asp Phe Ser Phe Ser Tyr Ile						
	835			840		845
Pro Asp Ile Phe Arg Lys Asp Pro Ser Cys Glu Ala Ala Leu Val Ile						
	850			855		860
Ser Gly Asp Ser Trp Leu Val Pro Ala Ala His Val Ser Arg His Ala						
	865			870		875
Phe Val Gly Ser Gly Thr Gly Arg Tyr His Phe Asn Asp Tyr Thr Glu						
	885			890		895
Leu Leu Cys Arg Gly Ser Ile Glu Cys Arg Pro His Ala Arg Asn Tyr						
	900			905		910
Asn Ile Asn Cys Gly Ser Lys Phe Arg Phe						
	915			920		

<210>16

<211>90

<212>PRT

<213>Chlamydia pneumoniae

<400>16

Ala Leu Pro Val Gly Glu Ile Ser Ser Ile Glu Ser Val Thr Asp Ile
1 5 10 15

Cys Leu Phe Ala Val Phe Ala Leu Ile Thr Ala Ala Val Glu Asp Glu
 20 25 30
 Leu Lys Leu Ser Ile Ser Ile Ala Arg Pro Val Met Ala Met Ser Ser
 35 40 45
 Leu Glu Ala Ile Ser Leu Val Pro Lys Ser Lys Thr Lys Cys Asp Pro
 50 55 60
 Gly Asp Cys Val Asn Phe Glu Thr Val Thr Ser Ala Pro Ser Leu Ile
 65 70 75 80
 Thr Lys Tyr Pro Ala Asp Arg Leu Thr Phe
 85 90

<210>17

<211>1003

<212>PRT

<213>Chlamydia pneumoniae

<400>17

Lys Ser Phe Arg Tyr Asn Leu Ser Leu Ile Phe Ser Phe Leu Val Val
 1 5 10 15
 Ile Pro Leu Thr Asp Ser Thr Thr Ser Ser Leu Ser Thr Ser Leu Leu
 20 25 30
 Asp Glu Gly Asn Pro Gln Ser Met Arg Lys Leu Arg Ile Leu Ala Ile
 35 40 45
 Val Leu Ile Ala Leu Ser Ile Ile Leu Ile Ala Gly Gly Val Val Leu
 50 55 60
 Leu Thr Val Ala Ile Pro Gly Leu Ser Ser Val Ile Ser Ser Pro Ala
 65 70 75 80
 Gly Met Gly Ala Cys Ala Leu Gly Cys Val Met Leu Ala Leu Gly Ile
 85 90 95
 Asp Val Leu Leu Lys Lys Arg Glu Val Pro Ile Val Leu Ala Ser Val
 100 105 110
 Thr Thr Thr Pro Gly Thr Gly Ser Pro Arg Ser Gly Ile Ser Ile Ser
 115 120 125
 Gly Ala Asp Ser Thr Ile Arg Ser Leu Pro Thr Tyr Leu Leu Asp Glu
 130 135 140
 Gly His Pro Gln Ser Met Arg Lys Leu Arg Ile Leu Ala Ile Val Leu
 145 150 155 160
 Ile Val Phe Ser Ile Ile Leu Ile Ala Ser Gly Val Val Leu Leu Thr
 165 170 175
 Val Ala Ile Pro Gly Leu Ser Ser Val Ile Ser Ser Pro Ala Gly Met
 180 185 190
 Gly Ala Cys Ala Leu Gly Cys Val Met Leu Ala Leu Gly Ile Asp Val
 195 200 205
 Leu Leu Lys Lys Arg Glu Val Pro Ile Val Leu Ala Ser Val Thr Thr
 210 215 220
 Thr Pro Gly Thr Gly Ser Pro Arg Ser Gly Ile Ser Ile Ser Gly Ala
 225 230 235 240
 Asp Ser Thr Ile Arg Ser Leu Pro Thr Tyr Pro Leu Asp Gly Gly His
 245 250 255
 Pro Gln Ser Met Arg Lys Leu Arg Ile Leu Ala Ile Val Leu Ile Val
 260 265 270
 Phe Ser Ile Ile Leu Ile Ala Ser Gly Val Val Leu Leu Thr Val Ala
 275 280 285
 Ile Pro Gly Leu Ser Ser Ile Ile Ser Ser Pro Ala Glu Met Gly Ala
 290 295 300
 Cys Ala Leu Gly Cys Val Met Leu Ala Leu Gly Ile Asp Val Leu Leu
 305 310 315 320
 Lys Lys Arg Glu Val Pro Ile Val Val Pro Ala Pro Ile Pro Glu Glu
 325 330 335
 Val Val Ile Asp Asp Ile Asp Glu Glu Ser Ile Arg Leu Gln Gln Glu
 340 345 350
 Ala Glu Ala Ala Leu Ala Arg Leu Pro Glu Glu Met Ser Ala Phe Glu
 355 360 365
 Gly Tyr Ile Lys Val Val Glu Ser His Leu Glu Asn Met Lys Ser Leu
 370 375 380
 Pro Tyr Asp Gly His Gly Leu Glu Glu Lys Thr Lys His Gln Ile Arg

385	Val	Val	Arg	Ser	Ser	Leu	Lys	Ala	Met	Val	Pro	Glu	Phe	Leu	Asp	Ile	400
					405					410							415
Arg	Arg	Ile	Phe	Glu	Glu	Glu	Glu	Phe	Phe	Phe	Leu	Ser	Ala	Arg	Lys		
			420					425									430
Arg	Leu	Ile	Asp	Leu	Ala	Thr	Thr	Leu	Val	Glu	Arg	Lys	Ile	Leu	Thr		
			435					440									445
Glu	Gln	Leu	Glu	Arg	Asn	Asn	Leu	Arg	Lys	Ala	Phe	Ser	Tyr	Leu	Tyr		
			450				455						460				
Gln	Asp	Ser	Ile	Phe	Lys	Lys	Ile	Ile	Asp	Asn	Phe	Glu	Lys	Leu	Ala		
			465				470						475				480
Trp	Lys	Phe	Met	Ile	Leu	Ser	Lys	Ser	Ile	Cys	Arg	Phe	Thr	Ile	Ile		
			485														495
Phe	Glu	Asn	His	Glu	His	Gly	Val	Ala	Lys	Ser	Leu	Leu	His	Lys	Asn		
			500														510
Ala	Val	Leu	Leu	Glu	Lys	Val	Ile	Tyr	Arg	Ser	Leu	Gln	Lys	Ser	Tyr		
			515					520									525
Arg	Asp	Ile	Gly	Met	Ser	Ser	Ala	Lys	Met	Lys	Ile	Leu	His	Gly	Asn		
			530				535										540
Pro	Phe	Phe	Ser	Leu	Glu	Asp	Asn	Lys	Lys	Thr	Ile	Met	Lys	Glu	His		
			545				550										560
Ala	Glu	Met	Leu	Glu	Ser	Leu	Ser	Ser	Tyr	Arg	Lys	Val	Phe	Leu	Ala		
			565														575
Leu	Ser	Asp	Glu	Asn	Val	Val	Asp	Thr	Pro	Ser	Asp	Pro	Lys	Lys	Trp		
			580					585									590
Asp	Leu	Ser	Gly	Ile	Pro	Cys	Arg	Asp	Ala	Leu	Ser	Glu	Ile	Ser	Arg		
			595					600									605
Asp	Glu	Gln	Trp	Gln	Lys	Lys	Ala	His	Leu	Lys	His	Gln	Glu	Ser	Leu		
			610				615										620
Tyr	Thr	Gln	Ala	Arg	Asp	Arg	Leu	Thr	Asp	Gln	Ser	Ser	Lys	Glu	Asn		
			625				630										640
Gln	Lys	Glu	Leu	Glu	Lys	Ala	Glu	Gln	Glu	Tyr	Ile	Ser	Ser	Trp	Glu		
			645														655
Arg	Val	Lys	Lys	Phe	Glu	Ile	Glu	Arg	Val	Gln	Glu	Arg	Ile	Gln	Ala		
			660														670
Ile	Gln	Lys	Leu	Tyr	Pro	Asn	Ile	Leu	Glu	Arg	Glu	Glu	Glu	Thr	Thr		
			675					680									685
Gly	Gln	Glu	Thr	Val	Thr	Pro	Thr	Val	Gln	Gly	Thr	Thr	Ala	Ser	Ser		
			690				695										700
Asp	Leu	Thr	Asp	Ile	Leu	Gly	Arg	Ile	Glu	Val	Ser	Ser	Arg	Glu	Asp		
			705				710										720
Asn	Gln	Asn	Gln	Glu	Ser	Cys	Val	Lys	Val	Leu	Arg	Ser	His	Glu	Val		
			725														735
Glu	Met	Ser	Trp	Glu	Val	Lys	Gln	Glu	Tyr	Gly	Pro	Lys	Lys	Lys	Glu		
			740														750
Phe	Gln	Asp	Gln	Met	Gly	Ser	Leu	Glu	Arg	Phe	Phe	Thr	Glu	His	Ile		
			755					760									765
Glu	Glu	Leu	Glu	Val	Leu	Gln	Lys	Asp	Tyr	Ser	Lys	His	Leu	Ser	Tyr		
			770					775									780
Phe	Lys	Lys	Val	Asn	Asn	Lys	Lys	Glu	Val	Gln	Tyr	Ala	Lys	Phe	Arg		
			785				790										800
Leu	Lys	Val	Leu	Glu	Ser	Asp	Leu	Glu	Gly	Ile	Leu	Ala	Gln	Thr	Glu		
			805														815
Ser	Ala	Glu	Ser	Leu	Leu	Thr	Gln	Glu	Glu	Leu	Pro	Ile	Leu	Ala	Thr		
			820														830
Arg	Gly	Ala	Leu	Glu	Lys	Ala	Val	Phe	Lys	Gly	Ser	Leu	Cys	Cys	Ala		
			835					840									845
Leu	Ala	Ser	Lys	Ala	Lys	Pro	Tyr	Phe	Glu	Glu	Asp	Pro	Arg	Phe	Gln		
			850				855										860
Asp	Ser	Asp	Thr	Gln	Leu	Arg	Ala	Leu	Thr	Leu	Arg	L u	Gln	Glu	Ala		
			865				870										880
Lys	Ala	Ser	Leu	Glu	Glu	Glu	Ile	Lys	Arg	Phe	Ser	Asn	Leu	Glu	Asn		
			885														895
Asp	Ile	Ala	Glu	Glu	Arg	Arg	Leu	L u	Lys	Glu	Ser	Lys	Gln	Thr	Phe		

900 905 910
 Glu Arg Ala Gly Leu Gly Val Leu Arg Glu Ile Ala Val Glu Ser Thr
 915 920 925
 Tyr Asp Leu Arg Ser Leu Thr Asn Thr Trp Glu Gly Thr Pro Glu Ser
 930 935 940
 Glu Lys Val Tyr Phe Ser Met Tyr Leu Asn Tyr Tyr Asn Glu Glu Lys
 945 950 955 960
 Arg Arg Asa Lys Thr Arg Leu Val Glu Met Thr Gln Arg Tyr Arg Asp
 965 970 975
 Phe Lys Met Ala Leu Glu Ala Met Gln Phe Asn Glu Glu Ala Leu Leu
 980 985 990
 Gln Glu Glu Leu Ser Ile Gln Ala Pro Ser Glu
 995 1000

<210>18

<211>302

<212>PRT

<213>Chlamydia pneumoniae

<400>18

Cys Lys Tyr Ser Tyr Leu Leu Asn Tyr Pro Pro Pro Pro Arg Arg Ser
 1 5 10 15
 Leu Gly Val Ser Cys Ser Lys Leu Arg Ser Leu Ser Ile Thr Leu Leu
 20 25 30
 Val Leu Gly Val Leu Leu Leu Thr Leu Gly Ile Pro Gly Leu Thr Ala
 35 40 45
 Gly Ile Ser Phe Gly Ala Gly Leu Gly Phe Ser Ala Leu Gly Gly Val
 50 55 60
 Leu Val Ile Ser Gly Leu Leu Phe Leu Leu Val Arg Arg Glu Val Pro
 65 70 75 80
 Thr Val Arg Ser Glu Glu Ile Pro Arg Gly Val Ser Val Thr Pro Ser
 85 90 95
 Glu Glu Pro Ala Leu Glu Lys Ala Gln Lys Glu Pro Glu Thr Lys Lys
 100 105 110
 Ile Leu Asp Arg Leu Pro Lys Glu Leu Asp Gln Leu Asp Thr Tyr Ile
 115 120 125
 Gln Glu Val Phe Ala Cys Leu Glu Arg Leu Lys Asp Pro Lys Tyr Glu
 130 135 140
 Asp Arg Gly Leu Leu Thr Glu Ala Lys Glu Lys Leu Arg Val Phe Asp
 145 150 155 160
 Val Val Glu Lys Asp Met Met Ser Glu Phe Leu Asp Ile Gln Arg Val
 165 170 175
 Leu Asn Glu Glu Ala Tyr Tyr Val Glu His Cys Gln Asp Pro Leu Glu
 180 185 190
 Asn Ile Ala Tyr Glu Ile Phe Ser Ser Gln Glu Leu Arg Asp Tyr Tyr
 195 200 205
 Cys Ala Gly Val Cys Gly Tyr Leu Pro Ser Gly Asp Ala Arg Ala Asp
 210 215 220
 Arg Leu Lys Arg Ser Val Lys Glu Val Met Asp Arg Phe Met Arg Val
 225 230 235 240
 Thr Trp Lys Ser Trp Glu Ala Ser Val Met Leu Asp His Ser Tyr Gly
 245 250 255
 Val Ala Arg Glu Leu Phe Lys Lys Ala Val Gly Val Leu Glu Glu Ser
 260 265 270
 Val Tyr Lys Ile Leu Phe Lys Ser Tyr Arg Asp Ala Phe Tyr Glu Cys
 275 280 285
 Glu Lys Ala Lys Ile Gln Arg Asp Gly Arg Phe Lys Trp Leu
 290 295 300

<210>19

<211>477

<212>PRT

<213>Chlamydia pneumoniae

<400>19

Asp Thr Ser Ala His Ala Glu Gln Arg Phe Arg Asp Ile Asn Gly Cys
 1 5 10 15
 Trp Glu Asp Leu Lys Gln Thr Ile Phe Trp Val Gly Glu His Asp Cys

			20					25						30					
Thr	Asp	Ile	Glu	Thr	Val	Arg	Lys	Ser	Cys	Met	Trp	Leu	Asp	Arg	Tyr				
	35						40					45							
Ala	Asp	Lys	Phe	Ile	Leu	Arg	Glu	Lys	Glu	Glu	Lys	Met	Glu	Arg	His				
	50					55						60							
Glu	Leu	Phe	His	Ala	Thr	Met	Val	Arg	Lys	Ala	Ser	Gly	His	Ala	Tyr				
	65				70					75					80				
Ala	Lys	Ala	Lys	Ala	Ala	Phe	Glu	Lys	Glu	Arg	Ser	Asn	Glu	Asn	Gln				
				85						90					95				
Arg	Lys	Val	Lys	Asp	Val	Glu	Lys	Trp	Leu	Ser	Lys	Gly	Leu	Ala	Glu				
		100						105					110						
Phe	Arg	Asn	Gln	Glu	Ser	Arg	Arg	Ala	Arg	Glu	Arg	Leu	Arg	Glu	Leu				
	115					120						125							
Gln	Thr	Leu	Tyr	Pro	Glu	Val	Ser	Val	Glu	Glu	Arg	Val	Leu	Glu	Arg				
	130					135						140							
Gln	Arg	Thr	Lys	Lys	Val	Asn	Leu	Glu	Asn	Leu	Tyr	Ala	Asp	Ile	Glu				
	145				150					155					160				
Lys	Lys	Tyr	His	His	Cys	Val	Arg	Glu	Gln	Glu	His	Tyr	Trp	Lys	Glu				
			165						170					175					
Val	Glu	Asn	Lys	Glu	Ala	Glu	Tyr	Arg	Glu	Asn	Gly	Glu	Lys	Val	Leu				
	180							185				190							
Ser	Ala	Glu	Glu	Val	Ser	Glu	Cys	Leu	Gln	Arg	Leu	Glu	Asp	Cys	Leu				
	195						200					205							
Glu	Thr	Trp	Ser	Lys	Lys	Leu	Thr	Lys	Ala	Glu	Glu	Ser	Val	Phe	Glu				
	210				215							220							
Met	Lys	Phe	Asp	Ala	Thr	Glu	Lys	Leu	Gly	Asn	Lys	Val	Leu	Ser	Asp				
	225				230					235					240				
Val	Thr	Asn	Arg	Leu	Glu	Ile	Leu	Cys	Glu	Asp	Ala	Glu	Glu	Met	Ile				
			245					250						255					
Phe	Arg	Ile	Glu	Glu	Ile	Glu	Met	Thr	Leu	Arg	Met	Val	Glu	Leu	Pro				
	260						265						270						
Leu	Leu	Phe	Met	Lys	Asn	Thr	Phe	Glu	Lys	Ala	Ser	Leu	Gln	Tyr	Asn				
	275						280					285							
Ser	Cys	Lys	Glu	Met	Leu	Ala	Lys	Val	Glu	Pro	Gln	Cys	Lys	Glu	Ser				
	290				295					300									
Pro	Thr	Tyr	Arg	Ser	Ser	Gln	Glu	Arg	Leu	Glu	Arg	Leu	Asn	Gln	Asp				
	305				310					315					320				
Leu	Gln	Thr	Ala	Tyr	Thr	Asn	Cys	Gln	Glu	Arg	Leu	Gln	Gly	Phe	Ser				
			325					330						335					
Asp	Leu	Glu	Ser	Lys	Val	Arg	Thr	Cys	Arg	Asp	His	Leu	Arg	Glu	Gln				
	340							345					350						
Met	Lys	His	Phe	Glu	Val	Gln	Gly	Leu	Asn	Phe	Ile	Asn	Glu	Glu	Leu				
	355						360					365							
Leu	Trp	Val	Gly	Ala	Glu	Leu	Phe	Thr	Gln	Ala	Arg	Leu	Asp	Leu	Val				
	370				375						380								
Ala	Thr	Val	Pro	Tyr	Met	Glu	Phe	Tyr	Leu	Gln	Tyr	His	Asn	Ile	Lys				
	385				390					395					400				
Arg	Glu	Lys	Val	Arg	Ser	Gln	Trp	Met	Ala	Lys	Thr	Glu	Arg	Tyr	Arg				
			405						410					415					
Glu	Ile	Arg	Gln	Ala	Phe	Gln	Gly	Val	Met	Lys	Glu	Asp	Leu	Leu	Ala				
		420					425						430						
Glu	Asp	Thr	Ile	Leu	Lys	Glu	Glu	Asp	Tyr	Trp	Leu	Leu	Arg	Asp	Asp				
	435					440						445							
Trp	Leu	Leu	Arg	Asp	Glu	Arg	Lys	Asn	Arg	Gln	Arg	Arg	Leu	Ile	Cys				
	450					455					460								
Asn	Lys	Ile	Ala	Ala	Ala	Gln	Gln	Arg	Val	Lys	Gly	Phe							
	465				470					475									

<210>20

<211>810

<212>PRT

<213>Chlamydia pneumoniae

<400>20

Cys	Lys	Tyr	Phe	Tyr	Leu	Arg	Ser	Tyr	Pro	Pro	Pro	Gln	His	S	r	Val
1					5				10							15

Gly Ser Ile Ser Ser Pro Ser Lys Leu Arg Val Leu Ala Ile Thr Phe
 20 25 30
 Leu Val Phe Gly Met Leu Leu Leu Ile Ser Gly Ala Leu Phe Leu Thr
 35 40 45
 Leu Gly Ile Pro Gly Leu Ser Ala Ala Ile Ser Phe Gly Leu Gly Ile
 50 55 60
 Gly Leu Ser Ala Leu Gly Gly Val Leu Met Ile Ser Gly Leu Leu Cys
 65 70 75 80
 Leu Leu Val Lys Arg Glu Ile Pro Thr Val Arg Pro Glu Glu Ile Pro
 85 90 95
 Glu Gly Val Ser Leu Ala Pro Ser Glu Glu Pro Ala Leu Gln Ala Ala
 100 105 110
 Gln Lys Thr Leu Ala Gln Leu Pro Lys Glu Leu Asp Gln Leu Asp Thr
 115 120 125
 Asp Ile Gln Glu Val Phe Ala Cys Leu Arg Lys Leu Lys Asp Ser Lys
 130 135 140
 Tyr Glu Ser Arg Ser Phe Leu Asn Asp Ala Lys Lys Glu Leu Arg Val
 145 150 155 160
 Phe Asp Phe Val Val Glu Asp Thr Leu Ser Glu Ile Phe Glu Leu Arg
 165 170 175
 Gln Ile Val Ala Gln Glu Gly Trp Asp Leu Asn Phe Leu Ile Asn Gly
 180 185 190
 Gly Arg Ser Leu Met Met Thr Ala Glu Ser Glu Ser Leu Asp Leu Phe
 195 200 205
 His Val Ser Lys Arg Leu Gly Tyr Leu Pro Ser Gly Asp Val Arg Gly
 210 215 220
 Glu Gly Leu Lys Lys Ser Ala Lys Glu Ile Val Ala Arg Leu Met Ser
 225 230 235 240
 Leu His Cys Glu Ile His Lys Val Ala Val Ala Phe Asp Arg Asn Ser
 245 250 255
 Tyr Ala Met Ala Glu Lys Ala Phe Ala Lys Ala Leu Gly Ala Leu Glu
 260 265 270
 Glu Ser Val Tyr Arg Ser Leu Thr Gln Ser Tyr Arg Asp Lys Phe Leu
 275 280 285
 Glu Ser Glu Arg Ala Lys Ile Pro Trp Asn Gly His Ile Thr Trp Leu
 290 295 300
 Arg Asp Asp Ala Lys Ser Gly Cys Ala Glu Lys Lys Leu Arg Asp Ala
 305 310 315 320
 Glu Glu Arg Trp Lys Lys Phe Arg Lys Ala Val Phe Trp Val Glu Glu
 325 330 335
 Asp Gly Gly Phe Asp Ile Asn Asn Leu Leu Gly Asp Trp Gly Thr Val
 340 345 350
 Leu Asp Pro Tyr Arg Gln Glu Arg Met Asp Glu Ile Thr Phe His Glu
 355 360 365
 Leu Tyr Glu Lys Thr Thr Phe Leu Lys Arg Leu His Arg Lys Cys Ala
 370 375 380
 Leu Ala Lys Thr Thr Phe Glu Lys Lys Arg Ser Lys Lys Asn Leu Gln
 385 390 395 400
 Ala Val Glu Glu Ala Asn Ala Arg Arg Leu Lys Tyr Val Arg Asp Trp
 405 410 415
 Tyr Asp Gln Glu Phe Gln Lys Ala Gly Glu Arg Leu Glu Lys Leu His
 420 425 430
 Ala Leu Tyr Pro Glu Val Ser Val Ser Ile Arg Glu Asn Lys Ile Gln
 435 440 445
 Glu Thr Arg Ser Asn Leu Glu Lys Ala Tyr Glu Ala Ile Glu Glu Asn
 450 455 460
 Tyr Arg Cys Cys Val Arg Glu Gln Glu Asp Tyr Trp Lys Glu Glu Glu
 465 470 475 480
 Lys Arg Glu Ala Glu Phe Arg Glu Arg Gly Asn Lys Ile Leu Ser Pro
 485 490 495
 Glu Glu Leu Glu Ser Ser Leu Glu Gln Phe Asp His Gly Leu Lys Asn
 500 505 510
 Phe Ser Glu Lys Leu Met Glu Leu Glu Gly His Ile Leu Lys Leu Gln
 515 520 525

Lys Glu Ala Thr Ala Glu Val Glu Asn Lys Ile Leu Ser Asp Ala Glu
 530 535 540
 Ser Arg Leu Glu Ile Val Phe Glu Asp Val Lys Glu Met Pro Cys Arg
 545 550 555 560
 Ile Glu Glu Ile Glu Lys Thr Leu Arg Met Ala Glu Leu Pro Leu Leu
 565 570 575
 Pro Thr Lys Lys Ala Phe Glu Lys Ala Cys Ser Gln Tyr Asn Ser Cys
 580 585 590
 Ala Glu Met Leu Glu Lys Val Lys Pro Tyr Cys Lys Glu Ser Leu Ala
 595 600 605
 Tyr Val Thr Ser Lys Glu Arg Leu Val Ser Leu Asp Glu Asp Leu Arg
 610 615 620
 Arg Ala Tyr Thr Glu Cys Gln Lys Arg Phe Gln Gly Asp Ser Gly Leu
 625 630 635 640
 Glu Ser Glu Val Arg Ala Cys Arg Glu Gln Leu Arg Glu Arg Ile Gln
 645 650 655
 Glu Pho Glu Thr Gln Gly Leu Asp Leu Val Glu Lys Glu Leu Leu Cys
 660 665 670
 Val Ser Ser Arg Leu Arg Asn Thr Glu Cys Asp Cys Val Ser Gly Val
 675 680 685
 Lys Lys Glu Ala Pro Pro Gly Lys Lys Phe Tyr Ala Gln Tyr Tyr Asp
 690 695 700
 Glu Ile Tyr Arg Val Arg Val Gln Ser Arg Trp Met Thr Met Ser Glu
 705 710 715 720
 Arg Leu Arg Glu Gly Val Gln Ala Cys Asn Lys Met Leu Lys Ala Gly
 725 730 735
 Leu Ser Glu Glu Asp Lys Val Leu Lys Glu Glu Glu Tyr Trp Leu Tyr
 740 745 750
 Arg Glu Glu Arg Lys Asn Lys Glu Lys Arg Leu Val Gly Thr Lys Ile
 755 760 765
 Val Ala Thr Gln Gln Arg Val Ala Ala Phe Glu Ser Ile Glu Val Pro
 770 775 780
 Glu Ile Pro Glu Ala Pro Glu Glu Lys Pro Ser Leu Leu Asp Lys Ala
 785 790 795 800
 Arg Ser Leu Phe Thr Arg Glu Asp His Ser
 805 810

<210>21

<211>83

<212>PRT

<213>Chlamydia pneumoniae

<400>21

Glu Trp Ser Ser Arg Val Asn Lys Glu Arg Ala Leu Ser Ser Lys Leu
 1 5 10 15
 Gly Phe Ser Ser Gly Ala Ser Gly Ile Ser Gly Thr Ser Met Asp Ser
 20 25 30
 Asn Ala Ala Thr Arg Cys Cys Val Ala Thr Ile Leu Val Pro Thr Lys
 35 40 45
 Arg Phe Ser Leu Phe Phe Leu Ser Ser Arg Tyr Asn Gln Tyr Ser Ser
 50 55 60
 Ser Leu Arg Thr Leu Ser Ser Ser Leu Arg Pro Ala Phe Asn Ile Leu
 65 70 75 80
 Leu His Ala

<210>22

<211>246

<212>PRT

<213>Chlamydia pneumoniae

<400>22

Phe Trp Tyr Ser Ile Met Thr Ala Ala Pro Ala Ile Leu His Val Ser
 1 5 10 15
 Pro Thr Pro Pro Glu Glu Thr Lys Phe Val Ile Pro Lys Asp Ser Lys
 20 25 30
 Ser Arg Ala Leu Gly Ile Thr Leu Leu Val Val Gly Ile Leu Leu Val
 35 40 45

Val Cys Gly Ala Ile Val Leu Ser Gly Val Ile Ser Gly Leu Ser Ala
 50 55 60
 Leu Ile Val Cys Gly Leu Gly Ile Ser Thr Ile Ser Leu Gly Val Val
 65 70 75 80
 Leu Phe Val Leu Gly Leu Ile Leu Leu Leu Arg Lys Arg Glu Leu Thr
 85 90 95
 Leu Glu Gln Ile Glu Ala Lys Gln Ile Ala Glu Thr Phe Ala Asp Glu
 100 105 110
 Leu Lys Glu Leu Glu Met Tyr Ile Gln Ser Thr Glu Lys Ser Leu Glu
 115 120 125
 Lys Ile Glu Gly Ser Arg Tyr Ser Asp Gln Gly Phe Leu Asn Arg Ala
 130 135 140
 Thr Gln Lys Ile Leu Asp Leu Glu Ser Ser Leu Ser Ser Ile Thr Ser
 145 150 155 160
 Glu Phe Arg Asp Leu Arg Gln Leu Phe Asp Glu Glu Lys Ile Glu Leu
 165 170 175
 Leu Ser Gly Glu Arg Leu Leu Glu Phe Ile Ala Ala Asn Leu Phe Lys
 180 185 190
 Gln Gly Arg Asp Val Tyr Leu Asn Leu Gly Asn Leu Ala Asp Ile Arg
 195 200 205
 Ala Tyr Met Gly Pro Asn Asn Tyr Lys Val Ala Met Val Ile Glu Lys
 210 215 220
 Ala Lys Ala Val Val His Glu Phe Ile Val Leu Thr Thr Met Ala Arg
 225 230 235 240
 Glu Leu Glu Phe Phe Phe
 245

<210>23

<211>265

<212>PRT

<213>Chlamydia pneumoniae

<400>23

Gly Ile Arg Val Phe Phe Leu Lys Asn Lys Tyr Gly Leu Leu Lys Gly
 1 5 10 15
 Met Tyr Gln Glu Asn Leu Arg Leu Leu Glu Arg Leu Leu Tyr Asn Ser
 20 25 30
 Val Gln Lys Ser Tyr Ala Asp Arg Leu Phe Ser Tyr Glu Lys Thr Lys
 35 40 45
 Met Val His Asp Thr Pro Leu Ile Pro Trp Glu Glu Asp Lys Glu Lys
 50 55 60
 Cys Ala Glu Ala Glu Lys Ala Phe Leu Glu Gln Gln Lys Ile Leu Leu
 65 70 75 80
 Asp Tyr Gly Lys Ser Ile Phe Trp Leu Asn Glu Asn Asp Glu Ile Asn
 85 90 95
 Leu Asn Asp Pro Trp Ser Trp Gly Leu Asn Thr Val Arg Thr Arg Lys
 100 105 110
 Val Phe Gln Glu Val Asp Asp Ser Glu Arg Trp Asn His Lys Val Leu
 115 120 125
 Ile Gln Lys Leu Glu Asp Asp Tyr Glu Lys Leu Leu Glu Glu Ser Ser
 130 135 140
 Lys Glu Ser Thr Glu Ala Asn Lys Lys Leu Leu Ser Asp Leu Val Asp
 145 150 155 160
 Arg Leu Glu Asp Ala Lys Thr Lys Phe Phe Leu Lys Lys Gln Glu Glu
 165 170 175
 Val Glu Thr Arg Val Lys Asp Leu Arg Ala Arg Tyr Gly Gly Thr Val
 180 185 190
 Asp Pro Lys Gln Asp Thr Glu Ala Lys Lys Lys Val Glu Leu Glu Ala
 195 200 205
 Ser Leu Glu Thr Phe Leu Asp Ser Ile Glu Ser Glu Leu Val Gln Cys
 210 215 220
 Leu Glu Asp Gln Asp Ile Tyr Trp Lys Glu Gln Asp Val Lys Asp Leu
 225 230 235 240
 Ala Arg Thr Gln Glu Leu Glu Glu Gln Asp Ile Glu Ala Lys Arg Glu
 245 250 255
 Glu Ala Ala Glu Asp Leu Arg Lys Ser

<210>24

<211>277

<212>PRT

<213>Chlamydia pneumoniae

<400>24

Glu Ser Leu Asn Glu Arg Leu Lys Lys Ser Lys Thr Met Leu Asp Arg
 1 5 10 15
 Ala Lys Trp His Ile Glu Asn Ala Glu Asp Ser Ile Thr Trp Thr
 20 25 30
 Ser Gln Ile Glu Met Lys Asp Met Lys Ala Arg Leu Lys Ile Leu Lys
 35 40 45
 Glu Asp Ile Thr Ser Val Leu Pro Glu Ile Asp Glu Ile Glu Thr Cys
 50 55 60
 Leu Ser Leu Glu Glu Leu Pro Leu Leu Thr Thr Arg Glu Leu Leu Thr
 65 70 75 80
 Lys Ser Tyr Leu Lys Phe Lys Ile Cys Ser Glu Thr Leu Leu Lys Met
 85 90 95
 Thr Ser Val Phe Glu Asn Asn Ile Tyr Val Gln Glu Tyr Glu Val Gln
 100 105 110
 Leu Gln Asn Leu Gly Phe Lys Leu Gln Gly Ile Ser Gln Arg Phe Gly
 115 120 125
 Lys Lys Gln Asp Asp Phe Ala Asn Leu Glu Glu Gln Val Ala Leu Gln
 130 135 140
 Lys Lys Arg Leu Arg Glu Leu Thr Gln Asn Phe Glu Ile Gln Gly Phe
 145 150 155 160
 Asn Phe Met Lys Glu Asp Phe Lys Ala Ala Ala Lys Asp Leu Tyr Ile
 165 170 175
 Arg Ser Thr Ala Glu Gln Lys Met Asn Phe Asp Val Pro Cys Met Glu
 180 185 190
 Leu Phe Arg Arg Tyr His Glu Glu Val Asn Lys Pro Leu Leu Glu Leu
 195 200 205
 Met Tyr Asn Cys Ala Asp Ser Tyr Arg Asp Ala Lys Lys Lys Leu Cys
 210 215 220
 Ser Leu Arg Leu Asp Glu Lys Glu Leu Leu Gln Lys Glu Ile Lys Lys
 225 230 235 240
 Glu Glu Phe Tyr Gln Lys Lys Gln Gln Arg His Ala Asp Arg Ser Arg
 245 250 255
 His Thr Arg Tyr Gln Lys Leu Arg Ile Ala Glu Glu Leu Ala Leu Glu
 260 265 270
 Leu Lys Lys Lys Ile
 275

<210>25

<211>202

<212>PRT

<213>Chlamydia pneumoniae

<400>25

Leu Leu Ser Leu Ser Asn Leu Leu Tyr Trp Lys Glu Ser Pro Leu Arg
 1 5 10 15
 Glu Lys Lys Val Val Met Lys Ile Pro Leu Arg Phe Leu Leu Ile Ser
 20 25 30
 Leu Val Pro Thr Leu Ser Met Ser Asn Leu Leu Gly Ala Ala Thr Thr
 35 40 45
 Glu Glu Leu Ser Ala Ser Asn Ser Phe Asp Gly Thr Thr Ser Thr Thr
 50 55 60
 Ser Phe Ser Ser Lys Thr Ser Ser Ala Thr Asp Gly Thr Asn Tyr Val
 65 70 75 80
 Phe Lys Asp Ser Val Val Ile Glu Asn Val Pro Lys Thr Gly Glu Thr
 85 90 95
 Gln Ser Thr Ser Cys Phe Lys Asn Asp Ala Ala Ala Gly Asp Leu Asn
 100 105 110
 Phe Leu Gly Gly Gly Phe Ser Phe Thr Phe Ser Asn Ile Asp Ala Thr
 115 120 125
 Thr Ala Ser Gly Ala Ala Ile Gly Ser Glu Ala Ala Asn Lys Thr Val

130 135 190
 Thr Leu Ser Gly Phe Ser Ala L u Ser Phe Leu Lys Ser Pro Ala Ser
 145 150 155 160
 Thr Val Thr Asn Gly Leu Gly Ala Ile Asn Val Lys Gly Asn Leu Ser
 165 170 175
 Leu Leu Asp Asn Asp Lys Val Leu Ile Gln Asp Asn Phe Ser Thr Gly
 180 185 190
 Asp Gly Gly Gln Leu Ile Val Gln Ala Pro
 195 200

<210>26

<211>199

<212>PRT

<213>Chlamydia pneumoniae

<400>26

Gly Ile Asp Ser Gly Gln Phe Leu Asn Arg Arg Trp Arg Thr Ile Asn
 1 5 10 15
 Cys Ala Gly Ser Leu Lys Ile Ala Asn Lys Ser Leu Ser Phe Ile
 20 25 30
 Gly Asn Ser Ser Ser Thr Arg Gly Gly Ala Ile His Thr Lys Asn Leu
 35 40 45
 Thr Leu Ser Ser Gly Gly Glu Thr Leu Phe Gln Gly Asn Thr Ala Pro
 50 55 60
 Thr Ala Ala Gly Lys Gly Gly Ala Ile Ala Ile Ala Asp Ser Gly Thr
 65 70 75 80
 Leu Ser Ile Ser Gly Asp Ser Gly Asp Ile Ile Phe Glu Gly Asn Thr
 85 90 95
 Ile Gly Ala Thr Gly Thr Val Ser His Ser Ala Ile Asp Leu Gly Thr
 100 105 110
 Ser Ala Lys Ile Thr Ala Leu Arg Ala Ala Gln Gly His Thr Ile Tyr
 115 120 125
 Phe Tyr Asp Pro Ile Thr Val Thr Gly Ser Thr Ser Val Ala Asp Ala
 130 135 140
 Leu Asn Ile Asn Ser Pro Asp Thr Gly Asp Asn Lys Glu Tyr Thr Gly
 145 150 155 160
 Thr Ile Val Phe Ser Gly Glu Lys Leu Thr Glu Ala Glu Ala Lys Asp
 165 170 175
 Glu Lys Asn Arg Thr Ser Lys Leu Leu Gln Asn Val Ala Phe Lys Asn
 180 185 190
 Gly Thr Val Val Leu Lys Arg
 195

<210>37

<211>483

<212>PRT

<213>Chlamydia pneumoniae

<400>27

Lys Gly Asp Val Val Leu Ser Ala Asn Gly Phe Ser Gln Asp Ala Asn
 1 5 10 15
 Ser Lys Leu Ile Met Asp Leu Gly Thr Ser Leu Val Ala Asn Thr Glu
 20 25 30
 Ser Ile Glu Leu Thr Asn Leu Glu Ile Asn Ile Asp Ser Leu Arg Asn
 35 40 45
 Gly Lys Lys Ile Lys Leu Ser Ala Ala Thr Ala Gln Lys Asp Ile Arg
 50 55 60
 Ile Asp Arg Pro Val Val Leu Ala Ile Ser Asp Glu Ser Phe Tyr Gln
 65 70 75 80
 Asn Gly Phe Leu Asn Glu Asp His Ser Tyr Asp Gly Ile Leu Glu Leu
 85 90 95
 Asp Ala Gly Lys Asp Ile Val Ile Ser Ala Asp Ser Arg Ser Ile Asp
 100 105 110
 Ala Val Gln Ser Pro Tyr Gly Tyr Gln Gly Lys Trp Thr Ile Asn Trp
 115 120 125
 Ser Thr Asp Asp Lys Lys Ala Thr Val Ser Trp Ala Lys Gln Ser Phe
 130 135 140
 Asn Pro Thr Ala Glu Gln Glu Ala Pro Leu Val Pro Asn Leu Leu Trp

145					150					155				160	
Gly	Ser	Phe	Ile	Asp	Val	Arg	Ser	Phe	Gln	Asn	Phe	Ile	Glu	Leu	Gly
				165					170					175	
Thr	Glu	Gly	Ala	Pro	Tyr	Glu	Lys	Arg	Phe	Trp	Val	Ala	Gly	Ile	Ser
			180					185					190		
Asn	Val	Leu	His	Arg	Ser	Gly	Arg	Glu	Asn	Gln	Arg	Lys	Phe	Arg	His
		195					200					205			
Val	Ser	Gly	Gly	Ala	Val	Val	Gly	Ala	Ser	Thr	Arg	Met	Pro	Gly	Gly
	210					215					220				
Asp	Thr	Leu	Ser	Leu	Gly	Phe	Ala	Gln	Leu	Phe	Ala	Arg	Asp	Lys	Asp
225				230						235				240	
Tyr	Phe	Met	Asn	Thr	Asn	Phe	Ala	Lys	Thr	Tyr	Ala	Gly	Ser	Leu	Arg
			245						250					255	
Leu	Gln	His	Asp	Ala	Ser	Leu	Tyr	Ser	Val	Val	Ser	Ile	Leu	Leu	Gly
		260					265						270		
Glu	Gly	Gly	Leu	Arg	Glu	Ile	Leu	Leu	Pro	Tyr	Val	Ser	Lys	Thr	Leu
	275						280					285			
Pro	Cys	Ser	Phe	Tyr	Gly	Gln	Leu	Ser	Tyr	Gly	His	Thr	Asp	His	Arg
290					295						300				
Met	Lys	Thr	Glu	Ser	Leu	Pro	Pro	Pro	Pro	Pro	Thr	Leu	Ser	Thr	Asp
305				310						315				320	
His	Thr	Ser	Trp	Gly	Gly	Tyr	Val	Trp	Ala	Gly	Glu	Leu	Gly	Thr	Arg
			325					330						335	
Val	Ala	Val	Glu	Asn	Thr	Ser	Gly	Arg	Gly	Phe	Phe	Gln	Glu	Tyr	Thr
		340					345						350		
Pro	Phe	Val	Lys	Val	Gln	Ala	Val	Tyr	Ala	Arg	Gln	Asp	Ser	Phe	Val
	355					360					365				
Glu	Leu	Gly	Ala	Ile	Ser	Arg	Asp	Phe	Ser	Asp	Ser	His	Leu	Tyr	Asn
370					375					380					
Leu	Ala	Ile	Pro	Leu	Gly	Ile	Lys	Leu	Glu	Lys	Arg	Phe	Ala	Glu	Gln
385				390					395					400	
Tyr	Tyr	His	Val	Val	Ala	Met	Tyr	Ser	Pro	Asp	Val	Cys	Arg	Ser	Asn
		405						410						415	
Pro	Lys	Cys	Thr	Thr	Thr	Leu	Leu	Ser	Asn	Gln	Gly	Ser	Trp	Lys	Thr
		420					425					430			
Lys	Gly	Ser	Asn	Leu	Ala	Arg	Gln	Ala	Gly	Ile	Val	Gln	Ala	Ser	Gly
	435					440					445				
Phe	Arg	Ser	Leu	Gly	Ala	Ala	Ala	Glu	Leu	Phe	Gly	Asn	Phe	Gly	Phe
450					455					460					
Glu	Trp	Arg	Gly	Ser	Ser	Arg	Ser	Tyr	Asn	Val	Asp	Ala	Gly	Ser	Lys
465				470					475					480	
Ile	Lys	Phe													

<210>28

<211>177

<212>PRT

<213>Chlamydia pneumoniae

<400>28

Met	Lys	Ser	Ser	Phe	Pro	Lys	Phe	Val	Phe	Ser	Thr	Phe	Ala	Ile	Phe
1				5					10					15	
Pro	Leu	Ser	Met	Ile	Ala	Thr	Glu	Thr	Val	Leu	Asp	Ser	Ser	Ala	Ser
		20						25					30		
Phe	Asp	Gly	Asn	Lys	Asn	Gly	Asn	Phe	Ser	Val	Arg	Glu	Ser	Gln	Glu
	35					40						45			
Asp	Ala	Gly	Thr	Thr	Tyr	Leu	Phe	Lys	Gly	Asn	Val	Thr	Leu	Glu	Asn
	50				55					60					
Ile	Pro	Gly	Thr	Gly	Thr	Ala	Ile	Thr	Lys	Ser	Cys	Phe	Asn	Asn	Thr
	65			70					75					80	
Lys	Gly	Asp	Leu	Thr	Phe	Thr	Gly	Asn	Gly	Asn	Ser	Leu	Leu	Phe	Gln
		85						90					95		
Thr	Val	Asp	Ala	Gly	Thr	Val	Ala	Gly	Ala	Ala	Val	Asn	Ser	Ser	Val
		100					105						110		
Val	Asp	Lys	Ser	Thr	Thr	Phe	Ile	Gly	Phe	Ser	Ser	Leu	Ser	Phe	Ile
	115					120						125			

Ala Ser Pro Gly Ser Ser Ile Thr Thr Gly Lys Gly Ala Val Ser Cys
 130 135 140
 Ser Thr Gly Ser Leu Ser Leu Thr Lys Met Ser Val Cys Ser Ser Ala
 145 150 155 160
 Lys Thr Phe Gln Arg Ile Met Ala Val Leu Ser Pro Gln Lys Leu Phe
 165 170 175

His

<210>29

<211>597

<212>PRT

<213>Chlamydia pneumoniae

<400>29

Leu Glu Phe Asp Lys Asn Val Ser Leu Leu Phe Ser Lys Asn Phe Ser
 1 5 10 15
 Thr Asp Asn Gly Gly Ala Ile Thr Ala Lys Thr Leu Ser Leu Thr Gly
 20 25 30
 Thr Thr Met Ser Ala Leu Phe Ser Glu Asn Thr Ser Ser Lys Lys Gly
 35 40 45
 Gly Ala Ile Gln Thr Ser Asp Ala Leu Thr Ile Thr Gly Asn Gln Gly
 50 55 60
 Glu Val Ser Phe Ser Asp Asn Thr Ser Ser Asp Ser Gly Ala Ala Ile
 65 70 75 80
 Phe Thr Glu Ala Ser Val Thr Ile Ser Asn Asn Ala Lys Val Ser Phe
 85 90 95
 Ile Asp Asn Lys Val Thr Gly Ala Ser Ser Ser Thr Thr Gly Asp Met
 100 105 110
 Ser Gly Gly Ala Ile Cys Ala Tyr Lys Thr Ser Thr Asp Thr Lys Val
 115 120 125
 Thr Leu Thr Gly Asn Gln Met Leu Leu Phe Ser Asn Asn Thr Ser Thr
 130 135 140
 Thr Ala Gly Gly Ala Ile Tyr Val Lys Lys Leu Glu Leu Ala Ser Gly
 145 150 155 160
 Gly Leu Thr Leu Phe Ser Arg Asn Ser Val Asn Gly Gly Thr Ala Pro
 165 170 175
 Lys Gly Gly Ala Ile Ala Ile Glu Asp Ser Gly Glu Leu Ser Leu Ser
 180 185 190
 Ala Asp Ser Gly Asp Ile Val Phe Leu Gly Asn Thr Val Thr Ser Thr
 195 200 205
 Thr Pro Gly Thr Asn Arg Ser Ser Ile Asp Leu Gly Thr Ser Ala Lys
 210 215 220
 Met Thr Ala Leu Arg Ser Ala Ala Gly Arg Ala Ile Tyr Phe Tyr Asp
 225 230 235 240
 Pro Ile Thr Thr Gly Ser Ser Thr Thr Val Thr Asp Val Leu Lys Val
 245 250 255
 Asn Glu Thr Pro Ala Asp Ser Ala Leu Gln Tyr Thr Gly Asn Ile Ile
 260 265 270
 Phe Thr Gly Glu Lys Leu Ser Glu Thr Glu Ala Ala Asp Ser Lys Asn
 275 280 285
 Leu Thr Ser Lys Leu Leu Gln Pro Val Thr Leu Ser Gly Gly Thr Leu
 290 295 300
 Ser Leu Lys His Gly Val Thr Leu Gln Thr Gln Ala Phe Thr Gln Gln
 305 310 315 320
 Ala Asp Ser Arg Leu Glu Met Asp Val Gly Thr Thr Leu Glu Pro Ala
 325 330 335
 Asp Thr Ser Thr Ile Asn Asn Leu Val Ile Asn Ile Ser Ser Ile Asp
 340 345 350
 Gly Ala Lys Lys Ala Lys Ile Glu Thr Lys Ala Thr Ser Lys Asn Leu
 355 360 365
 Thr Leu Ser Gly Thr Ile Thr Leu Leu Asp Pro Thr Gly Thr Phe Tyr
 370 375 380
 Glu Asn His Ser Leu Arg Asn Pro Gln Ser Tyr Asp Ile Leu Glu Leu
 385 390 395 400
 Lys Ala Ser Gly Thr Val Thr Ser Thr Ala Val Thr Pro Asp Pro Il

				405					410					415		
Met	Gly	Glu	Lys	Phe	His	Tyr	Gly	Tyr	Gln	Gly	Thr	Trp	Gly	Pro	Ile	
				420				425					430			
Val	Trp	Gly	Thr	Gly	Ala	Ser	Thr	Thr	Ala	Thr	Phe	Asn	Trp	Thr	Lys	
		435					440					445				
Thr	Gly	Tyr	Ile	Pro	Asn	Pro	Glu	Arg	Ile	Gly	Ser	Leu	Val	Pro	Asn	
	450					455					460					
Ser	Leu	Trp	Asn	Ala	Phe	Ile	Asp	Ile	Ser	Ser	Leu	His	Tyr	Leu	Met	
465					470				475						480	
Glu	Thr	Ala	Asn	Glu	Gly	Leu	Gln	Gly	Asp	Arg	Ala	Phe	Trp	Cys	Ala	
			485					490						495		
Gly	Leu	Ser	Asn	Phe	Phe	His	Lys	Asp	Ser	Thr	Lys	Thr	Arg	Arg	Gly	
		500						505					510			
Phe	Arg	His	Leu	Ser	Gly	Gly	Tyr	Val	Ile	Gly	Gly	Asn	Leu	His	Thr	
	515						520					525				
Cys	Ser	Asp	Lys	Ile	Leu	Ser	Ala	Ala	Phe	Cys	Gln	Leu	Phe	Gly	Arg	
530						535					540					
Asp	Arg	Asp	Tyr	Phe	Val	Ala	Lys	Asn	Gln	Arg	Tyr	Ser	Leu	Arg	Arg	
545				550						555					560	
Asn	Ser	Leu	Leu	Pro	Ala	Gln	Arg	Asn	Leu	Tyr	Leu	Ser	Ser	Leu	Gln	
				565					570						575	
Thr	Thr	Ala	Leu	Phe	Val	Val	Leu	Cys	Ser	Tyr	Arg	Asp	Ser	Cys	Ser	
			580					585					590			
Leu	Phe	Arg	Lys	Pro												
			595													

<210>30

<211>230

<212>PRT

<213>Chlamydia pneumoniae

<400>30

Leu	Arg	Ile	Lys	Gly	Thr	Val	Tyr	Gly	Gly	Thr	Leu	Tyr	Tyr	Gln	His
1				5					10					15	
Asn	Glu	Thr	Tyr	Ile	Ser	Leu	Pro	Cys	Lys	Leu	Arg	Pro	Cys	Ser	Leu
			20					25					30		
Ser	Tyr	Val	Pro	Thr	Glu	Ile	Pro	Val	Leu	Phe	Ser	Gly	Asn	Leu	Ser
		35					40					45			
Tyr	Thr	His	Thr	Asp	Asn	Asp	Leu	Lys	Thr	Lys	Tyr	Thr	Thr	Tyr	Pro
	50					55					60				
Thr	Val	Lys	Gly	Ser	Trp	Gly	Asn	Asp	Ser	Phe	Ala	Leu	Glu	Phe	Gly
65					70					75					80
Gly	Arg	Ala	Pro	Ile	Cys	Leu	Asp	Glu	Ser	Ala	Leu	Phe	Glu	Gln	Tyr
				85				90						95	
Met	Pro	Phe	Met	Lys	Leu	Gln	Phe	Val	Tyr	Ala	His	Gln	Glu	Gly	Phe
			100					105					110		
Lys	Glu	Gln	Gly	Thr	Glu	Ala	Arg	Glu	Phe	Gly	Ser	Ser	Arg	Leu	Val
		115					120					125			
Asn	Leu	Ala	Leu	Pro	Ile	Gly	Ile	Arg	Phe	Asp	Lys	Glu	Ser	Asp	Cys
	130					135					140				
Gln	Asp	Ala	Thr	Tyr	Asn	Leu	Thr	Leu	Gly	Tyr	Thr	Val	Asp	Leu	Val
145					150					155					160
Arg	Ser	Asn	Pro	Asp	Cys	Thr	Thr	Thr	Leu	Arg	Ile	Ser	Gly	Asp	Ser
			165					170						175	
Trp	Lys	Thr	Phe	Gly	Thr	Asn	Leu	Ala	Arg	Gln	Ala	Leu	Val	Leu	Arg
		180						185					190		
Ala	Gly	Asn	His	Phe	Cys	Phe	Asn	Ser	Asn	Phe	Glu	Ala	Phe	Ser	Gln
	195						200					205			
Phe	Ser	Phe	Glu	Leu	Arg	Gly	Ser	Ser	Arg	Asn	Tyr	Asn	Val	Asp	Leu
	210					215						220			
Gly	Ala	Lys	Tyr	Gln	Phe										
225					230										

<210>31

<211>427

<212>PRT

<213>Chlamydia pneumoniae

<400>31

Met Arg Ser Ser Phe Ser Leu Leu Leu Ile Ser Ser Ser Leu Ala Phe
 1 5 10 15
 Pro Leu Leu Met Ser Val Ser Ala Asp Ala Ala Asp Leu Thr Leu Gly
 20 25 30
 Ser Arg Asp Ser Tyr Asn Gly Asp Thr Ser Thr Thr Glu Phe Thr Pro
 35 40 45
 Lys Ala Ala Thr Ser Asp Ala Ser Gly Thr Thr Tyr Ile Leu Asp Gly
 50 55 60
 Asp Val Ser Ile Ser Gln Ala Gly Lys Gln Thr Ser Leu Thr Thr Ser
 65 70 75 80
 Cys Phe Ser Asn Thr Ala Gly Asn Leu Thr Phe Leu Gly Asn Gly Phe
 85 90 95
 Ser Leu His Phe Asp Asn Ile Ile Ser Thr Val Ala Gly Val Val
 100 105 110
 Val Ser Asn Thr Ala Ala Ser Gly Ile Thr Lys Phe Ser Gly Phe Ser
 115 120 125
 Thr Leu Arg Met Leu Ala Ala Pro Arg Thr Thr Gly Lys Gly Ala Ile
 130 135 140
 Lys Ile Thr Asp Gly Leu Val Phe Glu Ser Ile Gly Asn Leu Asp Leu
 145 150 155 160
 Asn Glu Asn Ala Ser Ser Glu Asn Gly Gly Ala Ile Asn Thr Lys Thr
 165 170 175
 Leu Ser Leu Thr Gly Ser Thr Arg Phe Val Ala Phe Leu Gly Asn Ser
 180 185 190
 Ser Ser Gln Gln Gly Gly Ala Ile Tyr Ala Ser Gly Asp Ser Val Ile
 195 200 205
 Ser Glu Asn Ala Gly Ile Leu Ser Phe Gly Asn Asn Ser Ala Thr Thr
 210 215 220
 Ser Gly Gly Ala Ile Ser Ala Glu Gly Asn Leu Val Ile Ser Asn Asn
 225 230 235 240
 Gln Asn Ile Phe Phe Asp Gly Cys Lys Ala Thr Thr Asn Gly Gly Ala
 245 250 255
 Ile Asp Cys Asn Lys Ala Gly Ala Asn Pro Asp Pro Ile Leu Thr Leu
 260 265 270
 Ser Gly Asn Glu Ser Leu His Phe Leu Asn Asn Thr Ala Gly Asn Ser
 275 280 285
 Gly Gly Ala Ile Tyr Thr Lys Lys Leu Val Leu Ser Ser Gly Arg Gly
 290 295 300
 Gly Val Leu Phe Ser Asn Asn Lys Ala Ala Asn Ala Thr Pro Lys Gly
 305 310 315 320
 Gly Ala Ile Ala Ile Leu Asp Ser Gly Glu Ile Ser Ile Ser Ala Asp
 325 330 335
 Leu Gly Asn Ile Ile Phe Glu Gly Asn Thr Thr Ser Thr Thr Gly Ser
 340 345 350
 Pro Ala Ser Val Thr Arg Asn Ala Ile Asp Leu Ala Ser Asn Ala Lys
 355 360 365
 Phe Leu Asn Leu Arg Ala Thr Arg Gly Asn Lys Val Ile Phe Tyr Asp
 370 375 380
 Pro Ile Thr Ser Ser Gly Ala Thr Asp Lys Leu Ser Leu Asn Lys Ala
 385 390 395 400
 Asp Ala Gly Ser Gly Asn Thr Tyr Glu Gly Tyr Ile Val Phe Ser Gly
 405 410 415
 Glu Lys Leu Ser Glu Val Arg Asn Leu Thr Ile
 420 425

<210>32

<211>507

<212>PRT

<213>Chlamydia pneumoniae

<400>32

Arg Leu His Arg Phe Leu Trp Arg Glu Thr Leu Arg Ser Lys Lys Pro
 1 5 10 15
 Asp Asn Leu Lys Ser Thr Phe Thr Gln Ala Val Glu Leu Ala Ala Gly
 20 25 30

Ala	Leu	Val	Leu	Lys	Asp	Gly	Val	Thr	Val	Val	Ala	Asn	Thr	Ile	Thr
	35						40					45			
Gln	Val	Glu	Gly	Ser	Lys	Val	Val	Met	Asp	Gly	Gly	Thr	Thr	Phe	Glu
	50					55					60				
Ala	Ser	Ala	Glu	Gly	Val	Thr	Leu	Asn	Gly	Leu	Ala	Ile	Asn	Ile	Asp
	65				70				75						80
Ser	Leu	Asp	Gly	Thr	Asn	Lys	Ala	Ile	Ile	Lys	Ala	Thr	Ala	Ala	Ser
				85					90					95	
Lys	Asp	Val	Ala	Leu	Ser	Gly	Pro	Ile	Met	Leu	Val	Asp	Ala	Gln	Gly
			100					105					110		
Asn	Tyr	Tyr	Glu	His	His	Asn	Leu	Ser	Gln	Gln	Gln	Val	Phe	Ala	Leu
	115						120					125			
Ile	Glu	Leu	Ser	Ala	Gln	Gly	Thr	Met	Thr	Thr	Thr	Asp	Ile	Pro	Asp
	130					135						140			
Thr	Pro	Ile	Leu	Asn	Thr	Thr	Asn	His	Tyr	Gly	Ile	Lys	Gly	Thr	Gly
	145				150					155					160
Ile	Ile	Val	Trp	Val	Asp	Asp	Ala	Thr	Ala	Lys	Thr	Lys	Asn	Ala	Thr
			165						170					175	
Leu	Thr	Trp	Thr	Lys	Thr	Gly	Tyr	Lys	Pro	Asn	Pro	Glu	Arg	Gln	Gly
			180					185					190		
Pro	Leu	Val	Pro	Asn	Ser	Leu	Trp	Gly	Ser	Phe	Val	Asp	Val	Arg	Ser
	195						200					205			
Ile	Gln	Ser	Leu	Met	Asp	Arg	Ser	Thr	Ser	Ser	Leu	Ser	Ser	Ser	Thr
	210					215					220				
Asn	Leu	Trp	Val	Ser	Gly	Ile	Ala	Asp	Phe	Leu	His	Glu	Asp	Gln	Lys
	225				230					235					240
Gly	Asn	Gln	Arg	Ser	Tyr	Arg	His	Ser	Ser	Ala	Gly	Tyr	Ala	Leu	Gly
			245						250					255	
Gly	Gly	Phe	Phe	Thr	Ala	Ser	Glu	Asn	Phe	Phe	Asn	Phe	Ala	Phe	Cys
			260						265				270		
Gln	Leu	Phe	Gly	Tyr	Asp	Lys	Asp	His	Leu	Val	Ala	Lys	Asn	His	Thr
	275					280						285			
His	Val	Tyr	Ala	Gly	Ala	Met	Ser	Tyr	Arg	His	Leu	Gly	Glu	Ser	Lys
	290					295					300				
Thr	Leu	Ala	Lys	Ile	Leu	Ser	Gly	Asn	Ser	Asp	Ser	Leu	Pro	Phe	Val
	305				310					315					320
Phe	Asn	Ala	Arg	Phe	Ala	Tyr	Gly	His	Thr	Asp	Asn	Asn	Met	Thr	Thr
			325						330					335	
Lys	Tyr	Thr	Gly	Tyr	Ser	Pro	Val	Lys	Gly	Ser	Trp	Gly	Asn	Asp	Ala
			340					345					350		
Phe	Gly	Ile	Glu	Cys	Gly	Gly	Ala	Ile	Pro	Val	Val	Ala	Ser	Gly	Arg
	355						360					365			
Arg	Ser	Trp	Val	Asp	Thr	His	Thr	Pro	Phe	Leu	Asn	Leu	Glu	Met	Ile
	370					375					380				
Tyr	Ala	His	Gln	Asn	Asp	Phe	Lys	Glu	Asn	Gly	Thr	Glu	Gly	Arg	Ser
	385				390					395					400
Phe	Gln	Ser	Glu	Asp	Leu	Phe	Asn	Leu	Ala	Val	Pro	Val	Gly	Ile	Lys
			405						410					415	
Phe	Glu	Lys	Phe	Ser	Asp	Lys	Ser	Thr	Tyr	Asp	Leu	Ser	Ile	Ala	Tyr
			420					425					430		
Val	Pro	Asp	Val	Ile	Arg	Asn	Asp	Pro	Gly	Cys	Thr	Thr	Thr	Leu	Met
	435						440					445			
Val	Ser	Gly	Asp	Ser	Trp	Ser	Thr	Cys	Gly	Thr	Ser	Leu	Ser	Arg	Gln
	450					455					460				
Ala	Leu	Leu	Val	Arg	Ala	Gly	Asn	His	His	Ala	Phe	Ala	Ser	Asn	Phe
	465				470					475					480
Glu	Val	Phe	Ser	Gln	Phe	Glu	Val	Glu	Leu	Arg	Gly	Ser	Ser	Arg	Ser
			485						490					495	
Tyr	Ala	Ile	Asp	Leu	Gly	Gly	Arg	Phe	Gly	Phe					
			500					505							

<210>33

<211>494

<212>PRT

<213>Chlamydia pneumoniae

<400>33

Met Lys Thr Ser Val Ser Met Leu Leu Ala Leu Leu Cys Ser Gly Ala
 1 5 10 15
 Ser Ser Ile Val Leu His Ala Ala Thr Thr Pro Leu Asn Pro Glu Asp
 20 25 30
 Gly Phe Ile Gly Glu Gly Asn Thr Asn Thr Phe Ser Pro Lys Ser Thr
 35 40 45
 Thr Asp Ala Ala Gly Thr Thr Tyr Ser Leu Thr Gly Glu Val Leu Tyr
 50 55 60
 Ile Asp Pro Gly Lys Gly Gly Ser Ile Thr Gly Thr Cys Phe Val Glu
 65 70 75 80
 Thr Ala Gly Asp Leu Thr Phe Leu Gly Asn Gly Asn Thr Leu Lys Phe
 85 90 95
 Leu Ser Val Asp Ala Gly Ala Asn Ile Ala Val Ala His Val Gln Gly
 100 105 110
 Ser Lys Asn Leu Ser Phe Thr Asp Phe Leu Ser Leu Val Ile Thr Glu
 115 120 125
 Ser Pro Lys Ser Ala Val Thr Thr Gly Lys Gly Ser Leu Val Ser Leu
 130 135 140
 Gly Ala Val Gln Leu Gln Asp Ile Asn Thr Leu Val Leu Thr Ser Asn
 145 150 155 160
 Ala Ser Val Glu Asp Gly Gly Val Ile Lys Gly Asn Ser Cys Leu Ile
 165 170 175
 Gln Gly Ile Lys Asn Ser Ala Ile Phe Gly Gln Asn Thr Ser Ser Lys
 180 185 190
 Lys Gly Gly Ala Ile Ser Thr Thr Gln Gly Leu Thr Ile Glu Asn Asn
 195 200 205
 Leu Gly Thr Leu Lys Phe Asn Glu Asn Lys Ala Val Thr Ser Gly Gly
 210 215 220
 Ala Leu Asp Leu Gly Ala Ala Ser Thr Phe Thr Ala Asn His Glu Leu
 225 230 235 240
 Ile Phe Ser Gln Asn Lys Thr Ser Gly Asn Ala Ala Asn Gly Gly Ala
 245 250 255
 Ile Asn Cys Ser Gly Asp Leu Thr Phe Thr Asp Asn Thr Ser Leu Leu
 260 265 270
 Leu Gln Glu Asn Ser Thr Met Gln Asp Gly Gly Ala Leu Cys Ser Thr
 275 280 285
 Gly Thr Ile Ser Ile Thr Gly Ser Asp Ser Ile Asn Val Ile Gly Asn
 290 295 300
 Thr Ser Gly Gln Lys Gly Gly Ala Ile Ser Ala Ala Ser Leu Lys Ile
 305 310 315 320
 Leu Gly Gly Gln Gly Gly Ala Leu Phe Ser Asn Asn Val Val Thr His
 325 330 335
 Ala Thr Pro Leu Gly Gly Ala Ile Phe Ile Asn Thr Gly Gly Ser Leu
 340 345 350
 Gln Leu Phe Thr Gln Gly Gly Asp Ile Val Phe Glu Gly Asn Gln Val
 355 360 365
 Thr Thr Thr Ala Pro Asn Ala Thr Thr Lys Arg Asn Val Ile His Leu
 370 375 380
 Glu Ser Thr Ala Lys Trp Thr Gly Leu Ala Ala Ser Gln Gly Asn Ala
 385 390 395 400
 Ile Tyr Phe Tyr Asp Pro Ile Thr Thr Asn Asp Thr Gly Ala Ser Asp
 405 410 415
 Asn Leu Arg Ile Asn Glu Val Ser Ala Asn Gln Lys Leu Ser Gly Ser
 420 425 430
 Ile Val Phe Ser Gly Glu Arg Leu Ser Thr Ala Glu Ala Ile Ala Glu
 435 440 445
 Asn Leu Thr Ser Arg Ile Asn Gln Pro Val Thr Leu Val Glu Gly Ser
 450 455 460
 Leu Val Leu Lys Gln Gly Val Thr Leu Ile Thr Gln Gly Phe Ser Gln
 465 470 475 480
 Glu Pro Glu Ser Thr Leu Leu Leu Asp Leu Gly Thr Ser Leu
 485 490

<210>34

<211>86

<212>PRT

<213>Chlamydia pneumoniae

<400>34

Met Val Ser Ala Phe Ile Asp Lys Phe Val Met Thr Ile Ser Ser Val
1 5 10 15
Glu Ala Tyr Asn Glu Val Pro Arg Ser Lys Arg Ser Val Asp Ser Gly
20 25 30
Ser Cys Glu Asn Pro Cys Val Ile Lys Val Thr Pro Cys Leu Ser Thr
35 40 45
Lys Leu Pro Ser Thr Lys Val Thr Gly Trp Leu Ile Leu Glu Val Arg
50 55 60
Phe Ser Ala Ile Ala Ser Ala Val Asp Asn Leu Ser Pro Glu Asn Thr
65 70 75 80
Ile Asp Pro Glu Ser Phe
85

<210>35

<211>450

<212>PRT

<213>Chlamydia pneumoniae

<400>35

Ala Ser Thr Glu Asp Ile Val Ile Thr Asn Leu Ser Ile Asn Ala Asp
1 5 10 15
Thr Ile Tyr Gly Lys Asn Pro Ile Asn Ile Val Ala Ser Ala Ala Asn
20 25 30
Lys Asn Ile Thr Leu Thr Gly Thr Leu Ala Leu Val Asn Ala Asp Gly
35 40 45
Ala Phe Tyr Glu Asn His Thr Leu Gln Asp Ser Gln Asp Tyr Ser Phe
50 55 60
Val Lys Leu Ser Pro Gly Ala Gly Gly Thr Ile Ile Thr Gln Asp Ala
65 70 75 80
Ser Gln Lys Pro Leu Glu Val Ala Pro Ser Arg Pro His Tyr Gly Tyr
85 90 95
Gln Gly His Trp Asn Val Gln Val Ile Pro Gly Thr Gly Thr Gln Pro
100 105 110
Ser Gln Ala Asn Leu Glu Trp Val Arg Thr Gly Tyr Leu Pro Asn Pro
115 120 125
Glu Arg Gln Gly Ser Leu Val Pro Asn Ser Leu Trp Gly Ser Phe Val
130 135 140
Asp Gln Arg Ala Ile Gln Glu Ile Met Val Asn Ser Ser Gln Ile Leu
145 150 155 160
Cys Gln Glu Arg Gly Val Trp Gly Ala Gly Ile Ala Asn Phe Leu His
165 170 175
Arg Asp Lys Ile Asn Glu His Arg Tyr Arg His Ser Gly Val Gly Tyr
180 185 190
Leu Val Gly Val Gly Thr His Ala Phe Ser Asp Ala Thr Ile Asn Ala
195 200 205
Ala Phe Cys Gln Leu Phe Ser Arg Asp Lys Asp Tyr Val Val Ser Lys
210 215 220
Asn His Gly Thr Ser Tyr Ser Gly Val Val Phe Leu Glu Asp Thr Leu
225 230 235 240
Glu Phe Arg Ser Pro Gln Gly Phe Tyr Thr Asp Ser Ser Ser Glu Ala
245 250 255
Cys Cys Asn Gln Val Val Thr Ile Asp Met Gln Leu Ser Tyr Ser His
260 265 270
Arg Asn Asn Asp Met Lys Thr Lys Tyr Thr Thr Tyr Pro Glu Ala Gln
275 280 285
Gly Ser Trp Ala Asn Asp Val Phe Gly Leu Glu Phe Gly Ala Thr Thr
290 295 300
Tyr Tyr Tyr Pro Asn Ser Thr Phe Leu Phe Asp Tyr Tyr Ser Pro Phe
305 310 315 320
Leu Arg Leu Gln Cys Thr Tyr Ala His Gln Glu Asp Phe Lys Glu Thr
325 330 335
Gly Gly Glu Val Arg His Phe Thr Ser Gly Asp Leu Phe Asn Leu Ala

340 345 350
 Val Pro Ile Gly Val Lys Phe Glu Arg Phe Ser Asp Cys Lys Arg Gly
 355 360 365
 Ser Tyr Glu Leu Thr Phe Ala Tyr Val Pro Asp Val Ile Arg Lys Asp
 370 375 380
 Pro Lys Ser Thr Ala Thr Leu Ala Ser Gly Ala Thr Trp Ser Thr His
 385 390 395 400
 Gly Asn Asn Leu Ser Arg Gln Gly Leu Gln Leu Arg Leu Gly Asn His
 405 410 415
 Cys Leu Ile Asn Pro Gly Ile Glu Val Phe Ser His Gly Ala Ile Glu
 420 425 430
 Leu Arg Gly Ser Ser Arg Asn Tyr Asn Ile Asn Leu Gly Gly Lys Tyr
 435 440 445
 Arg Phe
 450
 <210>36
 <211>661
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>36
 Lys Leu Trp Ser Asp Pro Asn Leu Arg Leu Met Lys Arg Cys Phe Leu
 1 5 10 15
 Phe Leu Ala Ser Phe Val Leu Met Gly Ser Ser Ala Asp Ala Leu Thr
 20 25 30
 His Gln Glu Ala Val Lys Lys Lys Asn Ser Tyr Leu Ser His Phe Lys
 35 40 45
 Ser Val Ser Gly Ile Val Thr Ile Glu Asp Gly Val Leu Asn Ile His
 50 55 60
 Asn Asn Leu Arg Ile Gln Ala Asn Lys Val Tyr Val Glu Asn Thr Val
 65 70 75 80
 Gly Gln Ser Leu Lys Leu Val Ala His Gly Asn Val Met Val Asn Tyr
 85 90 95
 Arg Ala Lys Thr Leu Val Cys Asp Tyr Leu Glu Tyr Tyr Glu Asp Thr
 100 105 110
 Asp Ser Cys Leu Leu Thr Asn Gly Arg Phe Ala Met Tyr Pro Trp Phe
 115 120 125
 Leu Gly Gly Ser Met Ile Thr Leu Thr Pro Glu Thr Ile Val Ile Arg
 130 135 140
 Lys Gly Tyr Ile Ser Thr Ser Glu Gly Pro Lys Lys Asp Leu Cys Leu
 145 150 155 160
 Ser Gly Asp Tyr Leu Glu Tyr Ser Ser Asp Ser Leu Leu Ser Ile Gly
 165 170 175
 Lys Thr Thr Leu Arg Val Cys Arg Ile Pro Ile Leu Phe Leu Pro Pro
 180 185 190
 Phe Ser Ile Met Pro Met Glu Ile Pro Lys Pro Pro Ile Asn Phe Arg
 195 200 205
 Gly Gly Thr Gly Gly Phe Leu Gly Ser Tyr Leu Gly Met Ser Tyr Ser
 210 215 220
 Pro Ile Ser Arg Lys His Phe Ser Ser Thr Phe Phe Leu Asp Ser Phe
 225 230 235 240
 Phe Lys His Gly Val Gly Met Gly Phe Asn Leu His Cys Ser Gln Lys
 245 250 255
 Gln Val Pro Glu Asn Val Phe Asn Met Lys Ser Tyr Tyr Ala His Arg
 260 265 270
 Leu Ala Ile Asp Met Ala Glu Ala His Asp Arg Tyr Arg Leu His Gly
 275 280 285
 Asp Phe Cys Phe Thr His Lys His Val Asn Phe Ser Gly Glu Tyr His
 290 295 300
 Leu Ser Asp Ser Trp Glu Thr Val Ala Asp Ile Phe Pro Asn Asn Phe
 305 310 315 320
 Met Leu Lys Asn Thr Gly Pro Thr Arg Val Asp Cys Thr Trp Asn Asp
 325 330 335
 Asn Tyr Phe Glu Gly Tyr Leu Thr Ser Ser Val Lys Val Asn Ser Phe
 340 345 350

Gln Asn Ala Asn Gln Glu Leu Pro Tyr Leu Thr Leu Arg Gln Tyr Pro
 355 360 365
 Ile Ser Ile Tyr Asn Thr Gly Val Tyr Leu Glu Asn Ile Val Glu Cys
 370 375 380
 Gly Tyr Leu Asn Phe Ala Phe Ser Asp His Ile Val Gly Glu Asn Phe
 385 390 395 400
 Ser Ser Leu Arg Leu Ala Ala Arg Pro Lys Leu His Lys Thr Val Pro
 405 410 415
 Leu Pro Ile Gly Thr Leu Ser Ser Thr Leu Gly Ser Ser Leu Ile Tyr
 420 425 430
 Tyr Ser Asp Val Pro Glu Ile Ser Ser Arg His Ser Gln Leu Ser Ala
 435 440 445
 Lys Leu Gln Leu Asp Tyr Arg Phe Leu Leu His Lys Ser Tyr Ile Gln
 450 455 460
 Arg Arg His Ile Ile Glu Pro Phe Val Thr Phe Ile Thr Glu Thr Arg
 465 470 475 480
 Pro Leu Ala Lys Asn Glu Asp His Tyr Ile Phe Ser Ile Gln Asp Ala
 485 490 495
 Phe His Ser Leu Asn Leu Leu Lys Ala Gly Ile Asp Thr Ser Val Leu
 500 505 510
 Ser Lys Thr Asn Pro Arg Phe Pro Arg Ile His Ala Lys Leu Trp Thr
 515 520 525
 Thr His Ile Leu Ser Asn Thr Glu Ser Lys Pro Thr Phe Pro Lys Thr
 530 535 540
 Ala Cys Glu Leu Ser Leu Pro Phe Gly Lys Lys Asn Thr Val Ser Leu
 545 550 555 560
 Asp Ala Glu Trp Ile Trp Lys Lys His Cys Trp Asp His Met Asn Ile
 565 570 575
 Arg Trp Glu Trp Ile Gly Asn Asp Asn Val Ala Met Thr Leu Glu Ser
 580 585 590
 Leu His Arg Ser Lys Tyr Ser Leu Ile Lys Cys Asp Arg Glu Asn Phe
 595 600 605
 Ile Leu Asp Val Ser Arg Pro Ile Asp Gln Leu Leu Asp Ser Pro Leu
 610 615 620
 Ser Asp His Arg Asn Leu Ile Leu Gly Lys Leu Phe Val Arg Pro His
 625 630 635 640
 Pro Cys Trp Asn Tyr Arg Leu Ser Leu Arg Tyr Gly Trp His Arg Arg
 645 650 655
 Thr Leu Arg Thr Thr
 660

<210>37

<211>245

<212>PRT

<213>Chlamydia pneumoniae

<400>37

Glu Gln Arg Ser Lys Leu Asn Val Ala Leu Ala Leu Leu Glu Leu Gly
 1 5 10 15
 Cys Asp Thr Pro Lys Leu Leu Glu Tyr Ile Thr Glu Arg Leu Val Gln
 20 25 30
 Pro His Tyr Asn Glu Thr Leu Ala Leu Ser Phe Ser Lys Gly Arg Thr
 35 40 45
 Leu Gln Asn Trp Lys Arg Val Asn Ile Ile Val Pro Gln Asp Pro Gln
 50 55 60
 Glu Arg Glu Arg Leu Leu Ser Thr Thr Arg Gly Leu Glu Glu Gln Ile
 65 70 75 80
 Leu Thr Phe Leu Phe Arg Leu Pro Lys Glu Ala Tyr Leu Pro Cys Ile
 85 90 95
 Tyr Lys Leu Leu Ala Ser Gln Lys Thr Gln Leu Ala Thr Thr Ala Ile
 100 105 110
 Ser Phe Leu Ser His Thr Ser His Gln Glu Ala Leu Asp Leu Leu Phe
 115 120 125
 Gln Ala Ala Lys Leu Pro Gly Glu Pro Ile Ile Arg Ala Tyr Ala Asp
 130 135 140
 Leu Ala Ile Tyr Asn Leu Thr Lys Asp Pro Glu Lys Lys Arg Ser Leu

145 150 155 160
 His Asp Tyr Ala Lys Lys Leu Ile Gln Glu Thr Leu Leu Phe Val Asp
 165 170 175
 Thr Glu Asn Gln Arg Pro His Pro Ser Met Pro Tyr Leu Arg Tyr Gln
 180 185 190
 Val Thr Pro Glu Ser Arg Thr Lys Leu Met Leu Asp Ile Leu Glu Thr
 195 200 205
 Leu Ala Thr Ser Lys Ser Ser Glu Asp Ile Arg Leu Leu Ile Gln Leu
 210 215 220
 Met Thr Glu Gly Asp Ala Lys Asn Phe Pro Val Leu Ala Gly Leu Leu
 225 230 235 240
 Ile Lys Ile Val Glu
 245

<210>38

<211>348

<212>PRT

<213>Chlamydia pneumoniae

<400>38

Cys Ser Arg Ser Pro Tyr Pro Asn Ile Glu Ile Leu Ala Arg Gly Val
 1 5 10 15
 Glu His Arg Ser Met Gly Leu Phe His Leu Thr Leu Phe Gly Leu Leu
 20 25 30
 Leu Cys Ser Leu Pro Ile Ser Leu Val Ala Lys Phe Pro Glu Ser Val
 35 40 45
 Gly His Lys Ile Leu Tyr Ile Ser Thr Gln Ser Thr Gln Gln Ala Leu
 50 55 60
 Ala Thr Tyr Leu Glu Ala Leu Asp Ala Tyr Gly Asp His Asp Phe Phe
 65 70 75 80
 Val Leu Arg Lys Ile Gly Glu Asp Tyr Leu Lys Gln Ser Ile His Ser
 85 90 95
 Ser Asp Pro Gln Thr Arg Lys Ser Thr Ile Ile Gly Ala Gly Leu Ala
 100 105 110
 Gly Ser Ser Glu Ala Leu Asp Val Leu Ser Gln Ala Met Glu Thr Ala
 115 120 125
 Asp Pro Leu Gln Gln Leu Leu Val Leu Ser Ala Val Ser Gly His Leu
 130 135 140
 Gly Lys Thr Ser Asp Asp Leu Leu Phe Lys Ala Leu Ala Ser Pro Tyr
 145 150 155 160
 Pro Val Ile Arg Leu Glu Ala Ala Tyr Arg Leu Ala Asn Leu Lys Asn
 165 170 175
 Thr Lys Val Ile Asp His Leu His Ser Phe Ile His Lys Leu Pro Glu
 180 185 190
 Glu Ile Gln Cys Leu Ser Ala Ala Ile Phe Leu Arg Leu Glu Thr Glu
 195 200 205
 Glu Ser Asp Ala Tyr Ile Arg Asp Leu Leu Ala Ala Lys Lys Ser Ala
 210 215 220
 Ile Arg Ser Ala Thr Ala Leu Gln Ile Gly Glu Tyr Gln Gln Lys Arg
 225 230 235 240
 Phe Leu Pro Thr Leu Arg Asn Leu Leu Thr Ser Ala Ser Pro Gln Asp
 245 250 255
 Gln Glu Ala Ile Leu Tyr Ala Leu Gly Lys Leu Lys Asp Gly Gln Ser
 260 265 270
 Tyr Tyr Asn Ile Lys Lys Gln Leu Gln Lys Pro Asp Val Asp Val Thr
 275 280 285
 Leu Ala Ala Ala Gln Ala Leu Ile Ala Leu Gly Lys Glu Glu Asp Ala
 290 295 300
 Leu Pro Val Ile Lys Lys Gln Ala Leu Glu Glu Arg Pro Arg Ala Leu
 305 310 315 320
 Tyr Ala Leu Arg His Leu Pro Ser Glu Ile Gly Ile Pro Ile Ala Leu
 325 330 335
 Pro Ile Phe Leu Lys Thr Lys Asn Ser Glu Ala Ser
 340 345

<210>39

<211>196

<212>PRT

<213>Chlamydia pneumoniae

<400>39

Met Ser Leu Pro Leu Val Leu Gly Ser Ser Ser Pro Arg Arg Lys Phe
 1 5 10 15
 Ile Leu Glu Lys Phe Arg Val Pro Phe Thr Val Ile Pro Ser Asn Phe
 20 25 30
 Asp Glu Ser Lys Val Ser Tyr Ser Gly Asp Pro Ile Ala Tyr Thr Gln
 35 40 45
 Glu Leu Ala Ala Gln Lys Ala Tyr Ala Val Ser Glu Leu His Ser Pro
 50 55 60
 Cys Asp Cys Ile Ile Leu Thr Gly Asp Thr Ile Val Ser Tyr Asp Gly
 65 70 75 80
 Arg Ile Phe Thr Lys Pro Gln Xaa Lys Ala Xaa Ala Ile Gln Met Leu
 85 90 95
 Lys Thr Leu Arg Asn Gln Thr His Asp Val Val Thr Ser Ile Ala Val
 100 105 110
 Leu His Lys Gly Lys Leu Leu Thr Gly Ser Glu Thr Ser Gln Ile Ser
 115 120 125
 Leu Thr Met Ile Pro Asp His Arg Ile Glu Ser Tyr Ile Asp Thr Val
 130 135 140
 Gly Thr Leu Asn Asn Cys Gly Ala Tyr Asp Val Cys His Gly Gly Leu
 145 150 155 160
 Ile Leu Lys Lys Val His Gly Cys Val Tyr Asn Val Gln Gly Leu Pro
 165 170 175
 Ile Gln Thr Leu Lys Tyr Leu Leu Glu Leu Asn Ile Asp Leu Trp
 180 185 190
 Asp Tyr Ser Ile
 195

<210>40

<211>127

<212>PRT

<213>Chlamydia pneumoniae

<400>40

Val Xaa Arg Asn Arg Lys Thr Gly Ile Asn Asp Gln Glu Ile Arg Ser
 1 5 10 15
 Val Leu Gly Lys Met Leu Phe Gly Gly Asp Asp Ala Phe Lys Gln Ile
 20 25 30
 Gln Ala Leu Ser Gly Gly Glu Thr Ala Arg Leu Leu Met Ala Gly Met
 35 40 45
 Met Leu Glu Asn His Asn Val Leu Ile Leu Asp Glu Ala Asn Asn His
 50 55 60
 Leu Asp Leu Glu Ser Val Ser Ala Leu Ser Trp Ala Ile Asn Asp Tyr
 65 70 75 80
 Lys Gly Thr Ala Ile Phe Val Ser His Asp Arg Gly Leu Ile Gln Asp
 85 90 95
 Cys Ala Thr Lys Leu Leu Ile Phe Asp Lys Asp Lys Ile Thr Phe Phe
 100 105 110
 Asp Gly Thr Met Val Asp Tyr Thr Ala Gly His Lys Gln Leu Leu
 115 120 125

<210>41

<211>432

<212>PRT

<213>Chlamydia pneumoniae

<400>41

Leu Tyr Ser Lys Gln His Phe Val Met Leu Ser Ala Met Ser Ile Val
 1 5 10 15
 Leu Asp Lys Ile Gly Lys Ser Leu Gly Thr Arg Ile Leu Phe Asp Asp
 20 25 30
 Val Ser Val Val Phe Asn Pro Gly Asn Cys Tyr Gly Leu Thr Gly Pro
 35 40 45
 Asn Gly Ala Gly Lys Ser Thr Leu Leu Lys Ile Ile Met Gly Met Ile
 50 55 60
 Glu Pro Thr Arg Gly Ser Ile Ser Leu Pro Lys Lys Val Gly Ile Leu

65	70	75	80
Arg Gln Asn Ile Asp Ser Phe His Asp Thr Thr Val Leu Asp Cys Val			
	85	90	95
Ile Met Gly Asn Thr Arg Leu Trp Glu Ala Leu Gln Arg Arg Asp Asn			
	100	105	110
Leu Tyr Leu Gln Glu Phe Thr Asp Ala Ile Gly Met Glu Leu Gly Glu			
	115	120	125
Ile Glu Glu Ile Ile Gly Glu Glu Asn Gly Tyr Arg Ala Asp Ser Glu			
	130	135	140
Ala Glu Glu Leu Leu Thr Gly Ile Gly Ile Pro Asn Glu Met Phe Asp			
145	150	155	160
Lys Lys Met Ala Met Ile Pro Ile Asp Leu Gln Phe Arg Val Leu Leu			
	165	170	175
Cys Gln Ala Leu Phe Gly His Pro Glu Ala Leu Leu Leu Asp Glu Pro			
	180	185	190
Thr Asn His Leu Asp Leu Tyr Ser Ile Asn Trp Leu Gly Asn Phe Leu			
	195	200	205
Lys Asp Tyr Glu Gly Thr Val Ile Val Val Ser His Asp Arg His Phe			
210	215	220	
Leu Asn Thr Ile Thr Thr His Ile Ala Asp Ile Asp Tyr Asp Thr Ile			
225	230	235	240
Ile Ile Tyr Pro Gly Asn Tyr Asp Asp Met Val Glu Met Lys Thr Ala			
	245	250	255
Ser Arg Glu Gln Glu Lys Ala Asp Ile Lys Ser Lys Glu Lys Lys Ile			
	260	265	270
Ser Gln Leu Lys Glu Phe Val Ala Lys Phe Gly Ala Gly Ser Arg Ala			
	275	280	285
Ser Gln Val Gln Ser Arg Leu Arg Glu Ile Lys Lys Leu Gln Pro Gln			
	290	295	300
Glu Leu Lys Lys Ser Asn Ile Gln Arg Pro Tyr Ile Arg Phe Pro Leu			
305	310	315	320
Ser Asp Lys Ser Ser Gly Lys Val Val Leu Ser Leu Glu Ala Ile Thr			
	325	330	335
Lys Asp Tyr Gly Asp His Gln Val Ile His Pro Phe Ser Leu Glu Ile			
	340	345	350
Tyr Gln Gly Asp Lys Leu Gly Ile Ile Gly Asn Asn Gly Leu Gly Lys			
	355	360	365
Thr Thr Leu Met Lys Leu Leu Ala Gly Val Glu Ala Pro Ser Ser Gly			
	370	375	380
Ser Ile Lys Leu Gly His Gln Ala Ile Cys Ser Tyr Phe Pro Gln Asn			
385	390	395	400
His Ser Asp Val Leu Ala Asp Cys Gly Gln Glu Thr Leu Phe Glu Xaa			
	405	410	415
Tyr Ala Ile Ala Lys Pro Glu Leu Thr Ile Lys Lys Ser Ala Val Cys			
	420	425	430

<210>42

<211>131

<212>PRT

<213>Chlamydia pneumoniae

<400>42

Arg Glu Val Met Ile Ala Ser Ile Tyr Ser Phe Leu Asp Tyr Leu Lys			
1	5	10	15
Met Val Lys Ser Ala Ser Pro His Thr Leu Arg Asn Tyr Cys Leu Asp			
	20	25	30
Leu Asn Gly Leu Lys Ile Phe Leu Xaa Glu Arg Gly Asn Leu Ala Pro			
	35	40	45
Ser Ser Pro Leu Gln Leu Ala Thr Glu Lys Arg Lys Val Ser Glu Leu			
	50	55	60
Pro Phe Ser Leu Phe Thr Lys Glu His Val Arg Met Tyr Ile Ala Lys			
65	70	75	80
Leu Ile Glu Asn Gly Lys Ala Lys Arg Thr Ile Lys Arg Cys Leu Ser			
	85	90	95
Ser Ile Lys Ser Phe Ala His Tyr Cys Val Ile Gln Lys Ile Leu Leu			
	100	105	110

Glu Asn Leu Arg Lys Leu Ser Thr Asp Leu Val Phe Leu Arg Ser Cys
115 120 125

Leu Pro Arg
130

<210>43

<211>307

<212>PRT

<213>Chlamydia pneumonia

<400>43

Met Ser Ser Arg Glu Leu Ile Ile Leu Gly Cys Ser Ser Gln Gln Pro
1 5 10 15
Thr Arg Thr Arg Asn Gln Gly Ala Tyr Leu Phe Arg Trp Asn Gly Glu
20 25 30
Gly Leu Leu Phe Asp Pro Gly Gln Gly Thr Gln Arg Gln Phe Ile Phe
35 40 45
Ala Asn Ile Ala Pro Thr Thr Val Asn Arg Ile Phe Val Ser His Phe
50 55 60
His Gly Asp His Cys Leu Gly Leu Gly Ser Met Leu Met Arg Leu Asn
65 70 75 80
Leu Asp Lys Val Ser His Pro Ile His Cys Tyr Tyr Pro Ala Ser Gly
85 90 95
Lys Lys Tyr Phe Asp Arg Leu Arg Tyr Gly Thr Ile Tyr His Glu Thr
100 105 110
Ile Gln Val Val Glu His Pro Ile Ser Glu Glu Gly Ile Val Glu Asp
115 120 125
Phe Gly Ser Phe Arg Ile Glu Ala Gln Arg Leu Gln His Gln Val Asp
130 135 140
Thr Leu Gly Trp Arg Ile Thr Glu Pro Asp Thr Ile Lys Phe Leu Pro
145 150 155 160
Lys Glu Leu Glu Ser Arg Gly Ile Arg Gly Leu Ile Ile Gln Asp Leu
165 170 175
Ile Arg Asp Gln Glu Ile Ser Ile Gly Gly Ser Thr Val Tyr Leu Ser
180 185 190
Asp Val Ser Tyr Val Arg Lys Gly Asp Ser Ile Ala Ile Ile Ala Asp
195 200 205
Thr Leu Pro Cys Gln Ala Ala Ile Asp Leu Ala Lys Asn Ser Cys Met
210 215 220
Met Leu Cys Glu Ser Thr Tyr Leu Glu Gln His Arg His Leu Ala Glu
225 230 235 240
Ser His Phe His Met Thr Ala Lys Gln Ala Ala Thr Leu Ala Lys Arg
245 250 255
Ala Ala Thr Gln Lys Leu Ile Leu Thr His Phe Ser Ala Arg Tyr Leu
260 265 270
Asn Leu Asp Asp Phe Tyr Lys Glu Ala Ser Ala Val Phe Pro Asn Val
275 280 285
Ser Val Ala Gln Glu Tyr Arg Ser Tyr Pro Phe Pro Lys Asn Pro Leu
290 295 300

Leu Asn Lys

305

<210>44

<211>440

<212>PRT

<213>Chlamydia pneumoniae

<400>44

Ala Phe Gln Arg Ile Lys Arg Lys Tyr His Leu Ser Cys Arg Pro Ser
1 5 10 15
Arg Ser Trp Glu Asn Lys His Arg Ala His Ile Ala Lys Val Leu His
20 25 30
Arg Lys Phe Phe Arg Phe Ser Val Gly Gly Met Arg Asp Glu Ala Glu
35 40 45
Ile Lys Gly His Arg Arg Thr Tyr Ile Gly Ala Met Pro Gly Lys Met
50 55 60
Val Gln Ala Leu Lys Gln Ser Gln Ala Met Asn Pro Val Ile Met Ile
65 70 75 80

Asp Glu Val Asp Lys Ile Gly Ala Ser Tyr His Gly Asp Pro Ala Ser
 85 90 95
 Ala Leu Leu Glu Val Leu Asp Pro Glu Gln Asn Lys Asp Phe Leu Asp
 100 105 110
 His Tyr Leu Asp Val Arg Val Asp Leu Ser Asn Val Leu Phe Ile Leu
 115 120 125
 Thr Ala Asn Val Leu Asp Thr Ile Pro Asp Pro Leu Leu Asp Arg Met
 130 135 140
 Glu Ile Leu Arg Leu Ser Gly Tyr Ile Leu Glu Glu Lys Leu Gln Ile
 145 150 155 160
 Ala Lys Lys Tyr Leu Val Pro Lys Ala Arg Lys Glu Ile Gly Leu Thr
 165 170 175
 Ala Ser Glu Val Asn Phe Gln Pro Glu Ala Leu Lys Tyr Met Ile Asn
 180 185 190
 Asp Tyr Ala Arg Glu Ala Gly Val Arg Thr Leu Asn Gly Asn Ile Lys
 195 200 205
 Lys Val Leu Arg Lys Val Ala Leu Lys Ile Val Gln Asn Gln Glu Lys
 210 215 220
 Pro Lys Ser Lys Lys Ile Thr Phe Lys Ile Ser Ser Lys Asn Leu Gln
 225 230 235 240
 Thr Tyr Leu Gly Lys Pro Ile Phe Ser Ser Asp Arg Phe Tyr Glu Ser
 245 250 255
 Thr Pro Val Gly Val Ala Thr Gly Leu Ala Trp Thr Ser Leu Gly Gly
 260 265 270
 Ala Thr Leu Tyr Ile Glu Ser Val Gln Val Ser Ser Leu Lys Thr Asp
 275 280 285
 Met His Leu Thr Gly Gln Ala Gly Glu Val Met Lys Glu Ser Ser Gln
 290 295 300
 Ile Ala Trp Thr Tyr Leu His Ser Ala Leu His Arg Tyr Ala Pro Gly
 305 310 315 320
 Tyr Thr Phe Phe Pro Lys Ser Gln Val His Ile His Ile Pro Glu Gly
 325 330 335
 Ala Thr Pro Lys Asp Gly Pro Ser Ala Gly Ile Thr Met Val Thr Ser
 340 345 350
 Leu Leu Ser Leu Leu Leu Glu Thr Pro Val Val Asn Asn Leu Gly Met
 355 360 365
 Thr Gly Glu Ile Thr Leu Thr Gly Arg Val Leu Gly Val Gly Gly Ile
 370 375 380
 Arg Glu Lys Leu Ile Ala Ala Arg Arg Ser Arg Leu Asn Ile Leu Ile
 385 390 395 400
 Phe Pro Glu Asp Asn Arg Arg Asp Tyr Glu Glu Leu Pro Ala Tyr Leu
 405 410 415
 Lys Thr Gly Leu Lys Ile His Phe Val Ser His Tyr Asp Asp Val Leu
 420 425 430
 Lys Val Ala Phe Pro Lys Leu Lys
 435 440

<210>45

<211>424

<212>PRT

<213>Chlamydia pneumoniae

<400>45

Pro Ser Ile Arg Thr Ile Val Asp Ser Thr Thr Asn Ser Asp Ser Pro
 1 5 10 15
 Ile Leu Asp Pro Asn Pro Glu Asp Val Glu Lys Leu Leu Asp Glu Ser
 20 25 30
 Glu Glu Glu Ser Glu Asp Gln Ser Thr Glu Arg Leu Leu Pro Ser Glu
 35 40 45
 Leu Phe Ile Leu Pro Leu Asn Lys Arg Pro Phe Phe Pro Gly Met Ala
 50 55 60
 Ala Pro Ile Leu Ile Glu Ser Gly Pro Tyr Tyr Glu Val Leu Lys Val
 65 70 75 80
 Leu Ala Lys Ser Ser Gln Lys Tyr Ile Gly Leu Val Leu Thr Lys Lys
 85 90 95
 Glu Asn Ala Asp Ile Leu Lys Val Ser Phe Asn Gln Leu His Lys Thr

100 105 110
 Gly Val Ala Arg Ile Leu Arg Ile Met Pro Ile Glu Gly Gly Ser
 115 120 125
 Ala Gln Val Leu Leu Ser Ile Glu Glu Arg Ile Arg Ile Ile Glu Pro
 130 135 140
 Ile Lys Asp Lys Tyr Leu Lys Ala Arg Val Ser Tyr His Ala Asp Asn
 145 150 155 160
 Lys Glu Leu Thr Glu Glu Leu Lys Ala Tyr Ser Ile Ser Ile Val Ser
 165 170 175
 Val Ile Lys Asp Leu Leu Lys Leu Asn Pro Leu Phe Lys Glu Glu Leu
 180 185 190
 Gln Ile Phe Leu Gly His Ser Asp Phe Thr Glu Pro Gly Lys Leu Ala
 195 200 205
 Asp Phe Ser Val Ala Leu Thr Thr Ala Thr Arg Glu Glu Leu Gln Glu
 210 215 220
 Val Leu Glu Thr Thr Asn Met His Asp Arg Ile Asp Lys Ala Leu Ile
 225 230 235 240
 Leu Leu Lys Lys Glu Leu Asp Leu Ser Arg Leu Gln Ser Ser Ile Asn
 245 250 255
 Gln Lys Ile Glu Ala Thr Ile Thr Lys Ser Gln Lys Glu Phe Phe Leu
 260 265 270
 Lys Glu Gln Leu Lys Thr Xaa Lys Lys Glu Leu Gly Leu Glu Lys Glu
 275 280 285
 Asp Arg Ala Ile Asp Ile Glu Lys Phe Ser Glu Arg Leu Arg Lys Arg
 290 295 300
 His Val Pro Asp Tyr Ala Met Glu Val Ile Gln Asp Glu Ile Glu Lys
 305 310 315 320
 Leu Gln Thr Leu Glu Thr Ser Ser Ala Glu Tyr Thr Val Cys Arg Asn
 325 330 335
 Tyr Leu Asp Trp Leu Thr Ile Ile Pro Trp Gly Ile Gln Ser Lys Glu
 340 345 350
 Tyr His Asp Leu Lys Lys Ala Glu Ile Val Leu Asn Lys Asp His Tyr
 355 360 365
 Gly Leu Asp Glu Ile Lys Gln Arg Ile Leu Glu Leu Ile Ser Val Gly
 370 375 380
 Lys Leu Ser Lys Gly Leu Lys Gly Ser Ile Ile Cys Leu Val Gly Pro
 385 390 395 400
 Pro Gly Val Gly Lys Thr Ser Ile Gly Arg Thr Leu Leu Lys Ser Cys
 405 410 415
 Ile Glu Ser Ser Ser Val Ser Gln
 420

<210>46

<211>122

<212>PRT

<213>Chlamydia pneumoniae

<400>46

Arg Met Phe Leu Gln Phe Phe His Pro Ile Val Phe Ser Asp Gln Ser
 1 5 10 15
 Leu Ser Phe Leu Pro Tyr Leu Gly Lys Ser Ser Gly Ile Ile Glu Lys
 20 25 30
 Cys Ser Asn Ile Val Glu His Tyr Leu His Leu Gly Gly Asp Thr Ser
 35 40 45
 Val Ile Ile Thr Gly Val Ser Gly Ala Thr Phe Leu Ser Val Asp His
 50 55 60
 Ala Leu Pro Ile Ser Lys Ser Glu Lys Ile Ile Lys Ile Leu Ser Tyr
 65 70 75 80
 Ile Leu Ile Leu Pro Leu Ile Leu Ala Leu Phe Ile Lys Ile Val Leu
 85 90 95
 Arg Ile Ile Leu Phe Xaa Lys Tyr Arg Gly Leu Ile Xaa Asp Val Lys
 100 105 110
 Lys Glu Asp Leu Glu Lys Asn Thr Tyr Thr
 115 120

<210>47

<211>150

<212>PRT

<213>Chlamydia pneumoniae

<400>47

Ser Asn Lys Asn Glu Arg Asn Glu Asn Ile Tyr Cys Phe Asn Leu Phe
 1 5 10 15
 Arg Tyr Ile Arg Phe Phe Ala Ala Leu Asn Ile Arg Thr Asn Asp Gly
 20 25 30
 Leu Arg Phe Cys Tyr Ser Tyr Ile Leu Leu Arg Pro Met Leu Leu Asp
 35 40 45
 Ser Ser Leu Leu Arg Lys Gly Gly Gln Glu Leu Leu Lys Lys Phe Gln
 50 55 60
 Ile Lys Leu Arg Thr Thr Ser Ile Lys Ser Ser Leu Ile Ser Leu Arg
 65 70 75 80
 Gln Gln Leu Gly Lys Arg Glu Ala Thr Gln Ser Asp Ile Leu Tyr Gly
 85 90 95
 Thr Ser Arg Phe Gln Tyr Leu Asn Ser Phe Glu Ile Glu Asp Pro Arg
 100 105 110
 Ile Pro Pro Thr Met Ala Ala Gln Leu Gln Glu Ile Ile Trp Ser Arg
 115 120 125
 Ser Val Met Glu Leu Lys Ile Lys Phe Tyr Val Tyr Leu Asn Ser Glu
 130 135 140
 Arg Asn Lys Thr Lys Pro
 145 150

<210>48

<211>392

<212>PRT

<213>Chlamydia pneumoniae

<400>48

Met Asp Tyr Tyr Ser Ile Leu Gly Ile Ser Lys Thr Ala Ser Ala Glu
 1 5 10 15
 Glu Ile Lys Lys Ala Tyr Arg Lys Leu Ala Val Lys Tyr His Pro Asp
 20 25 30
 Lys Asn Pro Gly Asp Ala Ala Ala Glu Lys Arg Phe Lys Glu Val Ser
 35 40 45
 Glu Ala Tyr Glu Val Leu Ser Asp Pro Glu Lys Arg Asp Ser Tyr Asp
 50 55 60
 Arg Phe Gly Lys Asp Gly Pro Phe Ala Gly Ala Gly Gly Phe Gly Gly
 65 70 75 80
 Ala Gly Gly Met Gly Asn Met Glu Asp Ala Leu Arg Thr Phe Met Gly
 85 90 95
 Ala Phe Gly Gly Glu Phe Gly Gly Gly Ser Phe Phe Asp Gly Leu Phe
 100 105 110
 Gly Gly Leu Gly Glu Ala Phe Gly Met Arg Ser Asp Pro Ala Gly Ala
 115 120 125
 Arg Gln Gly Ala Ser Lys Lys Val His Ile Asn Leu Thr Phe Glu Glu
 130 135 140
 Ala Ala His Gly Val Glu Lys Glu Leu Val Val Ser Gly Tyr Lys Ser
 145 150 155 160
 Cys Glu Thr Cys Ser Gly Gln Gly Ala Val Asn Pro Gln Gly Ile Lys
 165 170 175
 Ser Cys Glu Arg Cys Lys Gly Ser Gly Gln Val Val Gln Ser Arg Gly
 180 185 190
 Phe Phe Ser Met Ala Ser Thr Cys Pro Glu Cys Gly Gly Glu Gly Arg
 195 200 205
 Ile Ile Thr Asp Pro Cys Ser Ser Cys Arg Gly Gln Gly Arg Val Lys
 210 215 220
 Asp Lys Arg Ser Val His Val His Ile Pro Ala Gly Val Asp Ser Gly
 225 230 235 240
 Met Arg Leu Lys Met Glu Gly Tyr Gly Asp Ala Gly Gln Asn Gly Ala
 245 250 255
 Pro Ser Gly Asp Leu Tyr Val Phe Ile Asp Val Glu Ser His Pro Val
 260 265 270
 Phe Glu Arg Arg Gly Asp Asp Leu Ile Leu Glu Leu Pro Ile Gly Phe
 275 280 285

Val Asp Ala Ala Leu Gly Met Lys Lys Glu Ile Pro Thr Leu Leu Lys
 290 295 300
 Thr Glu Gly Ser Cys Arg Leu Thr Val Pro Glu Gly Ile Gln Ser Gly
 305 310 315 320
 Thr Ile Leu Lys Val Arg Asn Gln Gly Phe Pro Asn Val His Gly Lys
 325 330 335
 Gly Arg Gly Asp Leu Leu Val Arg Ile Ser Val Glu Thr Pro Gln Asn
 340 345 350
 Leu Ser Glu Glu Gln Lys Glu Leu Leu Arg Thr Phe Ala Ser Thr Glu
 355 360 365
 Lys Ala Glu Asn Phe Pro Lys Lys Arg Ser Phe Leu Asp Lys Ile Lys
 370 375 380
 Gly Phe Phe Ser Asp Phe Thr Val
 385 390

<210>49

<211>258

<212>PRT

<213>Chlamydia pneumoniae

<400>49

Met Gly Val Val Gln Asn Gln Val Ile Ser Ser Ile Arg Asp Val Leu
 1 5 10 15
 Lys Leu Val Trp Glu Leu Arg Phe Ala Glu His Lys Met Leu Leu Leu
 20 25 30
 Ser Arg Gln Ser Gly Ser Gly Gly Thr Phe Gln Leu Ser Cys Ala Gly
 35 40 45
 His Glu Leu Ala Gly Val Leu Ala Gly Lys Ser Leu Ile Pro Gly Lys
 50 55 60
 Asp Trp Ser Phe Pro Tyr Tyr Arg Asp Gln Gly Phe Pro Ile Gly Leu
 65 70 75 80
 Gly Cys Asp Leu Ser Glu Ile Phe Ala Ser Phe Leu Ala Arg Thr Thr
 85 90 95
 Pro Asn His Ser Ser Ala Arg Met Met Pro Tyr His Tyr Ser His Lys
 100 105 110
 Lys Leu Arg Ile Cys Cys Gln Ser Ser Val Val Gly Thr Gln Phe Leu
 115 120 125
 Gln Ala Ala Gly Arg Ala Trp Ala Val Lys His Ser Ser Ala Asp Glu
 130 135 140
 Val Val Tyr Val Ser Gly Gly Asp Gly Ala Thr Ser Gln Gly Glu Phe
 145 150 155 160
 His Glu Met Leu Asn Phe Val Ala Leu His Gln Leu Pro Leu Ile Thr
 165 170 175
 Val Ile Gln Asn Asn His Trp Ala Ile Ser Val Pro Phe Glu Asp Gln
 180 185 190
 Cys Gly Ala Asp Leu Ala Ser Leu Gly Arg Cys His Gln Gly Leu Ala
 195 200 205
 Val Tyr Glu Val Asp Gly Gly Asn Tyr Thr Ser Leu Thr Glu Thr Phe
 210 215 220
 Ser His Ala Val Asp Gln Ala Arg Gln His Ser Val Pro Ala Leu Ile
 225 230 235 240
 Leu Ile Asp Val Val Arg Leu Ser Ser His Ser Asn Ser Asp Asn Gln
 245 250 255
 Glu Lys

<210>50

<211>410

<212>PRT

<213>Chlamydia pneumoniae

<400>50

Met Asp Lys Asp Pro Leu Ile Leu Leu Glu Lys Glu Ala Ile Asn Val
 1 5 10 15
 Phe Gly Leu Ser Pro Phe Glu Ile Glu Glu Ile Lys Ala Glu Ala Gln
 20 25 30
 Glu Glu Val Arg Lys Ser Cys Glu Ile Ala Glu Ala Leu Pro Phe Pro
 35 40 45

Ser Lys Gly Ser Thr Ser His Glu Val Phe Ser Pro Tyr Thr Glu Thr
 50 55 60
 Leu Ile Asp Tyr Glu Asn Ser Glu Ser Ala Gln Asn Leu Arg Asn Ser
 65 70 75 80
 Glu Pro Lys Val Met Arg Asp Ala Ile Ser Glu Ala Leu Val Glu Glu
 85 90 95
 Met Thr Arg Asp Ser Gly Val Ile Val Phe Gly Glu Asp Val Ala Gly
 100 105 110
 Asp Lys Gly Gly Val Phe Gly Val Thr Arg Asn Leu Thr Glu Lys Phe
 115 120 125
 Gly Pro Gln Arg Cys Phe Asn Ser Pro Leu Ala Glu Ala Thr Ile Ile
 130 135 140
 Gly Thr Ala Ile Gly Met Ala Leu Asp Gly Ile His Lys Pro Val Val
 145 150 155 160
 Glu Ile Gln Phe Ala Asp Tyr Ile Trp Pro Gly Ile Asn Gln Leu Phe
 165 170 175
 Ser Glu Ala Ser Ser Ile Tyr Tyr Arg Ser Ala Gly Glu Trp Glu Val
 180 185 190
 Pro Leu Val Ile Arg Ala Pro Ser Gly Gly Tyr Ile Gln Gly Gly Pro
 195 200 205
 Tyr His Ser Gln Ser Ile Glu Gly Phe Leu Ala His Cys Pro Gly Ile
 210 215 220
 Lys Val Ala Tyr Pro Ser Asn Ala Ala Asp Ala Lys Ala Leu Leu Lys
 225 230 235 240
 Ala Ala Ile Arg Asp Pro Asn Pro Val Val Phe Leu Glu His Lys Ala
 245 250 255
 Leu Tyr Gln Arg Arg Ile Phe Ser Ala Cys Pro Val Phe Ser His Asp
 260 265 270
 Tyr Val Leu Pro Phe Arg Lys Ala Ala Ile Val His Pro Gly Lys Asp
 275 280 285
 Leu Thr Ile Val Ser Trp Gly Met Pro Leu Val Leu Ser Leu Glu Val
 290 295 300
 Ala Gln Glu Leu Ala Ser Arg Gly Ile Ser Ile Glu Val Ile Asp Leu
 305 310 315 320
 Arg Thr Met Val Pro Cys Asp Phe Ala Thr Val Leu Lys Ser Leu Glu
 325 330 335
 Lys Thr Gly Arg Leu Leu Val Ile His Glu Ala Ser Glu Phe Cys Gly
 340 345 350
 Phe Gly Ser Glu Leu Val Ala Thr Met Ser Glu Gln Gly Tyr Ala Tyr
 355 360 365
 Leu Asp Ala Pro Ile Arg Arg Leu Gly Gly Leu His Ala Pro Val Pro
 370 375 380
 Tyr Ser Lys Val Leu Glu Asn Glu Val Leu Pro His Lys Glu Ser Ile
 385 390 395 400
 Leu Gln Ala Ala Lys Ser Leu Ala Glu Phe
 405 410

<210>51

<211>429

<212>PRT

<213>Chlamydia pneumoniae

<400>51

Val Asn Phe Leu Leu Pro Thr Thr Cys Arg Gly Ile Leu Met Ala Glu
 1 5 10 15
 Ile Ser Thr Pro Ser Leu Pro Asp Ser Ser Ile Val Ser Gln Lys Thr
 20 25 30
 Pro Pro Val Pro Asp Pro Asp Ser Ser Pro Asp His Ile Pro Thr Ile
 35 40 45
 Pro Thr Gln Ala Pro Phe Lys Pro Gln Arg Lys Lys Glu Thr Pro Ser
 50 55 60
 Ser Ile Val Asn Ala Ile Ala Phe Ala Ile Leu Ala Phe Leu Ser Cys
 65 70 75 80
 Leu Gly Gly Val Phe Ala Ile Cys Leu Gly Cys Ser Leu Glu Ile Thr
 85 90 95
 Met Pro Leu Phe Ile Leu Thr Ala Val Phe Ile Ala Phe Thr Leu Leu

100 105 110
 Tyr Phe Ile His Tyr Leu Glu Lys Pro Lys Ile Pro Glu Pro Leu Pro
 115 120 125
 Thr Pro Pro Pro Ser Pro Thr Leu Arg Ala Pro Thr Leu Thr Pro Glu
 130 135 140
 Ile Pro Ala Pro Ala Pro Gly Ile Pro Leu Pro Pro Thr Leu Pro Lys
 145 150 155 160
 Val Asp Arg Thr Lys Leu Thr Cys Asn Pro Asp Ile His Tyr Pro Ser
 165 170 175
 Thr Tyr Asp Pro Lys Ala Cys Phe Ser Leu Leu Lys Gln Leu Phe Ser
 180 185 190
 Leu Asp Pro Glu Thr Arg Pro Glu Asp Arg Lys Tyr Ser Asn Lys Leu
 195 200 205
 Ala Ser Ile Leu Leu Arg Ser Lys Glu Lys Ser Gly Phe Arg Phe His
 210 215 220
 Cys Phe Lys Gly His Phe Ser His Asp Lys Ile Leu Asn Lys Lys Ser
 225 230 235 240
 Gly Ala Val Val Ile Ser Ser His Ser Ser Met Asp Phe Ser Thr Thr
 245 250 255
 Leu Gly Arg Ala Phe Ala Val Thr Thr Cys Leu Gln Arg Ser Cys Trp
 260 265 270
 Glu Lys Ile Lys Asn Asn Ile Pro Thr Pro Glu Lys His Leu Pro Ile
 275 280 285
 Gly Ser Cys Val Ser Gly Pro Trp Asp Val Glu Glu Gly Ala Gln Leu
 290 295 300
 Tyr Thr Ser His Leu Ile Val Ile Asn Pro Pro Thr Leu Glu Thr Leu
 305 310 315 320
 Ile Lys Glu Lys Met Arg Arg Ala Ile Thr Leu Lys Asp Phe Ser Met
 325 330 335
 Lys Glu Ala Phe Thr Asn Leu Val Leu Ala Tyr Leu Gln Cys Phe Asp
 340 345 350
 Ile Cys Ile Glu His Asn Leu Glu Ser Val Gln Leu Glu Val Phe Gly
 355 360 365
 Leu Asn Asn Leu Ser Ala Asp Gln Glu Glu Phe Thr Thr Trp Glu Ser
 370 375 380
 Cys Cys His Leu Ala Leu Leu Glu Ser Val Arg Ile Leu Leu Ala Ser
 385 390 395 400
 Lys Glu Glu Tyr Ala Leu Ser Asn Val Ser Val Asn Ser Ile Ser Gln
 405 410 415
 Val Pro Leu Gln Thr Ala Cys Arg Ala Leu Phe Leu Asn
 420 425

<210>52

<211>524

<212>PRT

<213>Chlamydia pneumoniae

<400>52

Thr Thr Leu Glu Glu Asp Ala Gly Ser Ser Leu Lys Pro Leu Pro Lys
 1 5 10 15
 Thr Phe Pro Cys Ala Thr Ala Leu Tyr Ile Thr His Arg Arg Glu Arg
 20 25 30
 Lys Ser Glu His Gln Met Trp Asn Arg Cys Gln Val Phe Ser Ser Phe
 35 40 45
 Phe Phe Arg Tyr Pro Ile Ser Ser Trp Leu Ile Arg Leu Arg Ala Ser
 50 55 60
 Cys Glu Cys Phe Gln Gln Arg His Pro Ile Phe Leu Cys Gly Leu Tyr
 65 70 75 80
 Trp Leu Ala Gly Ile Thr Ser Arg Gly Tyr Pro Glu Cys Ser Ala Leu
 85 90 95
 Ile Leu Ile Phe Leu Gly Met Phe Leu Pro Arg Asn Pro Lys Gln Trp
 100 105 110
 Leu Pro Leu Ala Ser Ala Trp Ile Ile Ser Leu Met Leu Thr Pro Ala
 115 120 125
 Pro Phe Leu His Asp Gly Pro Ile Ser Gly Thr Phe Val Ile His His
 130 135 140

Ala Gly Gly Gln Gly Xaa Thr Thr Glu Lys Leu Phe Val Phe Arg Arg
 145 150 155 160
 Pro Val Gly Lys Arg Ala His His Leu Xaa Cys Gln Ile Leu Ser Glu
 165 170 175
 Ser Arg Leu Gln Leu Lys Lys Val Tyr Glu Leu Glu Gly Thr Leu His
 180 185 190
 His Thr Ser Gln Ile Val Phe Lys Ser Asn Ala Cys Tyr Lys Glu Ile
 195 200 205
 Pro Arg Ser Arg Phe Tyr Ile Met Lys Glu Lys Cys Arg Glu Ser Ser
 210 215 220
 Cys His Phe Leu Asn His Arg Phe Pro Ser Ser Glu Val Gly Pro Phe
 225 230 235 240
 Ala Ser Ser Leu Leu Leu Gly Thr Pro Leu Pro Gln Asn Leu Arg Asp
 245 250 255
 Leu Phe Arg Gln Lys Gly Leu Ser His Leu Phe Ala Ile Ser Gly Trp
 260 265 270
 His Phe Ser Leu Cys Ala Thr Thr Leu Trp Met Leu Cys Ala Leu Leu
 275 280 285
 Pro Leu Lys Ile Lys Lys Ile Leu Ser Phe Ile Val Leu Thr Ser Leu
 290 295 300
 Ser Cys Ile Phe Pro Met Ser Leu Ser Val Trp Arg Ser Trp Ile Ser
 305 310 315 320
 Val Thr Leu Leu Cys Phe Ser Trp Cys Phe Ser Gly Ser Cys Ser Gly
 325 330 335
 Leu Asn Arg Leu Gly Ala Gly Phe Ile Leu Cys Ser Ile Phe Phe Ser
 340 345 350
 Arg Phe Ser Pro Thr Phe Val Leu Ser Phe Leu Ala Thr Leu Gly Ile
 355 360 365
 Leu Leu Phe Phe Pro Lys Ile Phe Ser Phe Leu Tyr Thr Pro Trp Thr
 370 375 380
 Gln Phe Leu Ser Pro Phe Trp Leu Tyr Pro Ile Arg Tyr Leu Ala Met
 385 390 395 400
 Thr Leu Ala Ile Ser Leu Ser Ala Gln Leu Phe Ile Val Leu Pro Ile
 405 410 415
 Met Gln Tyr Phe Gly Ser Leu Pro Leu Glu Gly Leu Leu Tyr Asn Leu
 420 425 430
 Ile Val Pro Phe Thr Ile Leu Pro Ile Ile Val Phe Leu Ile Ala Thr
 435 440 445
 Ile Ile Leu Pro Cys Cys Ser Pro Ile Thr Glu Ala Leu Ile Gln Gly
 450 455 460
 Phe Leu Ser His Pro Trp Leu His Asn Pro Asn Ile Leu Lys Thr Leu
 465 470 475 480
 Ser Phe Ala Pro Val Pro Pro Trp Met Leu Thr Leu Ala Ser Leu Ile
 485 490 495
 Leu Phe Phe Ile Gly Ile Leu Arg Thr Asn Val Ser Pro Tyr Ala Ser
 500 505 510
 Thr Ser Ala Thr Ser Tyr Arg Phe Ile Glu Thr Leu
 515 520

<210>53

<211>276

<212>PRT

<213>Chlamydia pneumoniae

<400>53

Ala Lys Ser Leu Trp Asp Ser Glu Arg Lys Lys Met Lys Lys Pro Asp
 1 5 10 15
 Asn Asp Ser Thr Phe Asp Val Arg Ser Phe Phe Pro Phe Asp Val Leu
 20 25 30
 Cys Ile Glu Gln Leu Arg Lys Glu Met Ser Trp Glu Val Val Ser Ala
 35 40 45
 Lys Ile Pro Arg Leu Pro Arg Gly Trp Tyr Glu Leu Met Gly Leu Ser
 50 55 60
 Lys Glu Asp Arg Ile Asp Phe Cys Leu Asp Phe Trp Cys Ser Val L u
 65 70 75 80
 Gly Ile Glu His Lys Glu S r Pro Ser Ile Cys Arg Phe Phe Ser Leu

85 90 95
 Leu Gln Thr Ile Glu Val Tyr Ile Tyr Arg Leu Glu Lys Glu Pro Tyr
 100 105 110
 Gln Leu Lys Met Phe Tyr Val Phe Arg Asp Gly Arg Cys Gly Phe Gln
 115 120 125
 Gly Glu Pro Pro Leu Leu Asp Phe Leu Gly His His Arg Leu Pro Pro
 130 135 140
 Leu Gly Asp Arg His Tyr Glu Lys Phe Phe Ser Ile His Asn Gly Phe
 145 150 155 160
 Gly Lys Trp Gln Asp Glu Gly Ile Phe Pro Met Arg Ser Leu Ala Lys
 165 170 175
 Val Gln Gln Lys Leu Arg Gln Gln Leu Val Val Met Asn Lys Met Gln
 180 185 190
 Ala Glu Asp Asn Cys Tyr Ser Leu Gly Ile Phe Pro Phe Tyr Gly Tyr
 195 200 205
 Glu Glu Pro Phe Ala Tyr Gln Ser Phe Phe Phe Asp Pro Glu Ile Arg
 210 215 220
 Arg Asp Leu Pro Ser Pro Asn Val Leu Leu Asn Glu Glu Ser Leu Glu
 225 230 235 240
 His Arg Ser Leu Glu Thr Ile Glu Leu Leu His Leu Ser Lys Ser Tyr
 245 250 255
 Tyr Pro Ser Phe Leu Ser Trp Leu Glu Asn Tyr Leu His Ser Glu Glu
 260 265 270
 Val Tyr Asn Glu
 275

<210>54

<211>113

<212>PRT

<213>Chlamydia pneumoniae

<400>54

Val Arg Arg Cys Ile Met Asn Glu Pro Thr Arg Thr Tyr Leu Glu Ser
 1 5 10 15
 Glu Lys Asp Thr Gln Asp Gln Ile Glu Glu Leu Gln Ala Thr Cys Ile
 20 25 30
 Val Lys Asn Ala Ala Gly Ile His Val Arg Pro Ala Gly Val Ile Val
 35 40 45
 Arg Leu Phe Asp Gly Glu Pro Cys Asp Val His Phe Thr Tyr Ala Gly
 50 55 60
 Lys Thr Ile Asn Ala Lys Ser Ile Met Ser Ile Leu Met Leu Gly Ala
 65 70 75 80
 Pro Gln Gly Gly Glu Ile Leu Val Thr Ile Arg Ser Lys Glu Ala His
 85 90 95
 Arg Ile Leu Gln Lys Ile Gln Asp Ala Phe Ser Ser Gly Phe Gly Glu
 100 105 110
 Leu

<210>55

<211>420

<212>PRT

<213>Chlamydia pneumoniae

<400>55

Met Asp Thr Gln Ser Ser Ile Gly Asn Glu Glu Trp Arg Ile Ala Gly
 1 5 10 15
 Thr Ser Val Val Ser Gly Met Ala Leu Gly Lys Val Phe Phe Leu Gly
 20 25 30
 Thr Ser Pro Leu His Val Arg Glu Leu Thr Leu Pro Gln Glu Glu Val
 35 40 45
 Glu His Glu Ile His Arg Tyr Tyr Lys Ala Leu Asn Arg Ser Lys Ser
 50 55 60
 Asp Ile Val Ala Leu Glu Gln Gln Val Thr Gly Gln Gln Gly Leu Gln
 65 70 75 80
 Glu Val Ser Ser Ile Leu Gln Ala His Leu Glu Ile Met Lys Asp Pro
 85 90 95
 Leu Leu Thr Glu Glu Val Val Asn Thr Ile Arg Lys Asp Arg Lys Asn

100 105 110
 Ala Glu Tyr Val Phe Ser Ser Val Met Gly Lys Ile Glu Glu Ser Leu
 115 120 125
 Thr Ala Val Arg Gly Met Pro Ser Val Val Asp Arg Val Gln Asp Ile
 130 135 140
 His Asp Ile Ser Asn Arg Val Ile Gly His Leu Cys Cys Gln His Lys
 145 150 155 160
 Ser Ser Leu Gly Glu Ser Asp Gln Asn Leu Ile Ile Phe Ser Glu Glu
 165 170 175
 Leu Thr Pro Ser Glu Val Ala Ser Ala Asn Ser Ala Tyr Ile Arg Gly
 180 185 190
 Phe Val Ser Leu Val Gly Ala Ala Thr Ser His Thr Ala Ile Val Ser
 195 200 205
 Arg Ala Lys Ser Ile Pro Tyr Leu Ala Asn Ile Ser Glu Glu Leu Trp
 210 215 220
 Asn Ile Ala Lys Arg Tyr Asn Gly Lys Leu Val Leu Ile Asp Gly Tyr
 225 230 235 240
 Arg Gly Glu Leu Ile Phe Asn Pro Lys Pro Ala Thr Leu Gln Ser Cys
 245 250 255
 Tyr Lys Lys Glu Leu Ser Val Val Ala His Thr Ser Gln Arg Leu Val
 260 265 270
 Arg Lys Ser Leu His Pro Ile Val Ser Ser His Ala Gly Ser Asp Lys
 275 280 285
 Asp Val Glu Asp Leu Leu Glu Asn Phe Pro Gln Thr Ser Ile Gly Leu
 290 295 300
 Phe Arg Ser Glu Phe Leu Ala Val Ile Leu Gly Arg Leu Pro Thr Leu
 305 310 315 320
 Arg Glu Gln Val Asp Leu Tyr Glu Lys Leu Ala Arg Phe Pro Gly Asp
 325 330 335
 Ser Pro Ser Val Leu Arg Leu Phe Asp Phe Gly Glu Asp Lys Pro Cys
 340 345 350
 Pro Gly Ile Lys Asn Lys Lys Glu Arg Ser Ile Arg Trp Leu Leu Asp
 355 360 365
 Tyr Ser Val Ile Leu Glu Asp Gln Leu Gln Ala Ile Ala Lys Ala Ser
 370 375 380
 Leu Gln Gly Ser Ile Lys Val Leu Ile Pro Gly Val Ser Asp Val Ser
 385 390 395 400
 Glu Ile Ile Glu Val Lys Lys Lys Trp Glu Thr Ile Gln Thr Arg Phe
 405 410 415
 Pro Lys Arg Pro
 420

<210>56

<211>102

<212>PRT

<213>Chlamydia pneumoniae

<400>56

Thr Ser Lys Cys Asn Phe Ala Pro Ser Ser Asp Pro His Asp Ser Pro
 1 5 10 15
 Cys Thr Ser Ser Cys Glu Gln Asn Gln Val Pro Val Ser Ile Cys Gly
 20 25 30
 Glu Ala Ala Gly Gln Leu Ser Leu Thr Pro Leu Phe Ile Gly Leu Gly
 35 40 45
 Val Gln Glu Leu Ser Val Ala Met Pro Val Ile Asn Arg Leu Arg Asn
 50 55 60
 His Ile Ala Leu Leu Glu Leu Asn Ser Cys Leu Glu Ile Thr Glu Ala
 65 70 75 80
 Leu Leu Gln Ala Lys Thr Cys Ser Glu Val Glu Glu Leu Leu Asn Arg
 85 90 95
 Asn Asn Lys Ile Thr Ser
 100

<210>57

<211>98

<212>PRT

<213>Chlamydia pneumoniae

<400>57

Ile Ser Met Gly Ser Gly Tyr Ala Lys Lys Lys Lys Glu Ala Lys Ile
 1 5 10 15
 Met Glu Gln Gln Phe Leu Glu Met Glu Ala Ser Leu Leu Glu Lys Arg
 20 25 30
 Tyr Glu Gly Gln Ala Gly Asn Gly Leu Val Ser Val Val Ile Asn Gly
 35 40 45
 Lys Cys Asp Leu Ile Ser Val Lys Val Gln Pro Thr Cys Leu Asp Pro
 50 55 60
 Glu Asp Pro Glu Val Ile Gln Asp Leu Phe Arg Ala Ala Phe Lys Leu
 65 70 75 80
 Ala Lys Glu Gln Met Asp Gln Glu Met Ser Leu Met Arg Ser Thr Met
 85 90 95
 Pro Phe

<210>58

<211>271

<212>PRT

<213>Chlamydia pneumoniae

<400>58

Val Val Val Lys Lys Cys Ile Phe Lys Gly Phe Leu Lys Lys Arg Ser
 1 5 10 15
 Trp Arg Ser Tyr Arg Leu Trp Leu Lys Met Thr Ile Leu Arg Arg Arg
 20 25 30
 Lys Lys His Trp Arg Arg Ser Pro Val Gln His Lys Glu Ala Cys Val
 35 40 45
 Met Gln Asn Leu Phe Met Thr Tyr Val Ile Ser Leu Phe Pro Lys Ser
 50 55 60
 Leu Ser Pro Asp Thr Val Ala Gln Ala Leu Gly Phe Ala Ser Gln Asp
 65 70 75 80
 Ser Leu Arg Thr Leu Asp Asn Ala Ile Leu Gln Arg Asp Tyr Ala Thr
 85 90 95
 Ala Leu Gly Ile Val Thr Asp Phe Leu Asn Ser Gly Val Ala Pro Val
 100 105 110
 Thr Phe Leu His Asp Leu Thr Leu Phe Tyr Arg Asn Leu Leu Leu Thr
 115 120 125
 Asn Ser Thr Thr Ser Lys Phe Ser Ser Gln Tyr Lys Thr Glu Gln Leu
 130 135 140
 Leu Glu Ile Ile Asp Phe Leu Gly Glu Ser Ala Lys His Leu Gln Asn
 145 150 155 160
 Thr Ile Phe Glu Gln Thr Phe Leu Glu Thr Val Ile Ile His Ile Ile
 165 170 175
 Arg Ile Tyr Gln Arg Pro Val Leu Ser Glu Leu Ile Ser Ser Ile Lys
 180 185 190
 Ser Arg Gln Phe Glu Gly Leu Arg Asn Ile Lys Glu Pro Thr Leu Thr
 195 200 205
 Gln Gln Val Ser Ala Pro Gln Pro Gln Pro Thr Tyr Lys Glu Gln Ser
 210 215 220
 Phe Leu Glu Lys Lys Asn Gln Pro Ala Ala Glu Gly Lys Ile Ile Ser
 225 230 235 240
 Val Glu Val Lys Ser Ser Ala Ser Ile Lys Ser Ala Ala Val Asp Thr
 245 250 255
 Leu Leu Gln Phe Ala Val Val Glu Phe Ser Gly Ile Leu Arg Gln
 260 265 270

<210>59

<211>233

<212>PRT

<213>Chlamydia pneumoniae

<400>59

Met Thr Leu Gln Pro Tyr Gln Ala Ser Ser Arg Lys Tyr Arg Pro Gln
 1 5 10 15
 Ile Phe Arg Glu Ile Leu Gly Gln Ser Ser Val Val Ala Val Leu Lys
 20 25 30
 Asn Ala Leu Val Phe Asn Arg Ala Ala His Ala Tyr Leu Phe Ser Gly

35 40 45
 Ile Arg Gly Thr Gly Lys Thr Thr Leu Ala Arg Ile Leu Ala Lys Ala
 50 55 60
 Leu Asn Cys Val His Leu Ser Glu Asp Gly Glu Pro Cys Asn Gln Cys
 65 70 75 80
 Phe Ser Cys Lys Glu Ile Ala Ser Gly Ser Ser Leu Asp Val Leu Glu
 85 90 95
 Ile Asp Gly Ala Ser His Arg Gly Ile Glu Asp Ile Arg Gln Ile Asn
 100 105 110
 Glu Thr Val Leu Phe Thr Pro Val Lys Ala Lys Phe Lys Ile Tyr Ile
 115 120 125
 Ile Asp Glu Val His Met Leu Thr Lys Glu Ala Phe Asn Ala Leu Leu
 130 135 140
 Lys Thr Leu Glu Glu Pro Pro Gln His Val Lys Phe Phe Phe Ala Thr
 145 150 155 160
 Thr Glu Ile His Lys Ile Pro Gly Thr Ile Leu Ser Arg Cys Gln Lys
 165 170 175
 Met His Leu Gln Arg Ile Pro Glu Lys Thr Ile Leu Glu Lys Leu Ser
 180 185 190
 Leu Met Ala Gln Asp Asp His Ile Glu Ala Ser Gln Glu Ala Leu Ala
 195 200 205
 Pro Ile Ala Arg Ala Ala Gln Gly Ser Leu Arg Asp Ala Glu Ser Leu
 210 215 220
 Tyr Asp Leu Arg Asn Ile Phe Ile Ser
 225 230
 <210>60
 <211>346
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>60
 Cys Lys Tyr Leu Tyr His His Ser Tyr Pro Pro Pro Gln His Ser Val
 1 5 10 15
 Gly Ser Ile Ser Ser Arg Tyr Lys Leu Arg Val Leu Ala Ile Thr Phe
 20 25 30
 Leu Val Leu Gly Val Leu Leu Leu Ile Ser Gly Ala Leu Phe Leu Thr
 35 40 45
 Leu Gly Ile Pro Gly Leu Thr Ala Gly Val Ser Phe Gly Leu Gly Ile
 50 55 60
 Gly Leu Ser Ala Leu Gly Gly Val Leu Val Val Ser Gly Leu Leu Cys
 65 70 75 80
 Leu Leu Val Lys Arg Glu Val Ser Lys Val Cys Pro Glu Glu Ile Pro
 85 90 95
 Ala Val Gln Pro Glu Glu Thr Pro Glu Gly Val Pro Val Thr Pro Phe
 100 105 110
 Glu Lys Pro Ala Leu Asp Glu Ala Gln Lys Glu Gln Lys Thr Gln Lys
 115 120 125
 Ile Leu Asp Gln Leu Pro Gln Glu Leu Asp Gln Leu Asp Arg Tyr Ile
 130 135 140
 Gln Glu Val Phe Ala Cys Leu Gly Pro Leu Lys Asp Leu Lys Tyr Glu
 145 150 155 160
 Asp Gln Gly Phe Leu Gln Asp Val Lys Glu Glu Phe Gln Val Phe Asp
 165 170 175
 Phe Val Gln Lys Asp Met Ile Ala Glu Phe Val Glu Leu Gln Gln Ile
 180 185 190
 Leu Cys Gln Glu Gly Arg Leu Leu Glu Phe Val Ile Asn Gln Thr Arg
 195 200 205
 Tyr Ile Gly Arg Asp Leu Phe Lys Arg Glu Asp Ser Leu Tyr Lys Leu
 210 215 220
 Trp Glu Trp Leu Gly Tyr Leu Pro Ser Gly Asp Val Arg Gly Glu Arg
 225 230 235 240
 Leu Lys Lys Ser Ala Arg Glu Val Val Asp Arg Phe Met Arg Thr Thr
 245 250 255
 Cys Asn Ile Arg Lys Ile Ala Met Thr Phe Asp Arg His Val Tyr Ser
 260 265 270

Val Ala Lys Thr Ala Phe Glu Lys Ala Phe Gly Ala Leu Glu Thr Cys
 275 280 285
 Val Tyr Glu Ser Met Arg Glu Ser Tyr Arg Glu Ala Phe Cys Glu Tyr
 290 295 300
 Glu Lys Ala Lys Leu Leu Gly Asp Glu Glu Lys Ser Ala His Ala Glu
 305 310 315 320
 Gln Arg Phe Gln Asp Ile Lys Asn Arg Trp Glu Asp Val Lys Asp Ala
 325 330 335
 Phe Phe Trp Val Lys Glu Asp Gly Glu Asp
 340 345

<210>61

<211>145

<212>PRT

<213>Chlamydia pneumoniae

<400>61

Lys Lys Met Gly Lys Ile Glu Ile Asp Asp Ala Ile Gly Asn Ser Cys
 1 5 10 15
 Lys Trp Ser Glu Arg Tyr Glu Glu His Arg Ile Thr Arg Ala Arg Trp
 20 25 30
 Tyr Lys Val Ala Glu His Gln Leu Phe Asn Ala Thr Met Arg Val Lys
 35 40 45
 Asp Ser Leu Arg Glu His Asn Glu Ala Arg Val Ala Phe Glu Lys Glu
 50 55 60
 Arg Ser Lys Glu Asn Gln Arg Gln Val Gln Lys Lys Glu Lys Arg
 65 70 75 80
 Leu Arg Asp Leu Lys Glu Leu His Asp Gln Glu Leu Pro Arg Ala Gln
 85 90 95
 Glu Arg Leu Arg Glu Leu Gln Ala Leu Tyr Pro Glu Ile Ala Val Ser
 100 105 110
 Val Val Glu Ala Arg Arg Glu Val Ala Ser Asp Leu Glu Lys Ala His
 115 120 125
 Glu Ser Ile Asp Lys His Tyr Gln Ser Cys Val Arg Glu Gln Glu Leu
 130 135 140

Tyr

145

<210>62

<211>279

<212>PRT

<213>Chlamydia pneumoniae

<400>62

Glu Glu Glu Glu Lys Gln Glu Ala Glu Phe Arg Glu Asn Gly Thr Lys
 1 5 10 15
 Ile Arg Ser Met Glu Glu Val Ser Glu Tyr Leu Gln Gln Val Glu Asn
 20 25 30
 Gln Leu Glu Ser Cys Ser Lys Arg Leu Thr Lys Met Glu Thr Phe Ala
 35 40 45
 Leu Gly Val Arg Leu Glu Ala Lys Glu Glu Ile Glu Ser Ile Ile Leu
 50 55 60
 Ser Asp Val Val Asn Arg Phe Glu Val Leu Cys Arg Asp Ile Glu Asp
 65 70 75 80
 Met Leu Ser Arg Val Glu Glu Ile Glu Arg Met Leu Arg Met Ala Glu
 85 90 95
 Leu Pro Val Leu Pro Ile Lys Glu Ala Leu Thr Lys Ala Phe Val Gln
 100 105 110
 His Asn Ser Cys Lys Glu Lys Leu Thr Lys Val Glu Pro Tyr Phe Lys
 115 120 125
 Glu Ser Pro Ala Tyr Leu Thr Ser Glu Asn Arg Leu Gln Ser Leu Asn
 130 135 140
 Gln Thr Leu Gln Arg Ala Tyr Lys Glu Ser Gln Lys Val Ser Gly Leu
 145 150 155 160
 Glu Ser Glu Val Arg Ala Cys Arg Glu Gln Leu Lys Asp Gln Val Arg
 165 170 175
 Gln Phe Glu Thr Gln Gly Val Ser Leu Ile Lys Glu Glu Ile Leu Phe
 180 185 190

Val Thr Ser Thr Phe Arg Thr Lys Phe Ser Tyr His Ser Phe Arg Leu
 195 200 205
 His Val Pro Cys Met Arg Leu Tyr Glu Glu Tyr Tyr Asp Asp Ile Asp
 210 215 220
 Leu Glu Arg Thr Arg Ala Arg Trp Met Ala Met Ser Glu Arg Tyr Arg
 225 230 235 240
 Asp Ala Phe Gln Ala Phe Gln Glu Met Leu Lys Glu Gly Leu Val Glu
 245 250 255
 Glu Ala Gln Ala Leu Arg Glu Thr Glu Tyr Trp Leu Tyr Arg Glu Glu
 260 265 270
 Arg Lys Ser Lys Lys Lys His
 275
 <210>63
 <211>644
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>63
 Cys Lys Tyr Leu Tyr His His Ser Tyr Pro Pro Pro Pro Pro Pro
 1 5 10 15
 Asp Gln Ser Val Gly Ala Ser Phe Cys Leu Ser Lys Phe Arg Val Leu
 20 25 30
 Ala Ile Thr Phe Leu Val Leu Gly Val Leu Leu Leu Ile Ser Gly Ala
 35 40 45
 Leu Phe Leu Thr Leu Gly Ile Ser Gly Val Ser Leu Gly Val Gly Leu
 50 55 60
 Gly Leu Ser Ala Leu Gly Ser Val Leu Val Ile Ser Gly Phe Leu Leu
 65 70 75 80
 Leu Leu Glu Arg Arg Glu Val Ser Gly Val Gly Leu Glu Gly Ile Pro
 85 90 95
 Thr Gly Ile Pro Val Gly Pro Ser Ala Glu Pro Ser Ser Glu Glu Ile
 100 105 110
 Gln Lys Lys Gln Lys Ala Lys Gln Ile Leu Asp Gln Leu Pro Gln Glu
 115 120 125
 Leu Asp Gln Leu Asp Thr Asp Ile Gln His Val Leu Ser Cys Leu Gly
 130 135 140
 Lys Leu Lys Asp Leu Lys Cys Lys Asp Arg Gly Leu Leu Lys Asp Ala
 145 150 155 160
 Lys Glu Lys Leu Gln Val Phe Asp Phe Val Trp Lys Asp Met Met Met
 165 170 175
 Glu Phe Val Glu Leu Gln Gln Val Met Asp Gln Glu Ser Arg Tyr Leu
 180 185 190
 Glu Gly Leu Ile His Glu Val Gln Ser Ile Ala His Lys Leu Phe Val
 195 200 205
 Asp Asp Val Asn Ile Arg Ser His Leu Gly Glu Ser Cys Gly Tyr Leu
 210 215 220
 Pro Ser Glu Asp Val Arg Gly Glu Leu Leu Lys Arg Phe Ala Lys Glu
 225 230 235 240
 Val Val Ala Arg Phe Met Lys Val Thr Arg Asp Ile Arg Lys Ile Ala
 245 250 255
 Met Ala Phe Asn Lys Asn Ala Tyr Gly Ala Ala Lys Asn Ala Phe Asp
 260 265 270
 Lys Ala Phe Gly Ser Leu Glu Thr Cys Leu Tyr Lys Ser Leu Thr Lys
 275 280 285
 Ser Tyr Arg Asp Thr Phe Cys Asp Tyr Lys Arg Ala Lys Ile Leu Pro
 290 295 300
 Asp Glu Asn Asn Ser Ala Arg Ala Glu Gln Arg Phe Arg Glu Val Lys
 305 310 315 320
 Asp His Trp Glu Asp Leu Asn Glu Thr Val Phe Trp Val Lys Glu Asp
 325 330 335
 Gly Arg Ile Asp Ile Glu Val Leu Thr Ala Val Gly Gly Trp Pro Asp
 340 345 350
 Arg Tyr Pro Glu His Leu Ile Leu Glu Lys Arg Lys Asp Lys Val Met
 355 360 365
 Ser His Gln Leu Trp Glu Ala Thr Met Arg Val Lys Glu Ala Glu Val

370 375 380
 Thr Tyr Ser Val Ala Arg Val Ala Phe Glu Lys Asp Gly Ser Gln Gln
 385 390 395 400
 Asn Gln Lys Lys Phe Gln Glu Lys Thr Lys Glu Arg Leu Arg Cys Leu
 405 410 415
 Lys Asp Leu Arg Asp Gln Glu Cys His Arg Ala Gln Glu Arg Leu Glu
 420 425 430
 Lys Leu Thr Ala Leu Tyr Pro Glu Val Ser Val Ser Val Val Glu Thr
 435 440 445
 Glu Arg Glu Arg Lys Phe Asn Leu Glu Lys Ala Tyr Gly Asn Leu Glu
 450 455 460
 Glu Arg Tyr Gln Ser Val Val Gln Asp Gln Glu Asp Tyr Trp Thr Glu
 465 470 475 480
 Gln Lys Asn Arg Glu Ala Glu Phe Arg Ala Lys Gly Thr Lys Val Arg
 485 490 495
 Ser Met Glu Glu Val Ala Glu His Leu Gln Ile Leu Glu Asn Leu Leu
 500 505 510
 Glu Asp Cys Tyr Lys Arg Leu Ser Lys Ala Glu Thr Phe Ala Leu Gly
 515 520 525
 Val Glu Arg Glu Ala Thr Glu Glu Ile Glu Tyr Thr Ile Leu Ser Asp
 530 535 540
 Ala Ala Asn Arg Leu Lys Val Leu Cys Glu Asp Ile Glu Asp Thr Leu
 545 550 555 560
 Pro Arg Val Glu Glu Ile Glu Met Met Leu Arg Met Ala Glu Arg Pro
 565 570 575
 Leu His Pro Ile Lys Gln Ala Phe Thr Lys Ala Phe Val Gln Tyr Asn
 580 585 590
 Arg Cys Lys Glu Arg Leu Ala Lys Val Glu Pro Tyr Tyr Lys Glu Ser
 595 600 605
 Pro Ala Tyr Val Asn Ser Glu Glu Arg Leu Gln Ser Leu Asp Gln Ala
 610 615 620
 Ser Gln Cys Ile Gln Arg Val Pro Lys Gly Phe Lys Phe Arg Asn Gly
 625 630 635 640
 Ser Met Tyr Ile

<210>64

<211>114

<212>PRT

<213>Chlamydia pneumoniae

<400>64

Ser Lys Ile Cys Phe Ala Phe Cys Phe Phe Cys Ile Ser Ser Glu Glu
 1 5 10 15
 Gly Ser Ala Glu Gly Pro Thr Gly Ile Pro Val Gly Ile Pro Ser Lys
 20 25 30
 Pro Thr Pro Glu Thr Ser Arg Leu Ser Lys Ser Asn Arg Asn Pro Glu
 35 40 45
 Ile Thr Ser Thr Leu Pro Asn Ala Glu Ser Pro Lys Pro Thr Pro Arg
 50 55 60
 Glu Thr Pro Glu Ile Pro Asn Val Arg Lys Arg Ala Pro Glu Ile Ser
 65 70 75 80
 Lys Ser Thr Pro Arg Thr Lys Lys Val Ile Ala Lys Thr Arg Asn Leu
 85 90 95
 Asp Arg Gln Lys Glu Ala Pro Thr Asp Trp Ser Gly Gly Gly Gly Gly
 100 105 110
 Gly Gly

<210>65

<211>167

<212>PRT

<213>Chlamydia pneumoniae

<400>65

Ile Ala Lys Ser Asp Cys Arg Val Trp Ile Arg Leu His Ser Ala Tyr
 1 5 10 15
 Lys Glu Ser Gln Lys Val Ser Ser Leu Glu Thr Gln Ala Cys Thr Tyr

20 25 30
 Arg Glu Tyr Leu Arg Glu Gln Val Gln Gln Phe Glu Thr Gln Gly Val
 35 40 45
 Ser Leu Ile Lys Glu Glu Leu Leu Phe Leu Ser Ser Thr Leu Lys Ser
 50 55 60
 Lys Leu Ser Tyr Asp Pro Leu Ile Ala Asn Ile Pro Cys Met Lys Phe
 65 70 75 80
 Tyr Tyr Gln Tyr Tyr Asp Asp Ile Asp Lys Ala Arg Ala Gln Ser Arg
 85 90 95
 Trp Leu Glu Lys Ser Glu Arg Tyr Arg Asn Ala Lys Arg Arg Phe Gln
 100 105 110
 Glu Ile Val Lys Lys Gly Leu Phe Lys Glu Ala Lys Pro Leu Lys Lys
 115 120 125
 Glu Glu Tyr Arg Leu Leu Gln Glu Glu Arg Ser Asn Lys Glu Lys Arg
 130 135 140
 Leu Ile Tyr Asn Lys Met Ala Val Ala Arg Gln Arg Val Gln Glu Phe
 145 150 155 160
 Glu Ser Met Glu Ile Pro Glu
 165

<210>66

<211>235

<212>PRT

<213>Chlamydia pneumoniae

<400>66

Cys Lys Tyr Thr Tyr His Pro Pro Gln Leu Pro Pro Asp His Ser Val
 1 5 10 15
 Gly Ala Thr Ser Trp Gln Pro Lys Leu Arg Ile Leu Thr Ile Thr Phe
 20 25 30
 Leu Val Leu Gly Val Leu Leu Leu Ile Ser Gly Ala Leu Phe Leu Thr
 35 40 45
 Leu Gly Val Pro Gly Leu Ala Ala Gly Leu Ser Phe Gly Leu Gly Ile
 50 55 60
 Gly Leu Ser Ala Leu Gly Gly Val Leu Val Val Ser Gly Leu Leu Phe
 65 70 75 80
 Phe Leu Ile Arg Arg Gly Val Ser Lys Val Arg Pro Glu Glu Ile Pro
 85 90 95
 Val Thr Pro Ser His Glu Ala Gln Lys Ile Leu Cys Gln Leu Pro Gln
 100 105 110
 Glu Leu Asp Gln Leu Asp Thr Ser Ile Gln Glu Val Val Ser Cys Leu
 115 120 125
 Gly Lys Leu Lys Asp Leu Lys Tyr Glu Asp Gln Gly Leu Leu Thr Glu
 130 135 140
 Val Gln Glu Lys Leu Arg Val Phe Asp Phe Val Arg Lys Asp Met Val
 145 150 155 160
 Thr Glu Phe Leu Glu Leu Gln Gln Val Val Ala Gln Glu Gly Gln Phe
 165 170 175
 Leu Asp Tyr Leu Ile Asn Gln Val Gln Ser Ile Ser His Lys Leu Phe
 180 185 190
 Val Pro Asp Val Asn Ile Gly Ala His Leu Ala Glu Leu Cys Gly Tyr
 195 200 205
 Leu Pro Ser Gly Asp Val Arg Val Glu Arg Leu Lys Arg Ser Ala Arg
 210 215 220
 Gln Val Val Asp Arg Phe His Glu Gly Asp Leu
 225 230 235

<210>67

<211>526

<212>PRT

<213>Chlamydia pneumoniae

<400>67

Arg Glu Cys Cys Gly Val Ala Lys Asn Ala Phe Asp Lys Ala Phe Gly
 1 5 10 15
 Ala Leu Glu Glu Cys Val Tyr Lys Ser Leu Thr Glu Ser Tyr Arg Glu
 20 25 30
 Ala Phe Tyr Glu Tyr Glu Lys Ala Lys Ile Leu Arg Asn Glu Asp Val

	35		40		45												
Glu	Trp	Leu	Gln	Asp	Lys	Asn	Lys	Ser	Ala	Arg	Ala	Glu	Gln	Arg	Phe		
50						55					60						
Arg	Glu	Val	Lys	Asp	Arg	Trp	Glu	Asp	Leu	Lys	Glu	Thr	Val	Phe	Trp		
65					70					75					80		
Val	Lys	Glu	Asn	Gly	Cys	Ile	Asp	Leu	Glu	Val	Leu	Thr	Ala	Val	Gly		
				85					90						95		
Gly	Trp	Pro	Asp	Arg	Gly	Pro	Glu	His	Leu	Ile	Pro	Glu	Lys	Arg	Arg		
		100						105						110			
Asn	Lys	Val	Met	Ser	His	Lys	Leu	Trp	Glu	Ala	Thr	Met	Arg	Met	Lys		
		115					120						125				
Gly	Ala	Glu	Gly	Thr	Tyr	Ser	Val	Ala	Arg	Val	Ala	Phe	Glu	Lys	Asp		
		130				135					140						
Gly	Ser	Arg	Lys	Asn	Gln	Lys	Lys	Phe	Gln	Glu	Lys	Thr	Lys	Glu	Trp		
145					150					155					160		
Leu	Arg	Cys	Leu	Lys	Asp	Leu	His	Asp	Gln	Glu	Cys	His	Arg	Ala	Arg		
				165				170							175		
Glu	Arg	Leu	Ala	Glu	Leu	Glu	Ala	Leu	Tyr	Pro	Glu	Val	Ser	Val	Ser		
			180					185						190			
Val	Val	Glu	Thr	Glu	Arg	Glu	Thr	Lys	Phe	Lys	Leu	Glu	Thr	Ala	Tyr		
		195					200							205			
Gly	Asn	Leu	Glu	Glu	Arg	Tyr	Gln	Ser	Val	Val	Arg	Asp	Gln	Glu	Asp		
		210				215					220						
Tyr	Trp	Lys	Glu	Glu	Glu	Asn	Lys	Glu	Ala	Glu	Phe	Arg	Glu	Lys	Gly		
225					230					235					240		
Thr	Lys	Val	Arg	Ser	Pro	Glu	Glu	Val	Val	Glu	Tyr	Leu	Gln	Ile	Leu		
				245				250							255		
Glu	Asn	Leu	Leu	Glu	Asp	Cys	Ser	Lys	Gln	Leu	Thr	Ile	Ala	Glu	Val		
		260						265						270			
Val	Val	Leu	Gly	Val	Glu	Leu	Glu	Ala	Thr	Ala	Glu	Phe	Glu	Tyr	Thr		
		275					280					285					
Ile	Leu	Ser	Asp	Ala	Ala	Asn	Arg	Leu	Lys	Val	Leu	Cys	Glu	Asp	Ile		
		290				295						300					
Glu	Asp	Ile	Leu	Pro	Arg	Val	Glu	Glu	Ile	Glu	Ile	Met	Leu	Arg	Ile		
305					310					315					320		
Ala	Glu	Leu	Pro	Phe	Leu	Pro	Ile	Lys	Gln	Ala	Phe	Thr	Lys	Ala	Phe		
			325						330					335			
Leu	Gln	Tyr	Asn	Ser	Cys	Lys	Asp	Lys	Leu	Ala	Lys	Val	Glu	Pro	Tyr		
			340					345						350			
Cys	Gln	Glu	Ser	Val	Asp	Tyr	Arg	Arg	Asn	Lys	Glu	Arg	Phe	Gln	Ser		
		355					360					365					
Leu	Asn	Gln	Asp	Leu	Gln	Asn	Val	Tyr	Gln	Glu	Cys	Gln	Lys	Ala	Thr		
		370				375					380						
Gly	Leu	Glu	Ser	Glu	Val	Ser	Ala	Tyr	Arg	Asp	His	Leu	Arg	Glu	Gln		
385					390					395					400		
Ile	Thr	Glu	Phe	Glu	Thr	Gln	Gly	Leu	Asp	Val	Ile	Lys	Glu	Glu	Leu		
				405					410					415			
Leu	Phe	Val	Ser	Ser	Thr	Leu	Lys	Ser	Lys	Leu	Ser	Tyr	Asp	Pro	Leu		
		420						425					430				
Ile	Ala	Asp	Ile	Pro	Cys	Met	Lys	Phe	Tyr	Glu	Glu	Tyr	Tyr	Asp	Gly		
		435					440					445					
Ile	Asp	Lys	Ala	Arg	Val	Gln	Ser	Arg	Trp	Leu	Glu	Lys	Ser	Glu	Arg		
		450				455					460						
Tyr	Arg	Lys	Ala	Lys	Lys	Gly	Phe	Gln	Glu	Met	Leu	Lys	Glu	Gly	Leu		
465					470					475					480		
Phe	Lys	Glu	Asp	Gln	Ala	Leu	Lys	Lys	Ala	Glu	Tyr	Arg	Leu	Leu	Arg		
				485				490							495		
Glu	Lys	Arg	Met	Asn	Lys	Glu	Lys	Leu	Leu	Ile	Cys	Asn	Lys	Ile	Glu		
		500						505						510			
Ala	Ala	Gln	Gln	Arg	Val	Gln	Glu	Phe	Gly	Pro	Ser	Asp	Ser				
		515					520					525					

<210>68

<211>705

<212>PRT

<213>Chlamydia pneumoniae

<400>68

Met Lys Glu Leu Arg His Glu Ser Tyr Asn Arg Ala Leu His Lys Leu
 1 5 10 15
 Ser His Gln Trp Val Arg Tyr Phe Leu Tyr Thr Phe Val Ser Cys Ser
 20 25 30
 Phe Ile Val Ala Ile Phe Thr Phe Ala Trp Leu Lys Val Leu Tyr Val
 35 40 45
 Pro Glu Asn Lys Ala Gly Glu Ile Ser Arg Ile Ser Leu Thr Ala Pro
 50 55 60
 Met Asp Phe Asn Ileu Ser Trp Ser Ala His Lys Phe Tyr Lys Arg Thr
 65 70 75 80
 Ala His Ile Ser Glu Ala Phe Gly Lys Val Tyr His Leu Thr Leu Ser
 85 90 95
 Pro Gly Ser Leu Leu Ser Lys Glu Gly Asn Ala Asp Glu Asn Thr Asp
 100 105 110
 Tyr Trp Phe Lys Lys Ala Ala Asp Phe Leu Leu Ser Thr Asn Phe Val
 115 120 125
 Asp Ser Ser Thr Gln Lys Cys Leu Lys Asp Leu Cys Ile Tyr Pro Pro
 130 135 140
 Leu Leu Gly Lys Glu Lys Lys Thr Leu Glu Ile Asn Ile Asn Ser Asn
 145 150 155 160
 Lys Gly Asn Val Ile Ala Gln Cys Phe Cys His Leu Lys Ile Phe Leu
 165 170 175
 Ile Gln Glu Asn Cys Pro Gln Pro Cys Phe Asp Ala Ile Met Asp Ile
 180 185 190
 Leu Lys Ile Ala Asn Phe Glu Val Ala Val Asp Lys Glu Met Ser Gly
 195 200 205
 Cys Val Lys Gly Glu Leu Leu Gly Lys Arg Cys Ile Glu Lys Ile Thr
 210 215 220
 Lys Gly Thr Pro Ile Leu Glu Lys Tyr Gln Arg Ile Asp Asp Arg Asp
 225 230 235 240
 Ala Lys Ile Leu Lys Gln Leu Arg Ala Gln Leu Leu Ser Val His Thr
 245 250 255
 Leu Phe Ser Cys Arg Ser Leu Trp Gly Ala Ile Phe Val Val Leu Leu
 260 265 270
 Ile Leu Leu Trp Gly Tyr Gly Ala Leu Lys Ala Leu Cys Pro Glu Met
 275 280 285
 Leu Lys Ser Pro Gln Arg Phe Met Leu Tyr Ile Ala Ile Leu Thr Leu
 290 295 300
 Ser Leu Leu Trp Cys Arg Gly Thr Glu Ile Phe Cys Ala Tyr Trp Val
 305 310 315 320
 Ser Tyr Leu Ser Tyr Pro Pro Ile Leu Pro Phe Thr Ala Val Leu Leu
 325 330 335
 Gly Tyr Phe Leu Gly Leu Pro Ile Ala Gly Phe Ser Cys Thr Phe Leu
 340 345 350
 Ala Leu Leu Tyr Thr Leu Gly Ser Asp Leu Trp Asn Asn Ser Trp Phe
 355 360 365
 Leu Ser Ile Asn Leu Leu Cys Ser Trp Arg Ile Leu Val Ser Leu His
 370 375 380
 Arg Val Ser Arg Leu Ser Ser Val Phe Trp Ala Cys Met Lys Leu Gly
 385 390 395 400
 Gly Val Ala Met Gly Ser Leu Leu Met Phe Arg Ile Phe Thr Asn Thr
 405 410 415
 Ile Ser Arg Glu Ala Leu Tyr Ala Asp Gly Ile Glu Ser Phe Val Tyr
 420 425 430
 Ser Leu Ile Thr Ala Ile Ser Val Val Ala Leu Ile Pro Val Phe Glu
 435 440 445
 Ala Ser Phe Gly Ala Ser Thr Asn Phe Ser Leu Leu Thr Tyr Leu Ser
 450 455 460
 Pro Glu Asn Ala Leu Leu Lys Arg Leu Phe Lys Glu Ala Pro Gly Thr
 465 470 475 480
 Tyr Gln His Ser Val Leu Val Gly Ser Leu Ala Glu Ala Ala Gln
 485 490 495

Ala	Ile	Gly	Ala	Asp	Ser	Leu	Tyr	Cys	Leu	Val	Ala	Ala	His	Tyr	His
			500					505					510		
Asp	Ile	Gly	Lys	Leu	Ile	Asn	Pro	Gly	Phe	Phe	Ser	Glu	Asn	Gln	Lys
	515						520					525			
Ile	Leu	Gln	Gln	Ser	Gly	His	Ser	Leu	Ser	Pro	Leu	Glu	Cys	Ala	Lys
	530					535					540				
Met	Ile	Met	Arg	His	Ile	Pro	Glu	Gly	Val	Asn	Leu	Ala	Arg	Gln	Xaa
545					550					555					560
Gly	Leu	Pro	Glu	Ser	Asp	Ile	Gln	Val	Ile	Glu	Glu	His	His	Gly	Thr
				565					570					575	
Ser	Val	Ile	Arg	Ser	Ala	Tyr	Tyr	Ser	His	Met	Val	Glu	Asn	Pro	Ser
			580					585					590		
Thr	Gly	Ser	Phe	Asp	Glu	Glu	Leu	Phe	Arg	Tyr	Ser	Gly	Asn	Lys	Pro
	595						600					605			
Ser	Ser	Lys	Glu	Thr	Thr	Ile	Ile	Met	Ile	Ala	Asp	Ser	Phe	Glu	Ala
	610					615					620				
Ala	Ser	Arg	Ser	Leu	Lys	Asn	Ala	Ser	Leu	Pro	Asp	Leu	Gln	Arg	Leu
625					630					635					640
Ile	Asp	Gln	Ile	Ile	Gln	Gly	Lys	Leu	Gln	Asp	Gly	Gln	Phe	Ser	Cys
				645						650				655	
Ser	Pro	Ile	Thr	Leu	Asp	Glu	Leu	Ala	Leu	Ile	Ser	Lys	Ser	Met	Val
			660					665						670	
Gln	Thr	Leu	Tyr	Gly	Ala	Leu	His	Ser	Arg	Met	Lys	Tyr	Pro	Glu	Ile
	675						680					685			
Ser	Tyr	Gln	Ile	Ser	Met	Asp	Ser	Cys	Pro	Lys	Pro	Ser	Ile	Gly	Gly
	690					695						700			

Thr

705

<210>69

<211>224

<212>PRT

<213>Chlamydia pneumoniae

<400>69

Val	Ile	Ser	Cys	Gln	Gly	Lys	Arg	Pro	Leu	Arg	Tyr	Cys	Phe	Leu	Glu
1				5					10					15	
Ile	Gln	Ile	Leu	Ala	Lys	Ala	Gln	Val	His	Glu	Cys	Ile	Ser	Phe	Xaa
		20						25					30		
Arg	Ser	Trp	Tyr	Pro	Lys	Leu	Trp	Phe	Gln	Leu	Ser	Thr	Thr	Glu	Thr
	35						40					45			
Thr	Gly	Asp	Arg	Glu	Lys	Lys	Ile	Pro	Leu	His	Leu	Val	Glu	Asn	Ser
	50					55					60				
Tyr	Phe	Phe	Thr	Asp	Gly	Val	Asp	Ala	Leu	Val	His	Lys	Gly	Val	Cys
	65				70					75					80
Asp	Leu	Ala	Ile	His	Ser	Ala	Lys	Asp	Leu	Pro	Glu	Thr	Pro	Ser	Leu
				85						90				95	
Pro	Val	Val	Ala	Ile	Thr	Arg	Cys	Leu	His	Pro	Ala	Asp	Leu	Leu	Val
			100					105					110		
Tyr	Ala	Asp	His	Tyr	Val	His	Glu	Pro	Leu	Pro	Leu	Ser	Pro	Arg	Leu
	115						120					125			
Gly	Ser	Ser	Ser	Leu	Arg	Arg	Ser	Ala	Val	Leu	Lys	Gln	Leu	Phe	Pro
	130					135					140				
Gln	Gly	Gln	Ile	Leu	Asp	Ile	Arg	Gly	Thr	Ile	Glu	Glu	Arg	Leu	Asp
145					150					155					160
Gln	Leu	His	Arg	Gly	His	Tyr	Asp	Ala	Ile	Val	Leu	Ala	Lys	Ala	Ala
				165					170					175	
Ser	Leu	Arg	Leu	His	Leu	His	His	Ala	Tyr	Ser	Ile	Glu	Leu	Pro	Pro
			180					185					190		
Pro	Tyr	His	Ala	Leu	Gln	Gly	Ser	Leu	Ala	Ile	Thr	Ala	Lys	Asp	His
	195					200						205			
Ala	Gly	Lys	Trp	Lys	Gln	Leu	Phe	Thr	Pro	Ile	His	Cys	His	Ser	Ser
	210					215						220			

<210>70

<211>334

<212>PRT

<213>Chlamydia pneumoniae

<400>70

Arg Ile Cys Asn Ala Asp Val Phe Glu Ser Glu Ala Leu Asn Ile Ser
 1 5 10 15
 Ser Pro Leu Ile Tyr Leu Phe Pro Glu Thr Asn Leu Asp Asn Ile Lys
 20 25 30
 Gln Gln Ile Ala Thr Leu Glu Pro Asp Ile Leu Ile Ile Asp Ser Ile
 35 40 45
 Gln Ile Ile Phe Asn Pro Thr Leu Asn Ser Ala Pro Gly Ser Val Ala
 50 55 60
 Gln Val Arg Glu Val Thr Tyr Glu Leu Met Gln Ile Ala Lys Ser Ala
 65 70 75 80
 Gln Ile Thr Thr Phe Ile Ile Gly His Val Thr Lys Ser Gly Glu Ile
 85 90 95
 Ala Gly Pro Arg Val Leu Glu His Leu Val Asp Thr Val Leu Tyr Phe
 100 105 110
 Glu Gly Asn Ser His Ala Asn Tyr Arg Met Ile Arg Ser Val Lys Asn
 115 120 125
 Arg Phe Gly Pro Thr Asn Glu Leu Leu Ile Leu Ser Met His Ala Asp
 130 135 140
 Gly Leu Lys Glu Val Ser Asn Pro Ser Gly Leu Phe Leu Gln Glu Lys
 145 150 155 160
 Thr Gly Pro Thr Thr Gly Ser Met Ile Ile Pro Ile Ile Glu Gly Ser
 165 170 175
 Gly Ala Leu Leu Ile Glu Leu Gln Ala Leu Val Ser Ser Ser Pro Phe
 180 185 190
 Ala Asn Pro Val Arg Lys Thr Ala Gly Phe Asp Pro Asn Arg Phe Ser
 195 200 205
 Leu Leu Leu Ala Val Leu Glu Lys Arg Ala Gln Val Lys Leu Phe Thr
 210 215 220
 Met Asp Val Phe Leu Ser Ile Thr Gly Gly Leu Lys Ile Ile Glu Pro
 225 230 235 240
 Ala Ala Asp Leu Gly Ala Leu Leu Ala Val Ala Ser Ser Leu Tyr Asn
 245 250 255
 Arg Leu Leu Pro Asn Asn Ser Ile Val Ile Gly Glu Val Gly Leu Gly
 260 265 270
 Gly Glu Ile Arg His Val Ala His Leu Glu Arg Arg Ile Lys Glu Gly
 275 280 285
 Lys Leu Met Gly Phe Glu Gly Ala Ile Leu Pro Glu Gly Gln Ile Ser
 290 295 300
 Ser Leu Pro Lys Glu Ile Arg Glu Asn Phe Arg Leu Gln Gly Val Lys
 305 310 315 320
 Thr Ile Lys Arg Cys Tyr Pro Ser Val Thr Leu Thr Pro Val
 325 330

<210>71

<211>97

<212>PRT

<213>Chlamydia pneumoniae

<400>71

Glu Thr Tyr Val Pro Leu Leu Pro Pro Arg Glu Glu Ile Leu Pro Leu
 1 5 10 15
 Met Ser Gly Asn Pro Lys Asn Leu Leu Gln Gln Phe Thr Gln Lys Gln
 20 25 30
 Phe Arg Val Leu Pro Val Tyr Gln Ser Thr Ala Val Thr Asp Ala Gln
 35 40 45
 Gly Asn Val Ser Tyr Gln Ile Gln Val Leu Val Asn Gln Glu Val Trp
 50 55 60
 Gly Glu Gly Asn Ala Ser Lys Lys Glu Ala Glu Lys Ile Ala Ala
 65 70 75 80
 Gln Gln Ala Leu Asp Thr Tyr Gly Asn Lys Asn Gln Asn Thr Met Asp
 85 90 95
 Val

<210>72

<211>168

<212>PRT

<213>Chlamydia pneumoniae

<400>72

Ile	Pro	Asn	Ser	Lys	Phe	Lys	Asp	Gly	Ala	Leu	Leu	Ser	Met	His	Pro
1				5					10					15	
Pro	Ile	Asp	Ile	Thr	Ala	Ile	Glu	Ala	Lys	Leu	Asn	Phe	Thr	Phe	Thr
			20					25					30		
Gln	Pro	Lys	Leu	Leu	Glu	Ile	Ala	Leu	Thr	His	Pro	Ser	Tyr	Lys	Asn
		35					40					45			
Glu	Ser	Ala	Val	Gln	Ile	Glu	Asp	Ser	Glu	Arg	Leu	Glu	Phe	Leu	Gly
	50					55				60					
Asp	Ala	Val	Leu	Gly	Leu	Ile	Val	Thr	Glu	His	Leu	Phe	Leu	Leu	Phe
65				70						75					80
Pro	Ser	Met	Asp	Glu	Gly	Thr	Leu	Ser	Thr	Ala	Arg	Ala	Ser	Leu	Val
			85						90					95	
Asn	Ala	Lys	Ala	Cys	Cys	Arg	Tyr	Thr	Thr	Met	Leu	Gly	Ile	Gly	Asp
			100					105					110		
Tyr	Leu	Leu	Ile	Gly	Lys	Gly	Glu	Lys	Ile	Gln	Ser	Glu	Arg	Gly	Arg
		115					120					125			
Leu	Ser	Ala	Tyr	Ala	Asn	Leu	Phe	Glu	Ser	Ile	Leu	Gly	Ala	Val	Tyr
	130					135					140				
Leu	Asp	Gly	Gly	Leu	Ser	Pro	Ala	Arg	Lys	Leu	Thr	Phe	Pro	Ser	Phe
145					150					155					160
Leu	Leu	Glu	Lys	Lys	Phe	Phe	Leu								
				165											

<210>73

<211>165

<212>PRT

<213>Chlamydia pneumoniae

<400>73

Cys	Phe	Trp	Ile	Cys	Tyr	Leu	Ile	Arg	Ile	Arg	Met	Arg	Ser	Ala	Leu
1				5					10					15	
His	Leu	Gln	His	Leu	Arg	His	Phe	His	Asn	His	Gly	Ser	Ile	Leu	Phe
		20						25					30		
Glu	Asn	Leu	Leu	Thr	Ile	Lys	Asp	Cys	Phe	Leu	Leu	Glu	Thr	Lys	Leu
	35						40					45			
Gln	Asn	Phe	Ile	Ala	Lys	Ala	Ser	Lys	Thr	Ile	Asp	Thr	Val	Arg	Trp
	50					55					60				
Arg	Glu	Asn	Ile	Phe	Arg	Ser	Met	Pro	Glu	Ile	Tyr	Thr	Val	Val	Arg
65				70						75					80
Lys	Arg	Arg	Leu	Asp	Phe	Phe	Ala	Ala	Glu	Leu	Val	His	Arg	Pro	Lys
			85						90					95	
Leu	Ser	Leu	Val	Arg	Asp	Leu	Trp	Val	Phe	Pro	Gly	Glu	Glu	Ile	Leu
		100						105					110		
Glu	Gly	Glu	Glu	Asp	Cys	Met	Leu	Phe	Leu	Leu	Leu	Ser	Gly	Asp	Arg
		115					120					125			
Ala	Gly	Ser	Gly	Ile	Phe	Phe	Thr	Gly	Pro	Tyr	Pro	Ser	Asp	Leu	Tyr
	130					135					140				
Glu	Leu	Glu	Lys	Gly	Thr	Thr	Gly	Leu	Leu	Leu	Ala	Phe	Ser	Ser	Val
145					150					155					160
Gly	Ile	Pro	Val	Ile											
				165											

<210>74

<211>595

<212>PRT

<213>Chlamydia pneumoniae

<400>74

Glu	Phe	Leu	Lys	Leu	Ser	Leu	His	Arg	Ile	Ser	Leu	Met	Lys	Glu	Val
1				5					10					15	
Glu	Gln	Arg	Ile	Arg	Ser	Leu	Tyr	Asp	Ala	Val	Thr	Ala	Glu	Asn	Ile
		20						25					30		
Cys	Arg	Trp	Leu	Ser	Asn	Asp	Cys	Thr	Gln	Gln	Asp	Ala	Lys	Thr	Ile
		35					40						45		

Leu Gly Trp Leu Asp Thr Asp Pro Ala Gln Leu Glu Asp Leu Phe Gly
 50 55 60
 Ala Thr Leu Thr Phe Gly Thr Gly Gly Leu Arg Ser Leu Met Gly Ile
 65 70 75 80
 Gly Thr Asn Arg Ile Asn Leu Phe Thr Ile Arg Arg Thr Thr Gln Gly
 85 90 95
 Leu Val Gln Val Leu Arg Ala His Leu Pro His Pro Gly Asp Pro Met
 100 105 110
 Arg Val Val Val Gly Cys Asp Thr Arg His Asn Ser Ile Glu Phe Ala
 115 120 125
 Gln Glu Thr Ala Lys Val Leu Ala Gly Asn Gly Cys Glu Val Phe Leu
 130 135 140
 Phe Gln Tyr Pro Glu Pro Leu Ala Leu Val Ser Phe Thr Val Arg Tyr
 145 150 155 160
 Glu Arg Ala Ile Gly Gly Val Met Ile Thr Ala Ser His Asn Pro Pro
 165 170 175
 Asn Tyr Asn Gly Tyr Lys Val Tyr Met Ala Ser Gly Gly Gln Val Leu
 180 185 190
 Pro Pro Leu Asp Gln Glu Ile Val Ala Ala Cys Ser Ala Val Asn Glu
 195 200 205
 Ile Leu Ser Val Pro Ser Ile Asp His Pro Asn Ile His Leu Ile Gly
 210 215 220
 Lys Glu Tyr Glu Ala Leu Tyr Arg Asp Thr Leu Lys Gln Leu Gln Leu
 225 230 235 240
 Tyr Pro Glu Ala Asn Arg Ile Ser Gly Arg Ser Leu Ser Ile Ser Tyr
 245 250 255
 Ser Pro Leu His Gly Thr Gly Ile Ser Leu Val Pro His Val Leu Lys
 260 265 270
 Asp Trp Gly Phe Leu Ser Val His Leu Val Gln Lys Gln Ala Ile Gly
 275 280 285
 Asp Gly Asp Phe Pro Thr Val Gln Leu Pro Asn Pro Glu Asp Pro Glu
 290 295 300
 Ala Leu Thr Leu Gly Thr Glu Gln Met Leu Ala Asn Asp Asp Asp Leu
 305 310 315 320
 Phe Ile Ala Thr Asp Pro Asp Ala Asp Arg Val Gly Val Val Cys Leu
 325 330 335
 Glu Asp Gly Gln Pro Tyr Arg Phe Asn Gly Asn Gln Met Ala Ser Leu
 340 345 350
 Leu Ala Asp His Ile Leu Gly Ala Trp Ser Lys Thr Arg His Leu Gly
 355 360 365
 Glu His Asp Lys Leu Val Lys Ser Leu Val Thr Thr Glu Met Leu Ser
 370 375 380
 Ala Ile Ala Lys His Tyr His Val Asp Leu Ile Asn Val Gly Thr Gly
 385 390 395 400
 Phe Lys Tyr Ile Gly Glu Lys Ile Glu Ser Trp Arg Asn Ser Thr Asn
 405 410 415
 Lys Phe Val Phe Gly Ala Glu Glu Ser Tyr Gly Cys Leu Tyr Gly Thr
 420 425 430
 His Val Glu Asp Lys Asp Ala Ile Ile Ala Ser Ala Leu Ile Ala Glu
 435 440 445
 Ala Ala Leu Gln Gln Lys Leu Gln Gly Lys Thr Leu Cys Asp Ala Leu
 450 455 460
 Leu Ser Leu Tyr Glu Thr Tyr Gly Tyr Phe Ala Asn Lys Thr Glu Ser
 465 470 475 480
 Val Val Phe Ser Ala Lys Thr Asp Glu Gln Glu Ile Arg Lys Lys Leu
 485 490 495
 Ser His Leu Glu Glu Ile Ser Ser Ala Asn Phe Phe Ser Gly Lys Tyr
 500 505 510
 Gln Val Glu Lys Phe Glu Asn Tyr Lys Gln Gly Ile Gly Phe Asn Leu
 515 520 525
 Leu Ser Lys Asp Ser Tyr Ala Leu Thr Leu Pro Lys Thr Ser Met Leu
 530 535 540
 Cys Tyr Tyr Phe Ser Gly Gly Gly Arg Val Ile Ile Arg Pro Ser Gly
 545 550 555 560

Thr Glu Pro Lys Ile Lys Phe Tyr Phe Glu Met Ser Thr His Tyr Pro
 565 570 575
 Glu Arg Val Thr Asp Lys Glu Ile Gln Lys His Val Lys Gln Arg Val
 580 585 590
 Phe Asn Ile
 595
 <210>75
 <211>214
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>75
 Ile Leu Lys Arg Tyr Val Val Met Ser Phe Val Pro Tyr Ser Leu Pro
 1 5 10 15
 Glu Leu Pro Tyr Asp Tyr Asp Ala Leu Glu Pro Val Ile Ser Ser Glu
 20 25 30
 Ile Met Ile Leu His His Gln Lys His His Gln Ile Tyr Ile Asn Asn
 35 40 45
 Leu Asn Ala Ala Leu Lys Arg Leu Asp Ala Ala Glu Thr Gln Gln Asn
 50 55 60
 Leu Asn Glu Leu Ile Ala Leu Glu Pro Ala Leu Arg Phe Asn Gly Gly
 65 70 75 80
 Gly His Ile Asn His Ser Leu Phe Trp Glu Thr Leu Ala Pro Ile Asp
 85 90 95
 Gln Gly Gly Gly Gln Pro Pro Asn His Glu Leu Leu Ser Leu Ile Glu
 100 105 110
 Arg Phe Trp Gly Thr Met Asp Asn Phe Leu Lys Lys Leu Ile Glu Val
 115 120 125
 Ala Ala Gly Val Gln Gly Ser Gly Trp Ala Trp Leu Gly Phe Cys Pro
 130 135 140
 Ala Lys Gln Glu Leu Val Leu Gln Ala Thr Ala Asn Gln Asp Pro Leu
 145 150 155 160
 Glu Pro Leu Thr Gly Lys Leu Pro Leu Leu Gly Val Asp Val Trp Glu
 165 170 175
 His Ala Tyr Tyr Leu Gln Tyr Lys Asn Val Arg Met Asp Tyr Leu Lys
 180 185 190
 Ala Phe Pro Gln Ile Ile Asn Trp Gly His Ile Glu Asn Arg Phe Ser
 195 200 205
 Glu Ile Ile Ser Ser Lys
 210
 <210>76
 <211>255
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>76
 Ile Arg Trp Leu Val Arg Leu Phe Ser Tyr Asp Lys Pro Lys Ile Lys
 1 5 10 15
 Val Gln Lys Ile Lys Ala Asp Gly Phe Ser Gly Trp Leu Lys Cys Asn
 20 25 30
 His Cys His Glu Met Ile His Ala Asp Glu Leu Gly Gln Asn Tyr Asn
 35 40 45
 Cys Cys Pro Lys Cys Ser Tyr His Tyr Arg Ile Thr Ala Ile Glu Arg
 50 55 60
 Val Lys Leu Leu Ala Asp Lys Asp Ser Trp Arg Pro Leu Tyr Thr Asp
 65 70 75 80
 Leu Lys Ser Gln Asp Pro Leu Glu Phe Ile Asp Thr Asp Thr Tyr Ala
 85 90 95
 Asn Arg Leu Glu Lys Ala Arg Lys Asn Thr Thr Glu Ser Glu Gly Val
 100 105 110
 Ile Val Gly Ile Cys Thr Ile Gly Leu His Pro Val Ala Leu Ala Val
 115 120 125
 Met Asp Phe Asn Phe Met Ala Gly Ser Met Gly Ala Val Val Gly Xas
 130 135 140
 Lys Leu Thr Arg Leu Ile Glu Glu Ala Ile Glu Thr Arg Leu Pro Val
 145 150 155 160

Ile Ile Val Ser Ala Ser Gly Gly Ala Arg Met Gln Glu Ser Val Phe
 165 170 175
 Ser Leu Met Gln Met Val Lys Thr Ser Ala Ala Leu Ala Lys Leu His
 180 185 190
 Glu Ala Gly Leu Pro Tyr Ile Ser Val Leu Thr Asn Pro Thr Ser Gly
 195 200 205
 Gly Val Thr Ala Ser Phe Ala Ala Leu Gly Asp Ile Ile Ile Ala Glu
 210 215 220
 Pro Lys Ala Leu Ile Cys Phe Ala Gly Pro Arg Val Val Ala Gln Val
 225 230 235 240
 Ile Gly Glu Asp Leu Pro Glu Gly Phe Lys Asn Leu Asn Ser Tyr
 245 250 255

<210>77

<211>90

<212>PRT

<213>Chlamydia pneumoniae

<400>77

Ile Cys Asn Ala Ile Leu Met Thr Val Phe Cys Glu Leu Asp Ser Gly
 1 5 10 15
 Gly Glu Leu Pro Glu Tyr Thr Thr Pro Gly Ala Ala Gly Ala Asp Leu
 20 25 30
 Arg Ala Asn Ile Glu Glu Pro Ile Ala Leu Leu Pro Gly Gln Arg Ala
 35 40 45
 Leu Ile Pro Thr Gly Ile Lys Ala Glu Ile Pro Glu Val Arg Ala Thr
 50 55 60
 Gly Pro Ser Ser Glu Arg Phe Gly Phe Lys Ala Arg His Tyr Cys Phe
 65 70 75 80
 Lys Phe Pro Arg Asp Tyr Arg Phe Arg Leu
 85 90

<210>78

<211>101

<212>PRT

<213>Chlamydia pneumoniae

<400>78

Ser Leu Pro Glu Ser Lys Gln Lys Phe Pro Lys Tyr Glu Leu Gln Val
 1 5 10 15
 Arg Pro Arg Ser Gly Leu Ala Leu Lys His Gly Ile Thr Val Leu Asn
 20 25 30
 Ser Pro Gly Thr Ile Asp Ser Asp Tyr Arg Gly Glu Ile Arg Val Ile
 35 40 45
 Leu Ile Asn Phe Gly Asp Ser Thr Phe Ile Ile Glu Pro Lys Met Arg
 50 55 60
 Ile Ala Gln Val Val Leu Ser Pro Val Val Gln Ala Thr Phe Val Val
 65 70 75 80
 Lys Gln Xaa Ser Leu Ala Glu Thr Ala Arg Gly Ser Gly Gly Phe Gly
 85 90 95
 His Thr Gly Ala Ser
 100

<210>79

<211>169

<212>PRT

<213>Chlamydia pneumoniae

<400>79

Val Glu Val Leu Val Ile Leu Glu Gln Ala Lys Met Pro Ser Tyr Cys
 1 5 10 15
 Gln Asn Gln Gln Asp Phe Ser Leu Phe Ser Leu Leu Ser Pro Arg Leu
 20 25 30
 Val Met Phe Leu Gly Lys His Ser Arg Asp Glu Ile Leu Gln Asp Leu
 35 40 45
 Thr Asp Leu Val Asp Ala Ala Gly Leu Leu Glu Asp Lys Gln Ala Phe
 50 55 60
 Phe Asp Ala Leu Val Arg Arg Glu Asn Ile Met Ser Thr Gly Ile Gly
 65 70 75 80
 Met Gly Val Ala Ile Pro His Gly Lys Leu Glu Ser Cys Ser Asn Phe

85 90 95
Phe Ile Ala Ile Gly Ile His Thr Gln Gly Ile Leu Trp Asp Ala Ile
100 105 110
Asp Gly Ala Leu Val Arg Leu Val Phe Leu Ile Gly Gly Pro Glu Asn
115 120 125
Ala Gln Ala Glu Tyr Leu Lys Leu Leu Ser Thr Leu Thr Leu Ser Leu
130 135 140
Arg Glu Glu Ser Arg Arg Gln Gln Leu Leu Gln Val Asn Thr Ile Glu
145 150 155 160
Glu Val Met Asn Val Phe Val Gly Met
165

<210>80

<211>225

<212>PRT

<213>Chlamydia pneumoniae

<400>80

Met Asp Leu Lys Leu Asp Glu Val Ala Ser Leu Leu Asp Val Ser Glu
1 5 10 15
His Thr Val Leu Gln Trp Leu Lys Glu Gly Ala Ile Pro Ser Tyr Ser
20 25 30
Met Asn Asn Glu Tyr Arg Phe Ser Arg Glu Glu Ile Glu Asp Trp Leu
35 40 45
Leu His Asn Gln Ala Leu Met Ile Gln Glu Arg Gly Glu Asp Lys Glu
50 55 60
Ala Leu Lys Asp Leu Ser Leu Lys Tyr Ser Leu Tyr Lys Ala Ile His
65 70 75 80
Arg Gly Gly Val Leu Cys Asp Val Val Val His Ser Lys Glu Glu Ala
85 90 95
Leu Gln Tyr Ala Ser Lys Tyr Ile Ala Glu Lys Phe Gln Leu Asp Glu
100 105 110
Ser Val Leu Phe Glu Met Leu Ser His Arg Glu Asn Leu Met Ser Thr
115 120 125
Gly Ile Gly Glu Gly Ile Ala Leu Pro His Ala Lys Asp Phe Leu Ile
130 135 140
Asn Ala Tyr Tyr Asp Ile Val Val Pro Met Phe Leu Ala Glu Pro Ile
145 150 155 160
Glu Tyr Gly Ala Leu Asp Gly Lys Pro Val Gly Ile Leu Phe Phe Leu
165 170 175
Phe Ala Cys Gln Asp Lys Ser His Leu Asn Leu Val Asn Lys Ile Val
180 185 190
His Leu Gly Met Ser Leu Asn Ala Arg Ser Phe Phe Lys Asn Tyr Pro
195 200 205
Asn Lys Asp Gln Leu Leu Ala Tyr Val Lys Glu Trp Glu Ser Gln Thr
210 215 220

His

225

<210>81

<211>480

<212>PRT

<213>Chlamydia pneumoniae

<400>81

Lys Lys Ser Phe Cys Cys Tyr Gly Asp Pro His Arg Leu Pro Gly Asp
1 5 10 15
Cys Ser Arg Met Met Ser Ser Lys Arg Thr Ser Lys Ile Ala Val Leu
20 25 30
Ser Ile Leu Leu Thr Phe Thr His Ser Ile Gly Phe Ala Asn Ala Asn
35 40 45
Ser Ser Val Gly Leu Gly Thr Val Tyr Ile Thr Ser Glu Val Val Lys
50 55 60
Lys Pro Gln Lys Gly Ser Glu Arg Lys Gln Ala Lys Lys Glu Pro Arg
65 70 75 80
Ala Arg Lys Gly Tyr Leu Val Pro Ser Ser Arg Thr Leu Ser Ala Arg
85 90 95
Ala Gln Lys Met Lys Asn Ser Ser Arg Lys Glu Ser Ser Gly Gly Cys

100 105 110
 Asn Glu Ile Ser Ala Asn Ser Thr Pro Arg Ser Val Lys Leu Arg Arg
 115 120 125
 Asn Lys Arg Ala Glu Gln Lys Ala Ala Lys Gln Gly Phe Ser Ala Phe
 130 135 140
 Ser Asn Leu Thr Leu Lys Ser Leu Leu Pro Lys Leu Pro Ser Lys Gln
 145 150 155 160
 Lys Thr Ser Ile His Glu Arg Glu Lys Ala Thr Ser Arg Phe Val Asn
 165 170 175
 Glu Ser Gln Leu Ser Ser Ala Arg Lys Arg Tyr Cys Thr Pro Ser Ser
 180 185 190
 Ala Ala Pro Ser Leu Phe Leu Glu Thr Glu Ile Val Arg Ala Pro Val
 195 200 205
 Glu Arg Thr Lys Glu Leu Gln Asp Asn Glu Ile His Ile Pro Val Val
 210 215 220
 Gln Val Gln Thr Asn Pro Lys Glu Gln Asn Thr Lys Thr Thr Lys Gln
 225 230 235 240
 Leu Ala Ser Gln Ala Ser Ile Gln Gln Ser Glu Gly Thr Glu Gln Ser
 245 250 255
 Leu Arg Glu Leu Ala Gln Gly Ala Ser Leu Pro Val Leu Val Arg Ser
 260 265 270
 Asn Pro Glu Val Ser Val Gln Arg Gln Lys Glu Glu Leu Leu Lys Glu
 275 280 285
 Leu Val Ala Glu Arg Arg Gln Cys Lys Arg Lys Ser Val Arg Gln Ala
 290 295 300
 Leu Glu Ala Arg Ser Leu Thr Lys Lys Val Ala Arg Gly Gly Ser Val
 305 310 315 320
 Thr Ser Thr Leu Arg Tyr Asp Pro Glu Lys Ala Ala Glu Ile Lys Ser
 325 330 335
 Arg Arg Asn Cys Lys Val Ser Pro Glu Ala Arg Glu Gln Lys Tyr Ser
 340 345 350
 Ser Cys Lys Arg Asp Ala Arg Ala Asn Gly Lys Gln Asp Lys Thr Thr
 355 360 365
 Pro Ser Glu Asp Ala Ser Gln Glu Glu Gln Gln Thr Gly Ala Gly Leu
 370 375 380
 Val Arg Lys Thr Pro Lys Ser Glu Val Ala Ser Asn Ala Gln Asn Phe
 385 390 395 400
 Tyr Arg Asn Ser Lys Asn Thr Asn Ile Asp Ser Tyr Leu Thr Ala Asn
 405 410 415
 Gln Tyr Ser Cys Ser Ser Glu Glu Thr Asp Trp Pro Cys Ser Ser Cys
 420 425 430
 Val Ser Lys Arg Arg Thr His Asn Ser Ile Ser Val Cys Thr Met Val
 435 440 445
 Val Thr Val Ile Ala Met Ile Val Gly Ala Leu Ile Ile Ala Asn Ala
 450 455 460
 Thr Glu Ser Gln Thr Thr Ser Asp Pro Thr Pro Pro Thr Pro Thr Pro
 465 470 475 480

<210>82

<211>590

<212>PRT

<213>Chlamydia pneumoniae

<400>82

Tyr Asp Tyr Tyr Lys Tyr Asn Met Phe Phe Lys Lys Asn Tyr Met Thr
 1 5 10 15
 Asp Phe Pro Thr His Phe Lys Gly Pro Lys Leu Asn Pro Ile Lys Val
 20 25 30
 Asn Pro Asn Phe Phe Glu Arg Asn Pro Lys Val Ala Arg Val Leu Gln
 35 40 45
 Ile Thr Ala Val Val Leu Gly Ile Ile Ala Leu Leu Ser Gly Ile Val
 50 55 60
 Leu Ile Ile Gly Thr Pro Leu Gly Ala Pro Ile Ser Met Ile Leu Gly
 65 70 75 80
 Gly Cys Leu Leu Ala Ser Gly Gly Ala Leu Ph Val Gly Gly Thr Ile
 85 90 95

Ala Thr Ile Leu Gln Ala Arg Asn Ser Tyr Lys Lys Ala Val Asn Gln
 100 105 110
 Lys Lys Leu Ser Glu Pro Leu Met Glu Arg Pro Glu Leu Lys Ala Leu
 115 120 125
 Asp Tyr Ser Leu Asp Leu Lys Glu Val Trp Asp Leu His His Ser Cys
 130 135 140
 Cys Gln His Leu Lys Lys Ile Asp Leu Asn Leu Ser Glu Thr Gln Arg
 145 150 155 160
 Glu Val Leu Asn Gln Ile Lys Ile Asp Asp Glu Gly Pro Ser Leu Gly
 165 170 175
 Glu Cys Ala Ala Met Ile Ser Glu Asn Tyr Asp Ala Cys Leu Lys Met
 180 185 190
 Leu Ala Tyr Arg Glu Glu Leu Leu Lys Glu Gln Thr Gln Tyr Gln Glu
 195 200 205
 Thr Arg Phe Asn Gln Asn Leu Thr His Arg Asn Lys Val Leu Leu Ser
 210 215 220
 Ile Leu Ser Arg Ile Thr Asp Asn Ile Ser Lys Ala Gly Gly Val Phe
 225 230 235 240
 Ser Leu Lys Phe Ser Thr Leu Ser Ser Arg Met Ser Arg Ile His Thr
 245 250 255
 Thr Thr Thr Val Ile Leu Ala Leu Ser Ala Val Val Ser Val Met Val
 260 265 270
 Val Ala Ala Leu Ile Pro Gly Gly Ile Leu Ala Leu Pro Ile Leu Leu
 275 280 285
 Ala Val Ala Ile Ser Ala Gly Val Ile Val Thr Gly Leu Ser Tyr Leu
 290 295 300
 Val Arg Gln Ile Leu Ser Asn Thr Lys Arg Asn Arg Gln Asp Phe Tyr
 305 310 315 320
 Lys Asp Phe Val Lys Asn Val Asp Ile Glu Leu Leu Asn Gln Thr Val
 325 330 335
 Thr Leu Gln Arg Phe Leu Phe Glu Met Leu Lys Gly Val Leu Lys Glu
 340 345 350
 Glu Glu Glu Val Ser Leu Glu Gly Gln Asp Trp Tyr Thr Gln Tyr Ile
 355 360 365
 Thr Asn Ala Pro Ile Glu Lys Arg Leu Ile Glu Glu Ile Arg Val Thr
 370 375 380
 Tyr Lys Glu Ile Asp Ala Gln Thr Lys Lys Met Lys Thr Asp Leu Glu
 385 390 395 400
 Phe Leu Glu Asn Glu Val Arg Ser Gly Arg Leu Ser Val Ala Ser Pro
 405 410 415
 Ser Glu Asp Pro Ser Glu Thr Pro Ile Phe Thr Gln Gly Lys Glu Phe
 420 425 430
 Ala Lys Leu Arg Arg Gln Thr Ser Gln Asn Ile Ser Thr Ile Tyr Gly
 435 440 445
 Pro Asp Asn Glu Asn Ile Asp Pro Glu Phe Ser Leu Pro Trp Met Pro
 450 455 460
 Lys Lys Glu Glu Glu Ile Asp His Ser Leu Glu Pro Val Thr Lys Leu
 465 470 475 480
 Glu Pro Gly Ser Arg Glu Glu Leu Leu Leu Val Glu Gly Val Asn Pro
 485 490 495
 Thr Leu Arg Glu Leu Asn Met Arg Ile Ala Leu Leu Gln Gln Gln Leu
 500 505 510
 Ser Ser Val Arg Lys Trp Arg His Pro Arg Gly Glu His Tyr Gly Asn
 515 520 525
 Val Ile Tyr Ser Asp Thr Glu Leu Asp Arg Ile Gln Met Leu Glu Gly
 530 535 540
 Ala Phe Tyr Asn His Leu Arg Glu Ala Gln Glu Glu Ile Thr Gln Ser
 545 550 555 560
 Leu Gly Asp Leu Val Asp Ile Gln Asn Arg Ile Leu Gly Ile Ile Val
 565 570 575
 Glu Gly Asp Ser Asp Ser Arg Thr Glu Glu Glu Pro Gln Glu
 580 585 590

<210>83

<211>580

<212>PRT

<213>Chlamydia pneumoniae

<400>83

Gly Val Tyr Met Ala Asn Pro Thr Gln Ser Arg Pro Pro Ser Pro Glu
 1 5 10 15
 Ile Ser Ile Glu Leu Glu Leu Gln Glu Leu Ala Gly Ser Ser Asn
 20 25 30
 Thr Glu Thr Ile Ser Asn Thr Pro Pro Pro Ser Cys Ala Ala Thr Ala
 35 40 45
 Glu Glu Val Ser Leu Phe Ile Glu Gly Gly Arg Arg Asn Ser Glu Asp
 50 55 60
 Glu Glu Gly Pro Leu Gly Ser Cys Glu Val Tyr Asp Val Val Cys Ile
 65 70 75 80
 Thr Asn Gln Gly Asp Pro Glu Val Arg Asp His Glu Val Arg Val Met
 85 90 95
 Tyr Ile Asn Gly Ser Gly Arg Thr Gln His Glu Gly Ile Leu Asp Ala
 100 105 110
 Met Asn Ile Cys Asp Leu Arg Gly Glu Pro Val Arg Phe Ile His Asn
 115 120 125
 Ser Gly Tyr Gly Leu Gly Ser Cys Phe Leu Gly Ile Arg Asn Arg Ile
 130 135 140
 Pro Pro Arg Asp Asn Val Ile Ser Gln Ala Ile Gln Ala Arg Trp Asn
 145 150 155 160
 Glu Phe Phe Ile Phe Ala Glu Asn Ala Asn Arg Asp Tyr Ile Val Leu
 165 170 175
 Phe Ser Gly Asn Gly Gly Leu Tyr Leu Gln Val Ala Leu Asp Asn Ser
 180 185 190
 Ile Tyr Ser His His Ile Leu Cys Val Gly Ile Gly Ser Ser Tyr Tyr
 195 200 205
 Ile Gln Gly Asn Tyr Arg Val His Asn Tyr Arg Val Thr Gly Asp Trp
 210 215 220
 Thr Thr Leu Leu Asp Arg Arg Gly Ala Thr Ala Val Asn Thr Thr Thr
 225 230 235 240
 Leu Pro Tyr Ala Asp Ser Ala Glu Gly Leu Phe Leu Pro Ser Val Arg
 245 250 255
 Cys Pro Ser Tyr Gln Trp Ala Leu Arg Cys Gly Glu Gln Cys Leu Ile
 260 265 270
 Met Asp Asn Asn Gln Gln Val Gly Phe Arg Pro Gln Asp Ser Ser Ser
 275 280 285
 Glu Ile Ala Leu Val Val Asn Leu Asn Gln Asp His Ser Thr Trp Thr
 290 295 300
 Arg Leu Ile Glu Trp Ile Asp Arg Gly Asp Ser Gln Ala Val Leu Glu
 305 310 315 320
 Leu Asn Pro Gln Pro Ser His Cys Arg Asp Ile Ala Leu Thr Ala Leu
 325 330 335
 Tyr Ala Thr Thr Arg Ile Ser Ser Leu Leu Gln Glu Cys Leu Met Ile
 340 345 350
 Ser Val Thr Tyr Ala Pro Glu Val Phe Val Thr Tyr Ala Ile Val Thr
 355 360 365
 Gly Tyr Ser Ile Met Thr Leu Arg Tyr Phe Ile Leu Leu Leu Thr Asn
 370 375 380
 Arg Pro Gly Cys Arg Arg His Phe Arg Val Leu Arg Leu Ala Ala Leu
 385 390 395 400
 Gly Leu Gln Ser Leu Gly Phe Leu Thr Val Leu Leu Asp His Ile Asn
 405 410 415
 Val Thr Arg Arg Val Asn Arg Arg Pro Leu Ile Ser Val Ile Phe
 420 425 430
 Cys Thr Ala Ser Phe Ala Thr Gly Ser Phe Ile Tyr Val Asp Leu Thr
 435 440 445
 Arg Met Phe Phe Thr Ser Leu Arg Ser Arg Leu Gln Leu Phe Val Gln
 450 455 460
 Arg Arg Leu Thr Gly Arg Gly Leu Pro Leu Arg Arg Val Phe Val Asn
 465 470 475 480
 His Leu Asp Ser Leu Arg Ph Ser Gln Asn Ala Leu Ile Thr Phe His

485 490 495
 Gly Gly Leu Phe Met Pro Leu Ile Ile Gly Phe Phe Asn Gln Leu Val
 300 505 510
 Ile Gln Val Pro Arg Val Val Ile Arg Pro Asn Thr Thr Ala Val Tyr
 515 520 525
 Asp Leu Asn Gln Thr Ser Gln Glu Ala Trp Asp Ser Gly Asp Val Leu
 530 535 540
 Ala Ile Gly Gln Thr Ile Asn Phe Leu Leu Cys Met Ile Leu Leu Val
 545 550 555 560
 Ile Asn Thr Phe Phe Phe Val Arg Ser Val Arg Arg Asn Leu His Arg
 565 570 575
 Arg Pro His Arg
 580

<210>84

<211>264

<212>PRT

<213>Chlamydia pneumoniae

<400>84

Lys Gly Ser Gly Tyr Ser Tyr Arg Gly Pro Pro Met Ala Val Glu Gly
 1 5 10 15
 Arg Val Asn Ser Ser Gln Ala Leu Asn Gln Asp Cys Gln Glu Val Leu
 20 25 30
 Ala Asn Lys Gln Ser Lys Gly Leu Leu Arg Cys Arg Ile Leu Ser Ile
 35 40 45
 Val Val Ala Val Ile Thr Phe Ile Ala Gly Val Val Leu Ile Ala Leu
 50 55 60
 Thr Leu Ala Ser Ile Leu Thr Ser Val Pro Tyr Leu Ala Leu Gly Val
 65 70 75 80
 Phe Leu Leu Ile Val Thr Leu Gly Cys Ile Ile Phe Ala Leu Cys Ser
 85 90 95
 Glu Lys Ile Lys Lys Val Pro Pro Thr Pro Ile Ser His Lys Glu Glu
 100 105 110
 Ile Ile Ala Trp Phe Glu Glu Arg Lys Asn Ile Asp Met Glu Lys Glu
 115 120 125
 Lys Glu Asp Pro Glu His Phe Gly Arg Thr Ala Thr Asp Ile Pro Met
 130 135 140
 Arg Ser Ala Leu Asp Gln Phe Asn His Ser Cys His His Ile His Glu
 145 150 155 160
 Ser Pro Ala Leu Thr Glu Thr Tyr Arg Ser His Gln Asp Val Leu Leu
 165 170 175
 Phe Lys Asp Trp Cys Pro Val Thr Leu Pro Asp Val Thr Ser Glu Glu
 180 185 190
 Glu Val Leu Ile Arg Ser Val Val Gly Ser Tyr Leu Leu Met Glu Ala
 195 200 205
 Cys Val Pro Lys Val Ser Met Leu Ile Asp Glu Leu His Asn Lys Leu
 210 215 220
 Xaa Ser Pro Ser Glu Arg Glu Cys Leu Phe Ile Asp Lys Lys Thr Leu
 225 230 235 240
 Gln Arg Lys Ala Ser Phe Leu Phe Thr Gln Lys Asp Leu Ala Thr Phe
 245 250 255
 Phe Leu Asp Leu Tyr Ala Gly Glu
 260

<210>85

<211>193

<212>PRT

<213>Chlamydia pneumoniae

<400>85

Ser Phe Met Ile Lys Lys Phe Phe Ile Tyr Ser Leu Ile Phe Ser Cys
 1 5 10 15
 Ser Phe Ser Ala Pro Leu Lys Gly Ile Cys Asn Glu Asp Val Ser Ser
 20 25 30
 Gln Ser Arg Ile Glu Glu Asp Pro Glu Val Leu Ile Thr Gln Leu Asn
 35 40 45
 Glu Leu Ile Glu Thr Pro Ile Glu Glu Gly Lys Glu Ile Arg Asn Glu

50 55 60
 Leu Gln Ala Ile Ser Asp Gly Gln Lys Ser Ser Glu Glu Ile Glu Glu
 65 70 75 80
 Ser Cys Gly Thr Ser Asp Ser Glu Gly Leu Ser Glu Lys Thr Asp Lys
 85 90 95
 Glu Ser Ser Asn Glu Tyr Val Leu Asp Phe Phe Asp Ser Met Val Gln
 100 105 110
 Arg Leu Gln Gly Ile Ser Lys Met Cys Gln Ser Gly Gln Val Ala Gln
 115 120 125
 Ile Ile Asp Cys Phe Asn Arg Glu Phe Asp Ile Arg Asn Arg Glu Leu
 130 135 140
 Glu Leu Lys Asn Arg Glu Leu Glu Leu Arg Glu Lys Asp Leu Glu Phe
 145 150 155 160
 Lys Lys Ser Ile Leu Asp Trp Asn Lys Glu Lys Val Ser Arg Glu Leu
 165 170 175
 Ala Phe Gln Arg Glu Gln Asp Ile Lys Gln Thr Leu Met Leu Leu Lys
 180 185 190
 Lys

<210>86

<211>297

<212>PRT

<213>Chlamydia pneumoniae

<400>86

Asp Phe Lys Ile Trp Gly Ile Arg Ile Thr Ile Ala Val Glu Leu Pro
 1 5 10 15
 Pro Pro Glu Val Gly Gly Glu Leu Pro Pro Tyr Phe Ser Ala Ser Asn
 20 25 30
 Phe Val Val Ile Glu Arg Gly Ala Pro Ser Leu Pro Ser Pro Gln Gln
 35 40 45
 Leu Leu Ser Leu Pro Glu Tyr Ser Arg Gln Pro Pro Gly Tyr Phe
 50 55 60
 Asp Glu Thr Ala Ser Ile Thr Ser Arg Thr Ser Glu Glu Met Phe Gly
 65 70 75 80
 Thr Leu Val Ser Thr Leu Cys Cys Pro Ala Asn Ser Glu Arg Asp Trp
 85 90 95
 Glu Asp His Glu Val Asn Cys Ile Tyr Ile Ala Ser Thr Ser Asp Thr
 100 105 110
 Gln Leu Glu Ala Val Gln Gly Gly Met His Ile Thr Glu Leu Arg Gly
 115 120 125
 Glu Pro Val Arg Val Leu Tyr Glu Thr Gly His Leu Tyr Ala Phe Ala
 130 135 140
 Arg Glu Asn Thr Cys His Ser Arg Leu Glu Val Ser His Thr Val Arg
 145 150 155 160
 Ala Met Thr Tyr Phe Trp Asp Arg Phe Phe Ser Arg His Trp Asn Val
 165 170 175
 Gly Arg Arg Phe Leu Val Phe Tyr Gln Gly Asn Gly Gly Ala Tyr Val
 180 185 190
 Gln Ala Ala Leu Asp Ser Ser Met His Thr Gln Asp Ile Tyr Val Leu
 195 200 205
 Gly Leu Ser Pro Thr Val Tyr Ile Arg Gly Asn Tyr His Val Gln His
 210 215 220
 Tyr Arg Val Arg Gly Phe Trp Pro Ser Cys Leu Asp Ser Leu Ala Ala
 225 230 235 240
 Cys Ala Glu Asn Thr Ser Val Leu Pro Thr Gly Asn Arg Val Thr Glu
 245 250 255
 Ser Phe Thr Pro Leu Tyr Ser Ala Thr His Leu Ile Thr Arg Tyr Gly
 260 265 270
 Met Val Arg Asp Ala Cys Trp Ph Val Leu Arg Ala Trp Glu Cys Phe
 275 280 285
 Gln Lys Arg Asn Asn Lys His Leu Leu
 290 295

<210>87

<211>380

<212>PRT
 <213>Chlamydia pneumoniae
 <400>87
 Arg Glu Leu Ser Arg Thr Ala Leu Pro Cys Ser Arg Ile Leu Ala Leu
 1 5 10 15
 Leu Pro Gly Phe Ser Ser Gly Leu Cys Gly Lys Tyr Ile Ser Thr Ser
 20 25 30
 Tyr Gly Glu Ser Ser Asp Gly Ile Phe Tyr Pro Ser Leu Phe Ser His
 35 40 45
 Thr Phe Asp Asn Ala Ile Arg Tyr Gly Glu Arg Cys Leu Leu Val Cys
 50 55 60
 Ser Glu Gly Met Gly Met Leu Pro Glu Thr Gln Gln Gln Thr Ser Pro
 65 70 75 80
 Leu Thr Ser Leu Glu Gly Gly His Glu Val Ala Leu Val Leu Asn Pro
 85 90 95
 Gln Gln Asn Pro Glu Ala Leu Ser Ile Ala Ser Arg Leu Met His Glu
 100 105 110
 Glu Arg Gly Gly Arg Leu Glu Ser Asn Tyr Met Pro Gly Arg Ser Ser
 115 120 125
 Asn Pro Phe Met Thr Ser Met Tyr Val Leu Val Arg Leu Asn Thr Leu
 130 135 140
 Ala Gln Ile Tyr Leu Met Ser Pro Tyr Tyr Ser Phe Gln Ser Asn Asp
 145 150 155 160
 Ile Val Cys Leu Ile Phe Ile Ser Ser Ala Ala Val Glu Thr Val Ser
 165 170 175
 Tyr Ile Phe Leu Thr Val Thr Asp Ser Thr Cys Gly Arg Arg Tyr Leu
 180 185 190
 Arg Val Pro Arg Leu Val Cys Thr Gly Leu Arg Asn Leu Ala Leu Pro
 195 200 205
 Thr Thr Leu Leu Glu Leu Leu Ile Leu Ser Tyr Pro Arg Ser Val Glu
 210 215 220
 Gly Val Pro Phe Asn Val Arg Phe Ile Leu Gly Tyr Met Cys Thr Thr
 225 230 235 240
 Arg Val Val Phe Phe Ala Trp Asn Leu Ile Leu His Trp Pro Phe Arg
 245 250 255
 Cys Leu Arg His Gly Ile Gln Leu Phe Val His Arg Ser Ile Ile Gly
 260 265 270
 His Thr Leu Gly Ala Arg Ile Thr Asp Leu Thr Leu Ala Ser Met Arg
 275 280 285
 Tyr Ala Ile Val Phe Pro Ser Ile Val Ser Ser Cys Leu Leu Thr Ala
 290 295 300
 Leu Ala His Ala Asn Thr Asn Ile Leu Ala Leu Asp Pro Tyr Arg Leu
 305 310 315 320
 Ile Glu Ser Gly Asp Leu Arg Arg Pro Ala Phe Asn Asp Asp Glu Met
 325 330 335
 Gln Gln Ala Asp Asn Pro Trp Asp Ala Tyr Ser Ile Gly Leu Val Ile
 340 345 350
 Asn Thr Cys Ile Tyr Met Leu Ile Leu Phe Ala Asn Leu Ile Phe Met
 355 360 365
 Val Tyr Ser Val Arg Arg Tyr His Arg Ser Arg Arg
 370 375 380

<210>88
 <211>156
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>88
 Ile Lys Ser Leu Arg Ser Ile Leu Glu Phe Ile Cys Pro Leu Gln His
 1 5 10 15
 Ala Arg Cys Leu Lys Lys Gln His Lys Ile Ile Glu Glu Leu Phe Pro
 20 25 30
 Glu Pro Phe Gln Lys Asp His Leu Tyr Leu Lys Leu Met Glu Asn Ser
 35 40 45
 Ser Ser Arg Asp Ala Phe Asp Lys Lys Arg Met Leu Lys Glu Asn Leu
 50 55 60

Val Val Gly Cys Gln Ser Asp Leu Tyr Leu Tyr Glu Val Tyr Gln Asp
 65 70 75 80
 Gly Ile Leu Phe Phe Phe Thr Tyr Thr Lys Ala Leu Val Ser Ser Gly
 85 90 95
 Ile Ala Ser Leu Phe Thr Glu Val Tyr Ser Gly Glu Thr Pro Ser Thr
 100 105 110
 Ile Leu Thr Cys Lys Pro Ile Phe Phe Gln Arg Leu Thr Pro Tyr Leu
 115 120 125
 Ser Phe Gly Arg Leu Asn Gly Gly Glu Ser Leu Tyr Met Arg Met Lys
 130 135 140
 Gln Ile Ala Val Gln Tyr Leu Lys Pro Pro Gln Thr
 145 150 155
 <210>89
 <211>345
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>89
 Cys Leu Leu Phe Tyr Phe Phe His Tyr Arg Met Ser Thr Pro Leu Ser
 1 5 10 15
 Ser Gly Gly Ile Ser Pro Ser Asp Gln Tyr Val Pro Gln Glu Leu Phe
 20 25 30
 Cys Asp Arg Leu Ser Ser Ser Arg Ser Asn Ser Pro Asp Ser Asn Ala
 35 40 45
 Ser Gly Asp Ser Pro Ile Val Ser Pro Pro Ile Ser Ala Leu Val Ala
 50 55 60
 Leu Thr Asp Leu Lys Leu Val Pro Tyr Asn Gln Asn Ser Phe Ser Trp
 65 70 75 80
 Thr Thr Arg Leu Lys Asn Ala Val Glu Lys Ile Gly Leu Phe Leu Gln
 85 90 95
 Arg Asn Trp Lys Tyr Ile Leu Leu Tyr Ile Leu Ala Trp Ala Leu Ile
 100 105 110
 Leu Val Cys His His Thr Val Ala Leu Thr Leu Thr Ile Trp Leu Gly
 115 120 125
 Val Gly Leu Gly Ile Gly Val Val Phe Gly Ile Phe Thr Ala Thr Cys
 130 135 140
 Leu Asp Lys Glu Asn Lys His Arg His Val Asn Ser Leu Trp Asn Leu
 145 150 155 160
 Ile Asn His Gly Ile Leu Gln Leu Asp Pro Asn Gly Thr Arg Gln Ile
 165 170 175
 Leu Leu Ala Thr Met Ile Ala Ser Ile Ser Ala Leu Ile Tyr Ala Val
 180 185 190
 Pro Gln Ala Val Gly Leu Val Ile Gly Phe Ser Ile Gly Asn Gln Leu
 195 200 205
 Ser Ile Asn Thr Val Tyr Gly Ala Arg Leu Gly Asp Glu Ala Thr Tyr
 210 215 220
 Ala Ile Asp Arg Lys Ala His Lys Lys Arg Ile Glu Asn Ile Glu Gln
 225 230 235 240
 Ala Ile Asn Gln His Gln Ile Ile Lys His Gln Met Ile Asn Gln Lys
 245 250 255
 Gln Leu Asn Ala Leu Ile Glu Ile Asn Arg Asn Asn Gln Thr Asp Pro
 260 265 270
 Ala Thr Ala Asn Leu Leu Ala Ser Leu Lys Leu Asn Leu Asn Gln Pro
 275 280 285
 Met Pro Tyr Cys Phe Ser Met Pro Glu Cys Gly Val Thr Ser Ser Tyr
 290 295 300
 Leu Asp Leu Asn Asn Asn Ser Pro Asp Asp Ile Ile Ala Arg Ala Asp
 305 310 315 320
 Gln Cys Ile Met Thr Leu Ser Gln Thr Leu Gln Gln Ile Lys Lys Glu
 325 330 335
 Pro Asp Arg Ile Ile Glu Ser Asn His
 340 345
 <210>90
 <211>394
 <212>PRT

<213>Chlamydia pneumonia

<400>90

Met Ser Lys Glu Thr Phe Gln Arg Asn Lys Pro His Ile Asn Ile Gly
1 5 10 15
Thr Ile Gly His Val Asp His Gly Lys Thr Thr Leu Thr Ala Ala Ile
20 25 30
Thr Arg Ala Leu Ser Gly Asp Gly Leu Ala Ser Phe Arg Asp Tyr Ser
35 40 45
Ser Ile Asp Asn Thr Pro Glu Lys Ala Arg Gly Ile Thr Ile Asn
50 55 60
Ala Ser His Val Glu Tyr Glu Thr Pro Asn Arg His Tyr Ala His Val
65 70 75 80
Asp Cys Pro Gly His Ala Asp Tyr Val Lys Asn Met Ile Thr Gly Ala
85 90 95
Ala Gln Met Asp Gly Ala Ile Leu Val Val Ser Ala Thr Asp Gly Ala
100 105 110
Met Pro Gln Thr Lys Glu His Ile Leu Leu Ala Arg Gln Val Gly Val
115 120 125
Pro Tyr Ile Val Val Phe Leu Asn Lys Val Asp Met Ile Ser Gln Glu
130 135 140
Asp Ala Glu Leu Ile Asp Leu Val Glu Met Glu Leu Ser Glu Leu Leu
145 150 155 160
Glu Glu Lys Gly Tyr Lys Gly Cys Pro Ile Ile Arg Gly Ser Ala Leu
165 170 175
Lys Ala Leu Glu Gly Asp Ala Asn Tyr Ile Glu Lys Val Arg Glu Leu
180 185 190
Met Gln Ala Val Asp Asp Xaa Ile Pro Thr Pro Glu Arg Glu Ile Asp
195 200 205
Lys Pro Phe Leu Met Pro Ile Glu Asp Val Phe Ser Ile Ser Gly Arg
210 215 220
Gly Thr Val Val Thr Gly Arg Ile Glu Arg Gly Ile Val Lys Val Ser
225 230 235 240
Asp Lys Val Gln Leu Val Gly Leu Gly Glu Thr Lys Glu Thr Ile Val
245 250 255
Thr Gly Val Glu Met Phe Arg Lys Glu Leu Pro Glu Gly Arg Ala Gly
260 265 270
Glu Asn Val Gly Leu Leu Leu Arg Gly Ile Gly Lys Asn Asp Val Glu
275 280 285
Arg Gly Met Val Val Cys Gln Pro Asn Ser Val Lys Pro His Thr Lys
290 295 300
Phe Lys Ser Ala Val Tyr Val Leu Gln Lys Glu Glu Gly Gly Arg His
305 310 315 320
Lys Pro Phe Phe Ser Gly Tyr Arg Pro Gln Phe Phe Phe Arg Thr Thr
325 330 335
Asp Val Thr Gly Val Val Thr Leu Pro Glu Gly Thr Glu Met Val Met
340 345 350
Pro Gly Asp Asn Val Glu Leu Asp Val Glu Leu Ile Gly Thr Val Ala
355 360 365
Leu Glu Glu Gly Met Arg Phe Ala Ile Arg Glu Gly Gly Arg Thr Ile
370 375 380
Gly Ala Gly Thr Ile Ser Lys Ile Asn Ala
385 390

<210>91

<211>88

<212>PRT

<213>Chlamydia pneumoniae

<400>91

Ser Arg Ser Trp Phe Met Lys Gln Gln His Asn Arg Lys Ala Leu Ser
1 5 10 15
Arg Lys Ile Gly Thr Val Lys Lys Gln Ala Lys Phe Ala Gly Ser Phe
20 25 30
Leu Asp Glu Ile Lys Lys Ile Glu Trp Val Ser Lys His Asp Leu Lys
35 40 45
Lys Tyr Ile Lys Val Val Leu Ile Ser Ile Phe Gly Phe Gly Phe Ala

<400>94

Met Thr Lys His Gly Lys Arg Ile Arg Gly Ile Leu Lys Asn Tyr Asp
1 5 10 15
Phe Ser Lys Ser Tyr Ser Leu Arg Glu Ala Ile Asp Ile Leu Lys Gln
20 25 30
Cys Pro Pro Val Arg Phe Asp Gln Thr Val Asp Val Ser Ile Lys Leu
35 40 45
Gly Ile Asp Pro Lys Lys Ser Asp Gln Gln Ile Arg Gly Ala Val Phe
50 55 60
Leu Pro Asn Gly Thr Gly Lys Thr Leu Arg Ile Leu Val Phe Ala Ser
65 70 75 80
Gly Asn Lys Val Lys Glu Ala Val Glu Ala Gly Ala Asp Phe Met Gly
85 90 95
Ser Asp Asp Leu Val Glu Lys Ile Lys Ser Gly Trp Leu Glu Phe Asp
100 105 110
Val Ala Val Ala Thr Pro Asp Met Met Arg Glu Val Gly Lys Leu Gly
115 120 125
Lys Val Leu Gly Pro Arg Asn Leu Met Pro Thr Pro Lys Thr Gly Thr
130 135 140
Val Thr Thr Asp Val Ala Lys Ala Ile Ser Glu Leu Arg Lys Gly Lys
145 150 155 160
Ile Glu Phe Lys Ala Asp Arg Ala Gly Val Cys Asn Val Gly Val Gly
165 170 175
Lys Leu Ser Phe Glu Ser Ser Glu Ile Lys Glu Asn Ile Glu Ala Leu
180 185 190
Ser Ser Ala Leu Ile Lys Ala Lys Pro Pro Ala Ala Lys Gly Gln Tyr
195 200 205
Leu Val Ser Phe Thr Ile Ser Ser Thr Met Gly Pro Gly Ile Ser Ile
210 215 220
Asp Thr Arg Glu Leu Met Ala Ser
225 230

<210>95

<211>170

<212>PRT

<213>Chlamydia pneumoniae

<400>95

Met Lys Gln Glu Lys Thr Leu Leu Leu Gln Glu Val Glu Asp Lys Ile
1 5 10 15
Ser Ala Ala Gln Gly Phe Ile Leu Leu Arg Tyr Leu Arg Phe Thr Ala
20 25 30
Ala Tyr Ser Arg Glu Phe Arg Asn Ser Leu Ser Gly Val Ser Ala Glu
35 40 45
Phe Glu Val Leu Lys Lys Arg Ile Phe Phe Lys Ala Ile Glu Ala Ala
50 55 60
Gly Leu Glu Val Asp Cys Ser Asp Thr Asp Gly His Leu Gly Val Val
65 70 75 80
Phe Ser Cys Gly Asp Pro Val Ser Ala Ala Lys Gln Val Leu Asp Phe
85 90 95
Asn Lys Gln His Lys Asp Ser Leu Val Phe Leu Ala Gly Arg Met Asp
100 105 110
Asn Ala Ser Leu Ser Gly Ala Glu Val Glu Ala Val Ala Lys Leu Pro
115 120 125
Ser Leu Lys Glu Leu Arg Gln Gln Val Val Gly Leu Phe Ala Ala Pro
130 135 140
Met Ser Gln Val Val Gly Ile Met Asn Ser Val Leu Ser Gly Val Ile
145 150 155 160
Ser Cys Val Asp Gln Lys Ala Gly Lys Asn
165 170

<210>96

<211>132

<212>PRT

<213>Chlamydia pneumoniae

<400>96

Val Thr Lys Val Thr Thr Glu Ser Leu Glu Thr Leu Val Glu Lys Leu
1 5 10 15

Ser Asn Leu Thr Val Leu Glu Leu Ser Gln Leu Lys Lys Leu Leu Glu
 20 25 30
 Glu Lys Trp Asp Val Thr Ala Ser Ala Pro Val Val Ala Val Ala Ala
 35 40 45
 Gly Gly Gly Gly Glu Ala Pro Val Ala Ala Glu Pro Thr Glu Phe Ala
 50 55 60
 Val Thr Leu Glu Asp Val Pro Ala Asp Lys Lys Ile Gly Val Leu Lys
 65 70 75 80
 Val Val Arg Glu Val Thr Gly Leu Ala Leu Lys Glu Ala Lys Glu Met
 85 90 95
 Thr Glu Gly Leu Pro Lys Thr Val Lys Glu Lys Thr Ser Lys Ser Asp
 100 105 110
 Ala Glu Asp Thr Val Lys Lys Leu Gln Asp Ala Gly Ala Lys Ala Ser
 115 120 125
 Phe Lys Gly Leu
 130
 <210>97
 <211>1262
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>97
 Leu Ser His Gln Asn Ser Arg Arg Thr Arg Thr Leu Lys Cys Pro Glu
 1 5 10 15
 Arg Val Ser Val Lys Lys Lys Glu Asp Ile Pro Asp Leu Pro Asn Leu
 20 25 30
 Ile Glu Ile Gln Ile Lys Ser Tyr Lys Gln Phe Leu Gln Ile Gly Lys
 35 40 45
 Leu Ala Glu Glu Arg Glu Asn Ile Gly Leu Glu Glu Val Phe Arg Glu
 50 55 60
 Ile Phe Pro Ile Lys Ser Tyr Asn Glu Ala Thr Val Leu Glu Tyr Leu
 65 70 75 80
 Ser Tyr Asn Leu Gly Val Pro Lys Tyr Ser Pro Glu Glu Cys Ile Arg
 85 90 95
 Arg Gly Ile Thr Tyr Ser Val Thr Leu Lys Val Arg Phe Arg Leu Thr
 100 105 110
 Asp Glu Thr Gly Ile Lys Glu Glu Glu Val Tyr Met Gly Thr Ile Pro
 115 120 125
 Leu Met Thr Asp Lys Gly Thr Phe Ile Ile Asn Gly Ala Glu Arg Val
 130 135 140
 Val Val Ser Gln Val His Arg Ser Pro Gly Ile Asn Phe Glu Gln Glu
 145 150 155 160
 Lys His Ser Lys Gly Asn Ile Leu Phe Ser Phe Arg Ile Ile Pro Tyr
 165 170 175
 Arg Gly Ser Trp Leu Glu Ala Ile Phe Asp Ile Asn Asp Leu Ile Tyr
 180 185 190
 Ile His Ile Asp Arg Lys Lys Arg Arg Arg Lys Ile Leu Ala Ile Thr
 195 200 205
 Phe Ile Arg Ala Leu Gly Tyr Ser Ser Asp Ala Asp Ile Ile Glu Glu
 210 215 220
 Phe Phe Thr Ile Gly Glu Ser Ser Leu Arg Ser Glu Lys Asp Phe Ala
 225 230 235 240
 Leu Leu Val Gly Arg Ile Leu Ala Asp Asn Ile Ile Asp Glu Ala Ser
 245 250 255
 Ser Leu Val Tyr Gly Lys Ala Gly Glu Lys Leu Ser Thr Ala Met Leu
 260 265 270
 Lys Arg Met Leu Asp Ala Gly Ile Ala Ser Val Lys Ile Ala Val Asp
 275 280 285
 Ala Asp Glu Asn His Pro Ile Ile Lys Met Leu Ala Lys Asp Pro Thr
 290 295 300
 Asp Ser Tyr Glu Ala Ala Leu Lys Asp Phe Tyr Arg Arg Leu Arg Pro
 305 310 315 320
 Gly Glu Pro Ala Thr Leu Ala Asn Ala Arg Ser Thr Ile Met Arg Leu
 325 330 335
 Phe Phe Asp Pro Lys Arg Tyr Asn Leu Gly Arg Val Gly Arg Tyr Lys

340 345 350
 Leu Asn Arg Lys Leu Gly Phe Ser Ile Asp Asp Glu Ala Leu Ser Gln
 355 360 365
 Val Thr Leu Arg Lys Glu Asp Val Ile Gly Ala Leu Lys Tyr Leu Ile
 370 375 380
 Arg Leu Lys Met Gly Asp Glu Lys Ala Cys Val Asp Asp Ile Asp His
 385 390 395 400
 Leu Ala Asn Arg Arg Val Arg Ser Val Gly Glu Leu Ile Gln Asn Gln
 405 410 415
 Cys Arg Ser Gly Leu Ala Arg Met Glu Lys Ile Val Arg Glu Arg Met
 420 425 430
 Asn Leu Phe Asp Phe Ser Ser Asp Thr Leu Thr Pro Gly Lys Val Val
 435 440 445
 Ser Ala Lys Gly Leu Ala Ser Val Leu Lys Asp Phe Phe Gly Arg Ser
 450 455 460
 Gln Leu Ser Gln Phe Met Asp Gln Thr Asn Pro Val Ala Glu Leu Thr
 465 470 475 480
 His Lys Arg Arg Leu Ser Ala Leu Gly Pro Gly Gly Leu Asn Arg Glu
 485 490 495
 Arg Ala Gly Phe Glu Val Arg Asp Val His Ala Ser His Tyr Gly Arg
 500 505 510
 Ile Cys Pro Ile Glu Thr Pro Glu Gly Pro Asn Ile Gly Leu Ile Thr
 515 520 525
 Ser Leu Ser Ser Phe Ala Lys Ile Asn Glu Phe Gly Phe Ile Glu Thr
 530 535 540
 Pro Tyr Arg Ile Val Arg Asp Gly Ile Val Thr Asp Glu Ile Glu Tyr
 545 550 555 560
 Met Thr Ala Asp Val Glu Glu Glu Cys Val Ile Ala Gln Ala Ser Ala
 565 570 575
 Ser Leu Asp Glu Tyr Asn Met Phe Thr Glu Pro Val Cys Trp Val Arg
 580 585 590
 Tyr Ala Gly Glu Ala Phe Glu Ala Asp Thr Ser Thr Val Thr His Met
 595 600 605
 Asp Val Ser Pro Lys Gln Leu Val Ser Ile Val Thr Gly Leu Ile Pro
 610 615 620
 Phe Leu Glu His Asp Asp Ala Asn Arg Ala Leu Met Gly Ser Asn Met
 625 630 635 640
 Gln Arg Gln Ala Val Pro Leu Leu Lys Thr Glu Ala Pro Val Val Gly
 645 650 655
 Thr Gly Leu Glu Cys Arg Ala Ala Lys Asp Ser Gly Ala Ile Val Val
 660 665 670
 Ala Glu Glu Asp Gly Val Val Asp Phe Val Asp Gly Tyr Lys Val Val
 675 680 685
 Val Ala Ala Lys His Asn Pro Thr Ile Lys Arg Thr Tyr His Leu Lys
 690 695 700
 Lys Phe Leu Arg Ser Asn Ser Gly Thr Cys Ile Asn Gln Gln Pro Leu
 705 710 715 720
 Cys Ala Val Gly Asp Val Ile Thr Lys Gly Asp Val Ile Ala Asp Gly
 725 730 735
 Pro Ala Thr Asp Arg Gly Glu Leu Ala Leu Gly Lys Asn Val Leu Val
 740 745 750
 Ala Phe Met Pro Trp Tyr Gly Tyr Asn Phe Glu Asp Ala Ile Ile Ile
 755 760 765
 Ser Glu Lys Leu Ile Arg Glu Asp Ala Tyr Thr Ser Ile Tyr Ile Glu
 770 775 780
 Glu Phe Glu Leu Thr Ala Arg Asp Thr Lys Leu Gly Lys Glu Glu Ile
 785 790 795 800
 Thr Arg Asp Ile Pro Asn Val Ser Asp Glu Val Leu Ala Asn Leu Gly
 805 810 815
 Glu Asp Gly Ile Ile Arg Ile Gly Ala Glu Val Lys Pro Gly Asp Ile
 820 825 830
 Leu Val Gly Lys Ile Thr Pro Lys Ser Glu Thr Glu Leu Ala Pro Glu
 835 840 845
 Glu Arg Leu Leu Arg Ala Ile Phe Gly Glu Lys Ala Ala Asp Val Lys

850 855 860
 Asp Ala Ser Leu Thr Val Pro Pro Gly Thr Glu Gly Val Val Met Asp
 865 870 875 880
 Val Lys Val Phe Ser Arg Lys Asp Arg Leu Ser Lys Ser Asp Asp Glu
 885 890 895
 Leu Val Glu Glu Ala Val His Leu Lys Asp Leu Gln Lys Gly Tyr Lys
 900 905 910
 Asn Gln Val Ala Thr Leu Lys Thr Glu Tyr Arg Glu Lys Leu Gly Ala
 915 920 925
 Leu Leu Leu Asn Glu Lys Ala Pro Ala Ala Ile Ile His Arg Arg Thr
 930 935 940
 Ala Glu Ile Val Val His Glu Gly Leu Leu Phe Asp Gln Glu Thr Ile
 945 950 955 960
 Glu Arg Ile Glu Gln Glu Asp Leu Val Asp Leu Leu Met Pro Asn Cys
 965 970 975
 Glu Met Tyr Glu Val Leu Lys Gly Leu Leu Ser Asp Tyr Glu Thr Ala
 980 985 990
 Leu Gln Arg Leu Glu Ile Asn Tyr Lys Thr Glu Val Glu His Ile Arg
 995 1000 1005
 Glu Gly Asp Ala Asp Leu Asp His Gly Val Ile Arg Gln Val Lys Val
 1010 1015 1020
 Tyr Val Ala Ser Lys Arg Lys Leu Gln Val Gly Asp Lys Met Ala Gly
 1025 1030 1035 1040
 Arg His Gly Asn Lys Gly Val Val Ser Lys Ile Val Pro Glu Ala Asp
 1045 1050 1055
 Met Pro Tyr Leu Ser Asn Gly Glu Thr Val Gln Met Ile Leu Asn Pro
 1060 1065 1070
 Leu Gly Val Pro Ser Arg Met Asn Leu Gly Gln Val Leu Glu Thr His
 1075 1080 1085
 Leu Gly Tyr Ala Ala Lys Thr Ala Gly Ile Tyr Val Lys Thr Pro Val
 1090 1095 1100
 Phe Glu Gly Phe Pro Glu Gln Arg Ile Trp Asp Met Met Ile Glu Gln
 1105 1110 1115 1120
 Gly Leu Pro Glu Asp Gly Lys Ser Phe Leu Tyr Asp Gly Lys Thr Gly
 1125 1130 1135
 Glu Arg Phe Asp Asn Lys Val Val Ile Gly Tyr Ile Tyr Met Leu Lys
 1140 1145 1150
 Leu Ser His Leu Ile Ala Asp Lys Ile His Ala Arg Ser Ile Gly Pro
 1155 1160 1165
 Tyr Ser Leu Val Thr Gln Gln Pro Leu Gly Gly Lys Ala Gln Met Gly
 1170 1175 1180
 Gly Gln Arg Phe Gly Glu Met Glu Val Trp Ala Leu Glu Ala Tyr Gly
 1185 1190 1195 1200
 Val Ala His Met Leu Gln Glu Ile Leu Thr Val Lys Ser Asp Asp Val
 1205 1210 1215
 Ser Gly Arg Thr Arg Ile Tyr Glu Ser Ile Val Lys Gly Glu Asn Leu
 1220 1225 1230
 Leu Arg Ser Gly Thr Pro Glu Ser Phe Asn Val Leu Ile Lys Glu Met
 1235 1240 1245
 Gln Gly Leu Gly Leu Asp Val Arg Pro Met Val Val Asp Ala
 1250 1255 1260
 <210>98
 <211>1218
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>98
 Leu Glu Lys Ile Met Phe Gly Glu Asn Ser Arg Asp Ile Gly Val Leu
 1 5 10 15
 Ser Lys Glu Gly Leu Phe Asp Lys Leu Glu Ile Gly Ile Ala Ser Asp
 20 25 30
 Ile Thr Ile Arg Asp Lys Trp Ser Cys Gly Glu Il Lys Lys Pro Glu
 35 40 45
 Thr Ile Asn Tyr Arg Thr Phe Lys Pro Glu Lys Gly Gly Leu Phe Cys
 50 55 60

Glu Lys Ile Leu Gly Pro Thr Lys Asp Trp Glu Cys Cys Cys Gly Lys
 65 70 75 80
 Tyr Lys Lys Ile Lys His Lys Gly Ile Val Cys Asp Arg Cys Gly Val
 85 90 95
 Glu Val Thr Leu Ser Lys Val Arg Arg Glu Arg Met Ala His Ile Glu
 100 105 110
 Leu Ala Val Pro Ile Val His Ile Trp Phe Phe Lys Thr Thr Pro Ser
 115 120 125
 Arg Ile Gly Asn Val Leu Gly Met Thr Ala Ser Asp Leu Glu Arg Val
 130 135 140
 Ile Tyr Tyr Glu Glu Tyr Val Val Ile Asp Pro Gly Lys Thr Asp Leu
 145 150 155 160
 Thr Lys Lys Gln Leu Leu Asn Asp Ala Gln Tyr Arg Glu Val Val Glu
 165 170 175
 Lys Trp Gly Lys Asp Ala Phe Val Ala Lys Met Gly Gly Glu Ala Ile
 180 185 190
 Tyr Asp Leu Leu Lys Ser Glu Asp Leu Gln Ser Leu Leu Lys Asp Leu
 195 200 205
 Lys Glu Arg Leu Arg Lys Thr Lys Ser Gln Gln Ala Arg Met Lys Leu
 210 215 220
 Ala Lys Arg Leu Lys Ile Ile Glu Gly Phe Val Ser Ser Ser Asn His
 225 230 235 240
 Pro Glu Trp Met Val Leu Lys Asn Ile Pro Val Val Pro Pro Asp Leu
 245 250 255
 Arg Pro Leu Val Pro Leu Asp Gly Gly Arg Phe Ala Thr Ser Asp Leu
 260 265 270
 Asn Asp Leu Tyr Arg Arg Val Ile Asn Arg Asn Asn Arg Leu Lys Ala
 275 280 285
 Ile Leu Arg Leu Lys Thr Pro Glu Val Ile Val Arg Asn Glu Lys Arg
 290 295 300
 Met Leu Gln Glu Ala Val Asp Ala Leu Phe Asp Asn Gly Arg His Gly
 305 310 315 320
 His Pro Val Met Gly Ala Gly Asn Arg Pro Leu Lys Ser Leu Ser Glu
 325 330 335
 Met Leu Lys Gly Lys Asn Gly Arg Phe Arg Gln Asn Leu Leu Gly Lys
 340 345 350
 Arg Val Asp Tyr Ser Gly Arg Ser Val Ile Ile Val Gly Pro Glu Leu
 355 360 365
 Lys Phe Asn Gln Cys Gly Leu Pro Lys Glu Met Ala Leu Glu Leu Phe
 370 375 380
 Glu Pro Phe Ile Ile Xaa Arg Leu Lys Asp Gln Gly Ser Val Tyr Thr
 385 390 395 400
 Ile Arg Ser Ala Lys Lys Met Ile Gln Arg Gly Ala Pro Glu Val Trp
 405 410 415
 Asp Val Leu Glu Glu Ile Ile Lys Gly His Pro Val Leu Leu Asn Arg
 420 425 430
 Ala Pro Thr Leu His Arg Leu Gly Ile Gln Ala Phe Glu Pro Val Leu
 435 440 445
 Ile Glu Gly Lys Ala Ile Arg Ile His Pro Leu Val Cys Ala Ala Phe
 450 455 460
 Asn Ala Asp Phe Asp Gly Asp Gln Met Ala Val His Val Pro Leu Ser
 465 470 475 480
 Val Glu Ala Gln Leu Glu Ala Lys Val Leu Met Met Ala Pro Asp Asn
 485 490 495
 Ile Phe Leu Pro Ser Ser Gly Lys Pro Val Ala Ile Pro Ser Lys Asp
 500 505 510
 Met Thr Leu Gly Leu Tyr Tyr Leu Met Ala Asp Pro Thr Tyr Phe Pro
 515 520 525
 Glu Glu His Gly Gly Lys Thr Lys Ile Phe Lys Asp Glu Ile Glu Val
 530 535 540
 Leu Arg Ala Leu Asn Asn Gly Gly Phe Ile Asp Asp Val Phe Gly Asp
 545 550 555 560
 Arg Arg Asp Glu Thr Gly Arg Gly Ile His Ile His Glu Lys Ile Lys
 565 570 575

Val Arg Ile Asp Gly Gln Ile Ile Glu Thr Thr Pro Gly Arg Val Leu
 580 585 590
 Phe Asn Arg Ile Val Pro Lys Glu Leu Gly Phe Gln Asn Tyr Ser Met
 595 600 605
 Pro Ser Lys Arg Ile Ser Glu Leu Ile Leu Gln Cys Tyr Lys Lys Val
 610 615 620
 Gly Leu Glu Ala Thr Val Arg Phe Leu Asp Asp Leu Lys Asp Leu Gly
 625 630 635 640
 Phe Ile Gln Ala Thr Lys Ala Ala Ile Ser Met Gly Leu Lys Asp Val
 645 650 655
 Arg Ile Pro Asp Ile Lys Ser His Ile Leu Lys Asp Ala Tyr Asp Lys
 660 665 670
 Val Ala Ile Val Lys Lys Gln Tyr Asp Asp Gly Ile Ile Thr Glu Gly
 675 680 685
 Glu Arg His Ser Lys Thr Ile Ser Ile Trp Thr Glu Val Ser Glu Gln
 690 695 700
 Leu Ser Asp Ala Leu Tyr Val Glu Ile Ser Lys Gln Thr Arg Ser Lys
 705 710 715 720
 His Asn Pro Leu Phe Leu Met Ile Asp Ser Gly Ala Arg Gly Asn Lys
 725 730 735
 Ser Gln Leu Lys Gln Leu Gly Ala Leu Arg Gly Leu Met Ala Lys Pro
 740 745 750
 Asn Gly Ala Ile Ile Glu Ser Pro Ile Thr Ser Asn Phe Arg Glu Gly
 755 760 765
 Leu Thr Val Leu Glu Tyr Ser Ile Ser Ser His Gly Ala Arg Lys Gly
 770 775 780
 Leu Ala Asp Thr Ala Leu Lys Thr Ala Asp Ser Gly Tyr Leu Thr Arg
 785 790 795 800
 Arg Leu Val Asp Val Ala Gln Asp Val Ile Ile Thr Glu Lys Asp Cys
 805 810 815
 Gly Thr Leu Asn His Ile Glu Ile Ser Ala Ile Gly Gln Gly Ser Glu
 820 825 830
 Glu Leu Leu Pro Leu Lys Asp Arg Ile Tyr Gly Arg Thr Val Ala Glu
 835 840 845
 Asp Val Tyr Gln Pro Gly Asp Lys Ser Arg Leu Leu Ala Gln Ser Gly
 850 855 860
 Asp Val Leu Asn Ser Val Gln Ala Glu Ala Ile Asp Asp Ala Gly Ile
 865 870 875 880
 Glu Thr Ile Lys Ile Arg Ser Thr Leu Thr Cys Glu Ser Pro Arg Gly
 885 890 895
 Val Cys Ala Lys Cys Tyr Gly Leu Asn Leu Ala Asn Gly Arg Leu Ile
 900 905 910
 Gly Met Gly Glu Ala Val Gly Ile Ile Ala Ala Gln Ser Ile Gly Glu
 915 920 925
 Pro Gly Thr Gln Leu Thr Met Arg Thr Phe His Leu Gly Gly Ile Ala
 930 935 940
 Ala Thr Ser Ser Thr Pro Glu Ile Ile Thr Asn Ser Asp Gly Ile Leu
 945 950 955 960
 Val Tyr Met Asp Leu Arg Val Val Leu Gly Gln Glu Gly His Asn Leu
 965 970 975
 Val Leu Asn Lys Lys Gly Ala Leu His Val Val Gly Asp Glu Gly Arg
 980 985 990
 Thr Leu Asn Glu Tyr Lys Lys Leu Leu Ser Thr Lys Ser Ile Glu Ser
 995 1000 1005
 Leu Glu Val Phe Pro Val Glu Leu Gly Val Lys Ile Leu Val Ala Asp
 1010 1015 1020
 Gly Thr Pro Val Ser Gln Gly Gln Arg Ile Ala Glu Val Glu Leu His
 1025 1030 1035 1040
 Asn Ile Pro Ile Ile Cys Asp Lys Pro Gly Phe Ile Lys Tyr Glu Asp
 1045 1050 1055
 Leu Val Glu Gly Ile Ser Thr Glu Lys Val Val Asn Lys Asn Thr Gly
 1060 1065 1070
 Leu Val Glu Leu Ile Val Lys Gln His Arg Gly Glu Leu His Pro Gln
 1075 1080 1085

Ile Ala Ile Tyr Asp Asp Ala Asp Leu Ser Glu Leu Val Gly Thr Tyr
 1090 1095 1100
 Ala Ile Pro Ser Gly Ala Ile Ile Ser Val Glu Glu Gly Gln Arg Val
 1105 1110 1115 1120
 Asp Pro Gly Met Leu Leu Ala Arg Leu Pro Arg Gly Ala Ile Lys Thr
 1125 1130 1135
 Lys Asp Ile Thr Gly Gly Leu Pro Arg Val Ala Glu Leu Val Glu Ala
 1140 1145 1150
 Arg Lys Pro Glu Asp Ala Ala Asp Ile Ala Lys Ile Asp Gly Val Val
 1155 1160 1165
 Asp Phe Lys Gly Ile Gln Lys Asn Lys Arg Ile Leu Val Val Cys Asp
 1170 1175 1180
 Glu Met Thr Gly Met Glu Glu Glu His Leu Ile Pro Leu Thr Lys His
 1185 1190 1195 1200
 Leu Ile Val Gln Arg Gly Asp Ser Val Ile Lys Gly Ser Ser Leu Pro
 1205 1210 1215
 Met Val

<210>99

<211>186

<212>PRT

<213>Chlamydia pneumoniae

<400>99

Gly Gln Gln Leu Thr Asp Gly Leu Val Val Pro His Glu Ile Leu Glu
 1 5 10 15
 Ile Cys Gly Val Arg Glu Leu Gln Lys Tyr Leu Val Asn Glu Val Gln
 20 25 30
 Glu Val Tyr Arg Leu Gln Gly Val Asp Ile Asn Asp Lys His Ile Glu
 35 40 45
 Ile Ile Val Arg Gln Met Leu Gln Lys Val Arg Ile Thr Asp Pro Gly
 50 55 60
 Asp Thr Thr Leu Leu Phe Gly Glu Asp Val Asn Lys Lys Glu Phe Tyr
 65 70 75 80
 Glu Glu Asn Arg Arg Thr Glu Glu Asp Gly Gly Lys Pro Ala Gln Ala
 85 90 95
 Val Pro Val Leu Leu Gly Ile Thr Lys Ala Ser Leu Gly Thr Glu Ser
 100 105 110
 Phe Ile Ser Ala Ala Ser Phe Gln Asp Thr Thr Arg Val Leu Thr Asp
 115 120 125
 Ala Ala Cys Cys Ser Lys Thr Asp Tyr Leu Leu Gly Phe Lys Glu Asn
 130 135 140
 Val Ile Met Gly His Met Ile Pro Gly Gly Thr Gly Phe Glu Thr His
 145 150 155 160
 Lys Arg Ile Lys Gln Tyr Leu Glu Lys Glu Gln Glu Asp Leu Val Phe
 165 170 175
 Asp Phe Val Ser Glu Thr Glu Cys Val Xaa
 180 185

<210>100

<211>337

<212>PRT

<213>Chlamydia pneumoniae

<400>100

Leu Glu Ile Asn Ser Asp Ala Lys Val Pro Met Ser Asn Gln Phe Asp
 1 5 10 15
 Gln Leu Lys Lys Leu Ser Thr Ile Val Cys Asp Ser Gly Asp Pro Glu
 20 25 30
 Leu Val Lys Ala Ser Gly Ser Gln Asp Ala Thr Thr Asp Pro Ser Leu
 35 40 45
 Ile Leu Lys Val Ala Gln Glu Pro Lys Phe Gln Glu Leu Leu Asn Glu
 50 55 60
 Ala Val Val Trp Gly Ile Arg Gln Asn Gly Asp Asp Leu Gln Thr Leu
 65 70 75 80
 Ser Phe Ile Leu Asp Lys Ile Gln Val Asn Phe Ala Leu Glu Ile Ile
 85 90 95

Lys Asn Ile Pro Gly Arg Ile Ser Leu Glu Ile Asp Ala Arg Leu Ser
 100 105 110
 Phe Asn Val Glu Ala Met Val Gln Arg Ala Val Phe Leu Ser Gln Leu
 115 120 125
 Phe Glu Ala Met Gly Gly Asp Lys Lys Arg Leu Leu Val Lys Ile Pro
 130 135 140
 Gly Thr Trp Glu Gly Ile Arg Ala Val Glu Phe Leu Glu Ala Lys Gly
 145 150 155 160
 Ile Ala Cys Asn Val Thr Leu Ile Phe Asn Leu Val Gln Ala Ile Ala
 165 170 175
 Ala Ala Lys Ala Lys Ala Thr Leu Ile Ser Pro Phe Val Gly Arg Ile
 180 185 190
 Tyr Asp Trp Trp Ile Ala Ala Tyr Gly Asp Glu Gly Tyr Ser Ile Asp
 195 200 205
 Ala Asp Pro Gly Val Ala Ser Val Ser Asn Ile Tyr Ala Tyr Tyr Lys
 210 215 220
 Lys Phe Gly Ile Pro Thr Gln Ile Met Ala Ala Ser Phe Arg Thr Lys
 225 230 235 240
 Glu Gln Val Leu Ala Leu Ala Gly Cys Asp Leu Leu Thr Ile Ser Pro
 245 250 255
 Lys Leu Leu Asp Glu Leu Lys Lys Ser Gln His Pro Val Lys Lys Glu
 260 265 270
 Leu Asp Pro Ala Glu Ala Lys Lys Leu Asp Val Gln Pro Ile Glu Leu
 275 280 285
 Thr Glu Ser Phe Phe Arg Phe Leu Met Asn Glu Asp Ala Met Ala Thr
 290 295 300
 Xaa Lys Leu Ala Glu Gly Ile Arg Ile Phe Ala Gly Asp Thr Gln Ile
 305 310 315 320
 Leu Glu Thr Ala Ile Thr Glu Phe Ile Lys Gln Ile Ala Ala Glu Gly
 325 330 335
 Ala

<210>101

<211>132

<212>PRT

<213>Chlamydia pneumoniae

<400>101

Ser Glu Met Lys Asn Lys Met Asp Tyr Lys Ser Gln Leu Val Phe Ser
 1 5 10 15
 Cys Pro Cys Cys Cys Lys Gly Asn Val Cys Phe Ser Val Phe Asn Leu
 20 25 30
 Asp Val Ile Leu Thr Cys Asn Val Cys Ser Ser Thr Tyr Thr Phe Asp
 35 40 45
 Ser Val Ile Arg Asn Glu Ile Arg Gln Phe Val Ala Leu Cys Lys Arg
 50 55 60
 Ile His Asp Ala Asn Ser Ile Leu Gly Asn Ala Thr Val Ser Val Ser
 65 70 75 80
 Val Glu Asp Asn Gln Met Asp Ile Pro Phe Gln Leu Leu Phe Ser Arg
 85 90 95
 Phe Pro Val Val Leu Asn Leu Ser Leu Asp Gly Lys Lys Ile Ala Ile
 100 105 110
 Arg Phe Leu Phe Asp Ala Leu Asn Thr Ser Ile Leu His Gln Glu Ser
 115 120 125
 Asp Leu Ile Ser
 130

<210>102

<211>192

<212>PRT

<213>Chlamydia pneumoniae

<400>102

Asn Lys Ser Thr Ala Arg Lys Lys Ile Gly Lys Phe Glu Lys Lys Pro
 1 5 10 15
 Ser Leu Ser Pro Val Gln Trp Val Arg Tyr Ser Gly Lys Asn Tyr Ser
 20 25 30

Ile Gln Thr Pro Ser Leu Trp Gln Cys Ile Asp Asp Lys Thr Gln Leu
 35 40 45
 Pro Glu Lys Leu Asp Val Leu Leu Ile Gly Lys Gly Lys Gly Asn Leu
 50 55 60
 Thr Pro Thr Ile Asn Ile Ala Gln Glu Ile Thr Ser Lys Ser Ser Lys
 65 70 75 80
 Glu Tyr Ile Glu Glu Ile Leu Ala Tyr His Lys Ala Asn Glu Met Thr
 85 90 95
 Leu Glu Ser Gly Ile Phe Thr Gln Ile Gln Ser Pro Ser Gly Glu Phe
 100 105 110
 Thr Ile Ile Lys Thr Glu Lys Asn Ser Ser Trp Gly Arg Val Phe Cys
 115 120 125
 Leu Glu Ala Thr Thr Val Ile Asp His Thr Ala Tyr Ile Phe Thr Ser
 130 135 140
 Thr Ala Thr Leu Asp Asp Tyr Ala Glu Leu Ser Phe Thr Phe Leu Lys
 145 150 155 160
 Val Val Ser Ser Phe Gln Ile Arg Gly Gly Lys Glu Ala Thr Ser Gly
 165 170 175
 Asp Ala Ile Leu Glu Lys Ala Leu Glu Ala Leu Gln Asn Glu Asn Lys
 180 185 190

<210>103

<211>163

<212>PRT

<213>Chlamydia pneumoniae

<400>103

Asn Ile Met Ala Asn Leu Asn Ala Asp Gly Lys Leu Lys Gln Ile Cys
 1 5 10 15
 Asp Ala Leu Arg Leu Asp Thr Leu Lys Pro Ala Glu Asp Glu Ala Ala
 20 25 30
 Ala Leu Leu His Asn Ala Lys Glu Gln Ala Lys Arg Ile Ile Gln Glu
 35 40 45
 Ala Gln Glu Glu Ala Arg Lys Ile Leu Glu Thr Ala Glu Glu Arg Ala
 50 55 60
 His Gln Lys Ile Lys Gln Gly Glu Val Ala Leu Ser Gln Ala Gly Lys
 65 70 75 80
 Arg Ala Leu Glu Ala Leu Lys Gln Ala Val Glu Asn Lys Ile Phe Arg
 85 90 95
 Glu Ser Leu Val Glu Trp Leu Glu His Val Thr Thr Asp Pro Glu Val
 100 105 110
 Ser Thr Lys Leu Ile Gln Ala Leu Val Gln Ala Leu Glu Ala Gln Gly
 115 120 125
 Val Ser Gly Asn Leu Thr Ala Tyr Ile Gly Lys His Val Ser Pro Arg
 130 135 140
 Ala Val Asn Glu Leu Leu Arg Lys Gly Cys Asn Asn Lys Asn Tyr Glu
 145 150 155 160
 Arg Lys Val

<210>104

<211>211

<212>PRT

<213>Chlamydia pneumoniae

<400>104

Ser His Glu Lys Ile Phe Ser Ile Phe Lys Val Val Val Met Thr Gln
 1 5 10 15
 Tyr Tyr Phe Leu Ser Ser Phe Leu Pro Thr Gln Leu Pro Glu Ser Val
 20 25 30
 Pro Leu Phe Ser Ile Ser Asp Leu Asp Asp Leu Leu Tyr Leu Asn Leu
 35 40 45
 Ser Glu Asn Asp Leu Cys Asn Tyr Gly Leu Leu Lys Arg Phe Phe Asp
 50 55 60
 Phe Glu Asn Phe Ala Phe Phe Trp Ala Gly Lys Pro Ile Pro Phe Ser
 65 70 75 80
 Phe Gly Glu Val Thr Gln Glu Asn Val Glu Arg Met Leu Ser Ser Gln
 85 90 95

Gln Trp Ser Asp Asp Asn Asp Phe Glu Asp Phe Phe Lys Asp Phe Leu
 100 105 110
 Met Asn His Lys Ser Ser Gln Asp Arg Leu Asn His Phe Ser Asp Leu
 115 120 125
 Phe Arg Glu Phe Leu Ser Tyr His Gln Thr Asn Ser Ser Lys Phe Leu
 130 135 140
 Gln Asp Tyr Phe Arg Phe Gln Gln Gln Leu Arg Val Val Leu Ala Gly
 145 150 155 160
 Phe Arg Ala Arg Val Leu Asn Met Asp Val Ser Tyr Val Leu Arg Asp
 165 170 175
 Glu Asp Ser Ser Asp Pro Val Val Leu Glu Val Leu Met Gln Lys Asp
 180 185 190
 Ser Pro Asn Tyr Glu Xaa Pro Glu Glu Phe Xaa Asp Leu Glu Gly Val
 195 200 205
 Leu Asp Asp
 210
 <210>105
 <211>440
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>105
 Lys Arg Gln Ser Asn Gly Asn Ser Phe Arg Thr Lys Leu Ala Gln Gly
 1 5 10 15
 His Val Ile Glu Ala Tyr Gly Asn Leu Leu Arg Val Arg Phe Asp Gly
 20 25 30
 Tyr Val Arg Gln Gly Glu Val Ala Tyr Val Asn Val Asp Asn Thr Trp
 35 40 45
 Leu Lys Ala Glu Val Ile Glu Val Ala Asp Gln Glu Val Lys Val Gln
 50 55 60
 Val Phe Glu Asp Thr Gln Gly Ala Cys Arg Gly Ala Leu Val Thr Phe
 65 70 75 80
 Ser Gly His Leu Leu Glu Ala Glu Leu Gly Pro Gly Leu Leu Gln Gly
 85 90 95
 Ile Phe Asp Gly Leu Gln Asn Arg Leu Glu Val Leu Ala Glu Asp Ser
 100 105 110
 Ser Phe Leu Gln Arg Gly Lys His Val Asn Ala Ile Ser Asp His Asn
 115 120 125
 Leu Trp Asn Tyr Thr Pro Val Ala Ser Val Gly Asp Thr Leu Arg Arg
 130 135 140
 Gly Asp Leu Leu Gly Thr Val Pro Glu Gly Arg Phe Thr His Lys Ile
 145 150 155 160
 Met Val Pro Phe Ser Cys Phe Gln Glu Val Thr Leu Thr Trp Val Ile
 165 170 175
 Ser Glu Gly Thr Tyr Asn Ala His Thr Val Val Ala Lys Ala Arg Asp
 180 185 190
 Ala Gln Gly Lys Glu Cys Ala Phe Thr Met Val Gln Arg Trp Pro Ile
 195 200 205
 Lys Gln Ala Phe Ile Glu Gly Glu Lys Ile Pro Ala His Lys Ile Met
 210 215 220
 Asp Val Gly Leu Arg Ile Leu Asp Thr Glu Ile Pro Val Leu Lys Gly
 225 230 235 240
 Gly Thr Phe Cys Thr Pro Gly Pro Phe Gly Ala Gly Lys Thr Val Leu
 245 250 255
 Gln His His Leu Ser Lys Tyr Ala Ala Val Asp Ile Val Ile Leu Cys
 260 265 270
 Ala Cys Gly Glu Arg Ala Gly Glu Val Val Glu Val Leu Gln Glu Phe
 275 280 285
 Pro His Leu Ile Asp Pro His Thr Gly Lys Ser Leu Met His Arg Thr
 290 295 300
 Cys Ile Ile Cys Asn Thr Ser Ser Met Pro Val Ala Ala Arg Glu Ser
 305 310 315 320
 Ser Ile Tyr Leu Gly Val Thr Ile Ala Glu Tyr Tyr Arg Gln Met Gly
 325 330 335
 Leu Asp Ile Leu Leu Leu Ala Asp Ser Thr Ser Arg Trp Ala Gln Ala

340 345 350
 Leu Arg Glu Ile Ser Gly Arg Leu Glu Glu Ile Pro Gly Glu Glu Ala
 355 360 365
 Phe Pro Ala Tyr Leu Ser Ser Arg Ile Ala Ala Phe Tyr Glu Arg Gly
 370 375 380
 Gly Ala Ile Thr Thr Lys Asp Gly Ser Glu Gly Ser Leu Thr Ile Cys
 385 390 395 400
 Gly Ala Val Ser Pro Ala Gly Gly Asn Phe Glu Glu Pro Val Thr Gln
 405 410 415
 Ser Thr Leu Ala Val Val Gly Ala Phe Cys Gly Leu Ser Lys Ala Arg
 420 425 430
 Leu Thr His Val Gly Ile Leu Gln
 435 440

<210>106

<211>185

<212>PRT

<213>Chlamydia pneumoniae

<400>106

Arg Thr Ser His Ser Ile Tyr Ile Ser Cys Ser Arg Ser Val Leu Trp
 1 5 10 15
 Ser Phe Lys Ser Thr Thr Asp Ala Arg Arg Tyr Pro Ser Ile Asp Pro
 20 25 30
 Leu Ile Ser Trp Ser Lys Tyr Leu Asn Gln Val Gly Gln Ile Leu Glu
 35 40 45
 Glu Lys Val Ser Gly Trp Gly Gly Ala Val Lys Lys Ala Ala Gln Phe
 50 55 60
 Leu Glu Lys Gly Ser Glu Ile Gly Lys Arg Met Glu Val Val Gly Glu
 65 70 75 80
 Glu Gly Val Ser Met Glu Asp Met Glu Ile Tyr Leu Lys Ala Glu Leu
 85 90 95
 Tyr Asp Phe Cys Tyr Leu Gln Gln Asn Ala Phe Asp Pro Val Asp Cys
 100 105 110
 Tyr Cys Pro Phe Glu Arg Gln Ile Glu Leu Phe Ser Leu Ile Ser Arg
 115 120 125
 Ile Phe Asp Ala Lys Phe Val Phe Asp Ser Pro Asp Asp Ala Arg Ser
 130 135 140
 Phe Phe Leu Glu Leu Gln Ser Lys Ile Lys Thr Leu Asn Gly Leu Lys
 145 150 155 160
 Phe Leu Ser Glu Glu Tyr His Glu Ser Lys Glu Val Ile Val Arg Leu
 165 170 175
 Leu Glu Lys Thr Met Val Gln Met Ala
 180 185

<210>107

<211>438

<212>PRT

<213>Chlamydia pneumoniae

<400>107

Met Gln Thr Ile Tyr Thr Lys Ile Thr Asp Ile Lys Gly Asn Leu Ile
 1 5 10 15
 Thr Val Glu Ala Glu Gly Ala Arg Leu Gly Glu Leu Ala Thr Ile Thr
 20 25 30
 Arg Ser Asp Gly Arg Ser Ser Tyr Ala Ser Val Leu Arg Phe Asp Leu
 35 40 45
 Lys Lys Val Thr Leu Gln Val Phe Gly Gly Thr Ser Gly Leu Ser Thr
 50 55 60
 Gly Asp His Val Thr Phe Leu Gly Arg Pro Met Glu Val Thr Phe Gly
 65 70 75 80
 Ser Ser Leu Leu Gly Arg Arg Leu Asn Gly Ile Gly Lys Pro Ile Asp
 85 90 95
 Asn Glu Gly Glu Cys Phe Gly Glu Pro Ile Glu Ile Ala Thr Pro Thr
 100 105 110
 Phe Asn Pro Val Cys Arg Ile Val Pro Arg Ser Met Val Arg Thr Asn
 115 120 125
 Ile Pro Met Ile Asp Val Phe Asn Cys Leu Val Lys Ser Gln Lys Ile

130 135 140
 Pro Ile Phe Ser Ser Ser Gly Glu His His Asn Ala Leu Leu Met Arg
 145 150 155 160
 Ile Ala Ala Gln Thr Asp Ala Asp Ile Val Val Ile Gly Gly Met Gly
 165 170 175
 Leu Thr Phe Val Asp Tyr Ser Phe Phe Val Glu Glu Ser Lys Lys Leu
 180 185 190
 Gly Phe Ala Asp Lys Cys Val Met Phe Ile His Lys Ala Val Asp Ala
 195 200 205
 Pro Val Glu Cys Val Leu Val Pro Asp Met Ala Leu Ala Cys Ala Glu
 210 215 220
 Lys Phe Ala Val Glu Glu Lys Lys Asn Val Leu Val Leu Leu Thr Asp
 225 230 235 240
 Met Thr Ala Phe Ala Asp Ala Leu Lys Glu Ile Ser Ile Thr Met Asp
 245 250 255
 Gln Ile Pro Ala Asn Arg Gly Tyr Pro Gly Ser Leu Tyr Ser Asp Leu
 260 265 270
 Ala Leu Arg Tyr Glu Lys Ala Val Glu Ile Ala Asp Gly Gly Ser Ile
 275 280 285
 Thr Leu Ile Thr Val Thr Thr Met Pro Ser Asp Asp Ile Thr His Pro
 290 295 300
 Val Pro Asp Asn Thr Gly Tyr Ile Thr Glu Gly Gln Phe Tyr Leu Arg
 305 310 315 320
 Asn Asp Arg Ile Asp Pro Phe Gly Ser Leu Ser Arg Leu Lys Gln Leu
 325 330 335
 Val Ile Gly Lys Val Thr Arg Glu Asp His Gly Asp Leu Ala Asn Ala
 340 345 350
 Leu Ile Arg Leu Tyr Ala Asp Ser Arg Lys Ala Thr Glu Arg Met Ala
 355 360 365
 Met Gly Phe Lys Leu Ser Asn Trp Asp Lys Lys Leu Leu Ala Phe Ser
 370 375 380
 Glu Leu Phe Glu Thr Arg Leu Met Ser Leu Glu Val Asn Ile Pro Leu
 385 390 395 400
 Glu Glu Ala Leu Asp Ile Gly Trp Lys Ile Leu Ala Gln Ser Phe Thr
 405 410 415
 Ser Glu Glu Val Gly Ile Lys Ala Gln Leu Ile Asn Lys Tyr Trp Pro
 420 425 430
 Lys Ala Cys Leu Ser Lys
 435
 <210>108
 <211>214
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>108
 Val Leu Ala Lys Ser Met Ser Val Gln Val Lys Leu Thr Lys Asn Ser
 1 5 10 15
 Phe Arg Leu Glu Lys Gln Lys Leu Ala Arg Leu Gln Thr Tyr Leu Pro
 20 25 30
 Thr Leu Lys Leu Lys Lys Ala Leu Leu Gln Ala Glu Val Gln Asn Ala
 35 40 45
 Val Lys Asp Ala Ala Glu Cys Asp Lys Asp Tyr Val Gln Ala Tyr Glu
 50 55 60
 Arg Ile Tyr Ala Phe Ala Glu Leu Phe Ser Ile Pro Leu Cys Thr Asp
 65 70 75 80
 Cys Val Glu Lys Ser Phe Glu Ile Gln Ser Ile Asp Asn Asp Phe Glu
 85 90 95
 Asn Ile Ala Gly Val Glu Val Pro Ile Val Arg Glu Val Thr Leu Phe
 100 105 110
 Pro Ala Ser Tyr Ser Leu Leu Gly Thr Pro Ile Trp Leu Asp Thr Met
 115 120 125
 Leu Ser Ala Ser Lys Glu Leu Val Val Lys Lys Val Met Ala Glu Val
 130 135 140
 Ser Lys Glu Arg Leu Lys Ile Leu Glu Glu Glu Leu Arg Ala Val Ser
 145 150 155 160

Ile Arg Val Asn Leu Phe Glu Lys Lys Leu Ile Pro Glu Thr Thr Lys
 165 170 175
 Ile Leu Lys Lys Ile Ala Val Phe Leu Ser Asp Arg Ser Ile Thr Asp
 180 185 190
 Val Gly Gln Val Lys Met Ala Lys Lys Lys Ile Glu Leu Arg Lys Ala
 195 200 205
 Arg Gly Asp Glu Cys Val
 210
 <210>109
 <211>660
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>109
 Val Arg Leu Asn Ile His Lys Tyr Leu Phe Ile Gly Arg Asn Lys Ala
 1 5 10 15
 Asp Phe Phe Ser Ala Ser Arg Glu Leu Gly Val Val Glu Phe Ile Ser
 20 25 30
 Lys Lys Cys Phe Ile Thr Thr Glu Gln Gly His Arg Phe Val Glu Cys
 35 40 45
 Leu Lys Val Phe Asp His Leu Glu Ala Glu Tyr Ser Leu Glu Ala Leu
 50 55 60
 Glu Phe Val Lys Asp Glu Ser Val Ser Val Glu Asp Ile Val Ser Glu
 65 70 75 80
 Val Leu Thr Leu Asn Lys Glu Ile Lys Gly Leu Leu Glu Thr Val Lys
 85 90 95
 Ala Leu Arg Lys Glu Ile Val Arg Val Lys Pro Leu Gly Ala Phe Ser
 100 105 110
 Ser Ser Glu Ile Ala Glu Leu Ser Arg Lys Thr Gly Ile Ser Leu Arg
 115 120 125
 Phe Phe Tyr Arg Thr His Lys Asp Asn Glu Asp Leu Glu Glu Asp Ser
 130 135 140
 Pro Asn Val Phe Tyr Leu Ser Thr Ala Tyr Asn Phe Asp Tyr Tyr Leu
 145 150 155 160
 Val Leu Gly Val Val Asp Leu Pro Arg Asp Arg Tyr Thr Glu Ile Glu
 165 170 175
 Ala Pro Arg Ser Val Asn Glu Leu Gln Val Asp Leu Ala Asn Leu Gln
 180 185 190
 Arg Glu Ile Arg Asn Arg Ser Asp Arg Leu Cys Asp Leu Tyr Ala Tyr
 195 200 205
 Arg Arg Glu Val Leu Arg Gly Leu Cys Asn Tyr Asp Asn Glu Gln Arg
 210 215 220
 Leu His Gln Ala Lys Glu Cys Cys Glu Asp Leu Phe Asp Gly Lys Val
 225 230 235 240
 Phe Ala Val Ala Gly Trp Val Ile Val Asp Arg Ile Lys Glu Leu Gln
 245 250 255
 Ser Leu Cys Asn Arg Tyr Gln Ile Tyr Met Glu Arg Val Pro Val Asp
 260 265 270
 Pro Asp Glu Thr Ile Pro Thr Tyr Leu Glu Asn Lys Gly Val Gly Val
 275 280 285
 Met Gly Glu Asp Leu Val Gln Ile Tyr Asp Thr Pro Ala Tyr Ser Asp
 290 295 300
 Lys Asp Pro Ser Thr Trp Val Phe Phe Ala Phe Val Leu Phe Phe Ser
 305 310 315 320
 Met Ile Val Asn Asp Ala Gly Tyr Gly Leu Leu Phe Leu Met Ser Ser
 325 330 335
 Leu Leu Phe Ser Trp Lys Phe Arg Arg Lys Met Lys Phe Ser Lys His
 340 345 350
 Leu Ser Arg Met Leu Lys Met Thr Ala Ile Leu Gly Leu Gly Cys Ile
 355 360 365
 Cys Trp Gly Thr Thr Thr Thr S r Phe Phe Gly Met Ser Phe Ser Lys
 370 375 380
 Thr Ser Val Phe Arg Glu Tyr Ser Met Thr His Val Leu Ala Leu Lys
 385 390 395 400
 Lys Ala Glu Tyr Tyr Leu Gln Met Arg Pro Lys Ala Tyr Lys Glu Leu

405 410 415
 Thr Asn Glu Tyr Pro Ser Leu Lys Ala Ile Arg Asp Pro Lys Ala Phe
 420 425 430
 Leu Leu Ala Thr Glu Ile Gly Ser Ala Gly Ile Glu Ser Arg Tyr Val
 435 440 445
 Val Tyr Asp Lys Phe Ile Asp Asn Ile Leu Met Glu Leu Ala Leu Phe
 450 455 460
 Ile Gly Val Val His Leu Ser Leu Gly Met Leu Arg Tyr Leu Arg Tyr
 465 470 475 480
 Arg Tyr Ser Gly Ile Gly Trp Ile Leu Phe Met Val Ser Ala Tyr Leu
 485 490 495
 Tyr Val Pro Ile Tyr Leu Gly Thr Val Ser Leu Ile His Tyr Leu Phe
 500 505 510
 His Val Pro Tyr Glu Leu Gly Gly Gln Ile Gly Tyr Tyr Gly Met Phe
 515 520 525
 Gly Gly Ile Gly Leu Ala Val Val Leu Ala Met Ile Gln Arg Ser Trp
 530 535 540
 Arg Gly Val Glu Glu Ile Ile Ser Val Ile Gln Val Phe Ser Asp Val
 545 550 555 560
 Leu Ser Tyr Leu Arg Ile Tyr Ala Leu Gly Leu Ala Gly Ala Met Met
 565 570 575
 Gly Ala Thr Phe Asn Gln Met Gly Ala Arg Leu Pro Met Leu Leu Gly
 580 585 590
 Ser Ile Val Ile Leu Leu Gly His Ser Val Asn Ile Ile Leu Ser Ile
 595 600 605
 Met Gly Gly Val Ile His Gly Leu Arg Leu Asn Phe Ile Glu Trp Tyr
 610 615 620
 His Tyr Ser Phe Asp Gly Gly Gly Arg Pro Leu Arg Pro Leu Arg Lys
 625 630 635 640
 Ile Val Cys Ser Glu Asp Ala Glu Ala Ser Gly Ile His Leu Asp Asn
 645 650 655
 Asn Ser Ile Val
 660

<210>110

<211>149

<212>PRT

<213>Chlamydia pneumoniae

<400>110

Leu Lys Gly Ala His Glu Val Ser Met Ile Asp Met Ser Val Val Gly
 1 5 10 15
 Pro Ala Leu Val Leu Gly Leu Ala Met Ile Gly Ser Ala Ile Gly Cys
 20 25 30
 Gly Met Ala Gly Val Ala Ser His Ala Val Met Ser Arg Ile Asp Glu
 35 40 45
 Gly His Gly Lys Leu Ile Gly Met Ser Ala Met Pro Ser Ser Gln Ser
 50 55 60
 Ile Tyr Gly Phe Ile Leu Met Leu Leu Met Gln Ala Ala Ile Lys Asn
 65 70 75 80
 Gly Thr Leu Ser Pro Val Gly Gly Ile Ala Ile Gly Leu Ser Val Gly
 85 90 95
 Ala Ala Leu Leu Val Ser Ser Val Met Gln Gly Lys Cys Cys Val Ser
 100 105 110
 Gly Ile Gln Ala Tyr Ala Arg Ser Ser Ser Ile Tyr Gly Lys Cys Tyr
 115 120 125
 Ala Ala Ile Gly Ile Val Glu Ser Phe Ser Leu Phe Ala Val Val Phe
 130 135 140
 Ala Leu Leu Leu Leu
 145

<210>111

<211>940

<212>PRT

<213>Chlamydia pneumoniae

<400>111

Met Thr Thr Glu Asp Phe Pro Lys Ala Tyr Asn Phe Gln Asp Thr Glu

1	5	10	15
Pro Glu Leu Tyr Val Phe Trp Glu Lys Asn Gly Met Phe Lys Ala Glu			
20	25	30	
Ala Ser Ser Asp Lys Pro Pro Tyr Ser Val Ile Met Pro Pro Pro Asn			
35	40	45	
Val Thr Gly Val Leu His Met Gly His Ala Leu Val Asn Thr Leu Gln			
50	55	60	
Asp Val Leu Val Arg Tyr Lys Arg Met Ser Gly Phe Glu Val Cys Trp			
65	70	75	80
Ile Pro Gly Thr Asp His Ala Gly Ile Ala Thr Gln Ala Val Val Glu			
85	90	95	
Arg His Leu Gln Ala Ser Glu Gly Lys Arg Arg Thr Asp Tyr Ser Arg			
100	105	110	
Glu Asp Phe Leu Lys His Ile Trp Ala Trp Lys Glu Lys Ser Glu Lys			
115	120	125	
Val Val Leu Ser Gln Leu Arg Gln Leu Gly Cys Ser Cys Asp Trp Asp			
130	135	140	
Arg Lys Arg Phe Thr Met Glu Pro Leu Ala Asn Arg Ala Val Lys Lys			
145	150	155	160
Ala Phe Lys Thr Leu Phe Glu Asn Gly Tyr Ile Tyr Arg Gly Tyr Tyr			
165	170	175	
Leu Val Asn Trp Asp Pro Val Leu Gln Thr Ala Leu Ala Asp Asp Glu			
180	185	190	
Val Glu Tyr Glu Glu Lys Asp Gly Trp Leu Tyr Tyr Ile Arg Tyr Arg			
195	200	205	
Met Val Gly Ser Gln Glu Ser Ile Val Val Ala Thr Thr Arg Pro Glu			
210	215	220	
Thr Ser Leu Gly Asp Thr Gly Ile Ala Val Ser Pro Asn Asp Glu Arg			
225	230	235	240
Tyr Ala Ser Trp Ile Gly Ala Ser Val Glu Val Pro Phe Val Asn Arg			
245	250	255	
Gln Ile Pro Ile Ile Gly Asp Ala Ser Val Asp Pro Thr Phe Gly Thr			
260	265	270	
Gly Ala Val Lys Val Thr Pro Ala His Asp Lys Asp Asp Tyr Leu Met			
275	280	285	
Gly Thr Asn His His Leu Pro Met Ile Asn Ile Leu Thr Pro Ser Gly			
290	295	300	
Gly Ile Asn Glu Asn Gly Gly Pro Phe Ala Gly Met Ala Lys Glu Lys			
305	310	315	320
Ala Arg Glu Glu Ile Leu Ile Ala Leu Glu Glu Gln Gly Leu Phe Val			
325	330	335	
Arg Lys Glu Pro Tyr Lys Leu Arg Val Gly Val Ser Tyr Arg Ser Gly			
340	345	350	
Ala Val Ile Glu Pro Tyr Leu Ser Lys Gln Trp Phe Val Ser Val Ser			
355	360	365	
Glu Phe Arg Gly Ala Leu Arg Glu Phe Val Glu Ser Gln Asp Ile Lys			
370	375	380	
Ile Phe Pro Lys Asp Phe Val Lys Asn Tyr Leu Ser Trp Val Asn His			
385	390	395	400
Leu Arg Asp Trp Cys Ile Ser Arg Gln Leu Trp Trp Gly His Arg Ile			
405	410	415	
Pro Val Trp Tyr His Lys Asn His Asp Glu Arg Val Leu Cys Tyr Asp			
420	425	430	
Gly Glu Gly Ile Pro Glu Glu Val Ala Gln Asp Pro Asp Ser Trp Tyr			
435	440	445	
Gln Asp Pro Asp Val Leu Asp Thr Trp Phe Ser Ser Gly Leu Trp Pro			
450	455	460	
Leu Thr Cys Leu Gly Trp Pro Asp Glu Asn Ser Pro Asp Leu Lys Lys			
465	470	475	480
Phe Tyr Pro Thr Ala Leu Leu Val Thr Gly His Asp Ile Leu Phe Phe			
485	490	495	
Trp Val Thr Arg Met Val Leu Leu Cys Ser Ser Met Ser Gly Glu Lys			
500	505	510	
Pro Phe Ser Glu Val Phe Leu His Gly Leu Ile Phe Gly Lys Ser Tyr			

515 520 525
 Lys Arg Tyr Asn Asp Phe Gly Glu Trp Ser Tyr Ile Ser Gly Lys Glu
 530 535 540
 Lys Leu Ala Tyr Asp Met Gly Glu Ala Leu Pro Asp Gly Val Val Ala
 545 550 555 560
 Lys Trp Glu Lys Leu Ser Lys Ser Lys Gly Asn Val Ile Asp Pro Leu
 565 570 575
 Glu Met Ile Ala Thr Tyr Gly Thr Asp Ala Val Arg Leu Thr Leu Cys
 580 585 590
 Ser Cys Ala Asn Arg Gly Glu Gln Ile Asp Leu Asp Tyr Arg Leu Phe
 595 600 605
 Glu Glu Tyr Lys His Phe Ala Asn Lys Val Trp Asn Gly Ala Arg Phe
 610 615 620
 Ile Phe Gly His Ile Ser Asp Leu Gln Gly Lys Asp Leu Leu Ala Gly
 625 630 635 640
 Ile Asp Glu Asp Ser Leu Gly Leu Glu Asp Phe Tyr Ile Leu Asp Gly
 645 650 655
 Phe Asn Gln Leu Ile His Gln Leu Glu Glu Ala Tyr Ala Thr Tyr Ala
 660 665 670
 Phe Asp Lys Val Ala Thr Leu Ala Tyr Glu Phe Phe Arg Asn Asp Leu
 675 680 685
 Cys Ser Thr Tyr Ile Glu Ile Ile Lys Pro Thr Leu Phe Gly Lys Gln
 690 695 700
 Gly Asn Glu Ala Ser Gln Ser Thr Lys Arg Thr Leu Leu Ala Val Leu
 705 710 715 720
 Leu Ile Asn Val Leu Gly Val Leu His Pro Val Ala Pro Phe Ile Thr
 725 730 735
 Glu Ser Leu Phe Leu Arg Ile Gln Asp Thr Leu Gly Ala Leu Pro Glu
 740 745 750
 Gly Asp Gly Asp Ala Phe Thr Gly His Ala Leu Arg Met Leu Arg Ser
 755 760 765
 Arg Ala Cys Met Glu Ala Pro Tyr Pro Lys Ala Phe Asp Val Lys Ile
 770 775 780
 Pro Gln Asp Leu Arg Glu Ser Phe Thr Leu Ala Gln Arg Leu Val Tyr
 785 790 795 800
 Thr Ile Arg Asn Ile Arg Gly Glu Met Gln Leu Asp Pro Arg Leu His
 805 810 815
 Leu Lys Ala Phe Val Val Cys Ser Asp Thr Thr Glu Ile Gln Ser Cys
 820 825 830
 Ile Pro Ile Leu Gln Ala Leu Gly Gly Leu Glu Ser Ile Gln Leu Leu
 835 840 845
 Asp Lys Glu Pro Glu Lys Gly Leu Tyr Ser Phe Gly Val Val Asp Thr
 850 855 860
 Ile Arg Leu Gly Ile Phe Val Pro Glu Glu His Leu Leu Lys Glu Lys
 865 870 875 880
 Gly Arg Leu Glu Lys Glu Arg Val Arg Leu Glu Arg Ala Val Glu Asn
 885 890 895
 Leu Glu Arg Leu Leu Gly Asp Glu Ser Phe Cys Gln Lys Ala Asn Pro
 900 905 910
 Asn Leu Val Val Ala Lys Gln Glu Ala Leu Lys Asn Asn Arg Ile Glu
 915 920 925
 Leu Gln Gly Ile Leu Asp Lys Leu Ala Ser Phe Ala
 930 935 940

<210>112

<211>945

<212>PRT

<213>Chlamydia pneumoniae

<400>112

Ala Cys Ile Val Cys Leu Asp Arg Glu Asp Gln Arg Ser Leu Glu Arg
 1 5 10 15
 Tyr Asp Ile Val Arg Ile Ile Gly Lys Gly Gly Met Gly Glu Val Tyr
 20 25 30
 Leu Ala Tyr Asp Pro Val Cys Ser Arg Lys Val Ala Leu Lys Lys Ile
 35 40 45

Arg Glu Asp Leu Ala Glu Asn Pro Leu Leu Lys Arg Arg Phe Leu Arg
 50 55 60
 Glu Ala Arg Ile Ala Ala Asp Leu Ile His Pro Gly Val Val Pro Val
 65 70 75 80
 Tyr Thr Ile Tyr Ser Glu Lys Asp Pro Val Tyr Tyr Thr Met Pro Tyr
 85 90 95
 Ile Glu Gly Tyr Thr Leu Lys Thr Leu Leu Lys Ser Val Trp Gln Lys
 100 105 110
 Glu Ser Leu Ser Lys Glu Leu Ala Glu Lys Thr Ser Val Gly Ala Phe
 115 120 125
 Leu Ser Ile Phe His Lys Ile Cys Cys Thr Ile Glu Tyr Val His Ser
 130 135 140
 Arg Gly Ile Leu His Arg Asp Leu Lys Pro Asp Asn Ile Leu Leu Gly
 145 150 155 160
 Leu Phe Ser Glu Ala Val Ile Leu Asp Trp Gly Ala Ala Val Ala Cys
 165 170 175
 Gly Glu Glu Glu Asp Leu Leu Asp Ile Asp Val Ser Lys Glu Glu Val
 180 185 190
 Leu Ser Ser Arg Met Thr Ile Pro Gly Arg Ile Val Gly Thr Pro Asp
 195 200 205
 Tyr Met Ala Pro Glu Arg Leu Leu Gly His Pro Ala Ser Lys Ser Thr
 210 215 220
 Asp Ile Tyr Ala Leu Gly Val Val Leu Tyr Gln Met Leu Thr Leu Ser
 225 230 235 240
 Phe Pro Tyr Arg Arg Lys Lys Gly Lys Lys Ile Val Leu Asp Gly Gln
 245 250 255
 Arg Ile Pro Ser Pro Gln Glu Val Ala Pro Tyr Arg Glu Ile Pro Pro
 260 265 270
 Phe Leu Ser Ala Val Val Met Arg Met Leu Ala Val Asp Pro Gln Glu
 275 280 285
 Arg Tyr Ser Ser Val Thr Glu Leu Lys Glu Asp Ile Glu Ser His Leu
 290 295 300
 Lys Gly Ser Pro Lys Trp Thr Leu Thr Thr Ala Leu Pro Pro Lys Lys
 305 310 315 320
 Ser Ser Ser Trp Lys Leu Asn Glu Pro Ile Leu Leu Ser Lys Tyr Phe
 325 330 335
 Pro Met Leu Glu Val Ser Pro Ala Ser Trp Tyr Ser Leu Ala Ile Ser
 340 345 350
 Asn Ile Glu Ser Phe Ser Glu Met Arg Leu Glu Tyr Thr Leu Ser Lys
 355 360 365
 Lys Gly Leu Asn Glu Gly Phe Gly Ile Leu Leu Pro Thr Ser Glu Asn
 370 375 380
 Ala Leu Gly Gly Asp Phe Tyr Gln Gly Tyr Gly Phe Trp Leu His Ile
 385 390 395 400
 Lys Glu Arg Thr Leu Ser Val Ser Leu Val Lys Asn Ser Leu Glu Ile
 405 410 415
 Gln Arg Cys Ser Gln Asp Leu Glu Ser Asp Lys Glu Thr Phe Leu Ile
 420 425 430
 Ala Leu Glu Gln His Asn His Ser Leu Ser Leu Phe Val Asp Gly Thr
 435 440 445
 Thr Trp Leu Ile His Met Asn Tyr Leu Pro Ser Arg Ser Gly Arg Val
 450 455 460
 Ala Ile Ile Val Arg Asp Met Glu Asp Ile Leu Glu Asp Ile Gly Ile
 465 470 475 480
 Phe Glu Ser Ser Gly Ser Leu Arg Val Ser Cys Leu Ala Val Pro Asp
 485 490 495
 Ala Phe Leu Ala Glu Lys Leu Tyr Asp Arg Ala Leu Val Leu Tyr Arg
 500 505 510
 Arg Ile Ala Glu Ser Phe Pro Gly Arg Lys Glu Gly Tyr Glu Ala Arg
 515 520 525
 Phe Arg Ala Gly Ile Thr Val Leu Glu Lys Ala Ser Thr Asp Asn Asn
 530 535 540
 Glu Gln Glu Phe Ala Leu Ala Ile Glu Glu Phe Ser Lys Leu His Asp
 545 550 555 560

Gly Val Ala Ala Pro Leu Glu Tyr Leu Gly Lys Ala Leu Val Tyr Gln
 565 570 575
 Arg Leu Gln Glu Tyr Asn Glu Glu Ile Lys Ser Leu Leu Leu Ala Leu
 580 585 590
 Lys Arg Tyr Ser Gln His Pro Glu Ile Phe Arg Leu Lys Asp His Val
 595 600 605
 Val Tyr Arg Leu His Glu Ser Phe Tyr Lys Arg Asp Arg Leu Ala Leu
 610 615 620
 Val Phe Met Ile Leu Val Leu Glu Ile Ala Pro Gln Ala Ile Thr Pro
 625 630 635 640
 Gly Gln Glu Glu Lys Ile Leu Val Trp Leu Lys Asp Lys Ser Arg Ala
 645 650 655
 Thr Leu Phe Cys Leu Leu Asp Pro Thr Val Leu Glu Leu Arg Ser Ser
 660 665 670
 Lys Met Glu Leu Phe Leu Ser Tyr Trp Ser Gly Phe Ile Pro His Leu
 675 680 685
 Asn Ser Leu Phe His Arg Ala Trp Asp Gln Ser Asp Val Arg Ala Leu
 690 695 700
 Ile Glu Ile Phe Tyr Val Ala Cys Asp Leu His Lys Trp Gln Phe Leu
 705 710 715 720
 Ser Ser Cys Ile Asp Ile Phe Lys Glu Ser Leu Glu Asp Gln Lys Ala
 725 730 735
 Thr Glu Glu Ile Val Glu Phe Ser Phe Glu Asp Leu Gly Ala Phe Leu
 740 745 750
 Phe Ala Ile Gln Ser Ile Phe Asn Lys Glu Asp Ala Glu Lys Ile Phe
 755 760 765
 Val Ser Asn Asp Gln Leu Ser Pro Ile Leu Leu Val Tyr Ile Phe Asp
 770 775 780
 Leu Phe Ala Asn Arg Ala Leu Leu Glu Ser Gln Gly Glu Ala Ile Phe
 785 790 795 800
 Gln Ala Leu Asp Leu Ile Arg Ser Lys Val Pro Glu Asn Phe Tyr His
 805 810 815
 Asp Tyr Leu Arg Asn His Glu Ile Arg Ala His Leu Trp Cys Arg Asn
 820 825 830
 Glu Lys Ala Leu Ser Thr Ile Phe Glu Asn Tyr Thr Glu Lys Gln Leu
 835 840 845
 Lys Asp Glu Gln His Glu Leu Phe Val Leu Tyr Gly Cys Tyr Leu Ala
 850 855 860
 Leu Ile Gln Gly Ala Glu Ala Ala Lys Gln His Phe Asp Val Cys Arg
 865 870 875 880
 Glu Asp Arg Ile Phe Pro Ala Ser Leu Leu Ala Arg Asn Tyr Asn Arg
 885 890 895
 Leu Gly Leu Pro Lys Asp Ala Leu Ser Tyr Gln Glu Arg Arg Leu Leu
 900 905 910
 Leu Arg Gln Lys Phe Leu Tyr Phe His Cys Leu Gly Asn His Asp Glu
 915 920 925
 Arg Asp Leu Cys Gln Thr Met Tyr His Leu Leu Thr Glu Glu Phe Gln
 930 935 940

Leu

945

<210>113

<211>1626

<212>PRT

<213>Chlamydia pneumoniae

<400>113

Met Lys Ser Leu Pro Val Tyr Val Ser Gly Ile Lys Val Arg Asn Leu
 1 5 10 15

Lys Asn Val Ser Ile His Phe Asn Ser Glu Glu Ile Val Leu Leu Thr
 20 25 30

Gly Val Ser Gly Ser Gly Lys Ser Ser Ile Ala Phe Asp Thr Leu Tyr
 35 40 45

Ala Ala Gly Arg Lys Arg Tyr Ile Ser Thr Leu Pro Thr Phe Phe Ala
 50 55 60

Thr Thr Ile Thr Thr Leu Pro Asn Pro Lys Val Glu Glu Ile His Gly

65	70	75	80
Leu Ser Pro Thr Ile Ala Ile Lys Gln Asn His Phe Ser His Tyr Ser			
85	90	95	
His Ala Thr Val Gly Ser Thr Thr Glu Leu Phe Ser His Leu Ala Leu			
100	105	110	
Leu Phe Thr Leu Glu Gly Gln Ala Arg Asp Pro Lys Thr Lys Glu Val			
115	120	125	
Leu Asp Leu Tyr Ser Lys Glu Lys Val Leu Ser Thr Ile Met Glu Leu			
130	135	140	
Ser Glu Gly Val Gln Ile Ser Ile Leu Ala Pro Leu Leu Arg Lys Asp			
145	150	155	160
Ile Ala Ala Ile His Glu Tyr Ala Gln Gln Gly Phe Thr Lys Val Arg			
165	170	175	
Cys Asn Gly Thr Ile His Pro Ile Tyr Ser Phe Leu Thr Ser Gly Ile			
180	185	190	
Pro Glu Asp Cys Ser Val Asp Ile Val Ile Asp Thr Leu Ile Lys Ser			
195	200	205	
Glu Asn Asn Ile Ala Arg Leu Lys Val Ser Leu Phe Thr Ala Leu Glu			
210	215	220	
Phe Gly Glu Gly His Cys Ser Val Leu Ser Asp Glu Glu Leu Met Thr			
225	230	235	240
Phe Ser Thr Lys Gln Gln Ile Asp Asp Val Thr Tyr Thr Pro Leu Thr			
245	250	255	
Gln Gln Leu Phe Ser Pro His Ala Leu Glu Ser Arg Cys Ser Leu Cys			
260	265	270	
Gln Gly Ser Gly Ile Phe Ile Ser Ile Asp Asn Pro Leu Leu Ile Asp			
275	280	285	
Glu Asn Leu Ser Ile Lys Glu Asn Cys Cys Ser Phe Ala Gly Asn Cys			
290	295	300	
Ser Ser Tyr Leu Tyr His Thr Ile Tyr Gln Ala Leu Ala Asp Ala Leu			
305	310	315	320
Asn Phe Asn Leu Glu Thr Pro Trp Lys Asp Leu Ser Pro Glu Ile Gln			
325	330	335	
Asn Ile Phe Leu Arg Gly Lys Asn Asn Leu Val Leu Pro Val Arg Leu			
340	345	350	
Phe Asp Gln Thr Leu Gly Lys Lys Asn Leu Thr Tyr Lys Val Trp Arg			
355	360	365	
Gly Val Leu Asn Asp Ile Gly Asp Lys Val Arg Tyr Thr Thr Lys Pro			
370	375	380	
Ser Arg Tyr Leu Ser Lys Gly Met Ser Ala His Ser Cys Ser Leu Cys			
385	390	395	400
Lys Gly Thr Gly Leu Gly Asp Tyr Ala Ser Val Ala Thr Trp Glu Gly			
405	410	415	
Lys Thr Phe Thr Glu Phe Gln Gln Met Ser Leu Asn Asn Trp His Val			
420	425	430	
Phe Phe Ser Lys Val Lys Ser Pro Ser Leu Ser Ile Gln Glu Ile Leu			
435	440	445	
Gln Gly Leu Lys Gln Arg Leu Ser Phe Leu Ile Asp Leu Gly Leu Gly			
450	455	460	
Tyr Leu Thr Pro Asn Arg Ala Leu Ala Thr Leu Ser Gly Gly Glu Gln			
465	470	475	480
Glu Arg Thr Ala Ile Ala Lys His Leu Gly Gly Glu Leu Phe Gly Ile			
485	490	495	
Thr Tyr Ile Leu Asp Glu Pro Ser Ile Gly Leu His Pro Gln Asp Thr			
500	505	510	
Glu Lys Leu Ile Gly Val Ile Lys Lys Leu Arg Asp Gln Gly Asn Thr			
515	520	525	
Val Ile Leu Val Glu His Glu Glu Arg Met Ile Ser Leu Ala Asp Arg			
530	535	540	
Ile Ile Asp Ile Gly Pro Gly Ala Gly Ile Phe Gly Gly Glu Val Leu			
545	550	555	560
Phe Asn Gly Lys Pro Glu Asp Phe Leu Met Asn Ser Ser Ser Leu Thr			
565	570	575	
Ala Lys Tyr Leu Arg Gln Glu Leu Thr Ile Pro Ile Pro Glu Ser Arg			

580										585										590									
Glu	Ala	Pro	Thr	Ser	Trp	Leu	Leu	Leu	Thr	Glu	Ala	Thr	Ile	His	Asn														
595										600										605									
Leu	Lys	Asn	Leu	Ser	Ile	Arg	Leu	Pro	Leu	Ala	Arg	Leu	Ile	Gly	Val														
610										615										620									
Thr	Gly	Val	Ser	Gly	Ser	Gly	Lys	Ser	Ser	Leu	Ile	Asn	Asn	Thr	Leu														
625										630										635									
Val	Pro	Ala	Ile	Glu	Ser	Phe	Leu	Lys	Gln	Glu	Asn	Pro	Lys	Asn	Leu														
645										650										655									
His	Phe	Glu	Trp	Gly	Cys	Ile	Gly	Arg	Leu	Ile	His	Ile	Thr	Arg	Asp														
660										665										670									
Leu	Pro	Gly	Arg	Ser	Gln	Arg	Ser	Ile	Pro	Leu	Thr	Tyr	Ile	Lys	Ala														
675										680										685									
Phe	Asp	Asp	Ile	Arg	Glu	Leu	Phe	Ala	Ser	Gln	Pro	Arg	Ser	Leu	Arg														
690										695										700									
Gln	Gly	Leu	Thr	Lys	Ala	His	Phe	Ser	Phe	Asn	Gln	Pro	Gln	Gly	Ala														
705										710										715									
Cys	Ile	Gln	Cys	Gln	Gly	Leu	Gly	Thr	Met	Thr	Ile	Ser	Asp	Asp	Asp														
725										730										735									
Thr	Pro	Ile	Pro	Cys	Ser	Glu	Cys	Gln	Gly	Lys	Arg	Tyr	His	Ser	Glu														
740										745										750									
Val	Leu	Glu	Ile	Leu	Tyr	Glu	Gly	Lys	Asn	Ile	Ala	Asp	Ile	Leu	Asp														
755										760										765									
Met	Thr	Ala	Tyr	Glu	Ala	Glu	Lys	Phe	Phe	Ile	Ser	His	Pro	Lys	Ile														
770										775										780									
His	Glu	Lys	Ile	His	Ala	Leu	Cys	Ser	Leu	Arg	Leu	Asp	Tyr	Leu	Pro														
785										790										795									
Leu	Gly	Arg	Pro	Leu	Ser	Thr	Leu	Ser	Gly	Gly	Glu	Ile	Gln	Arg	Leu														
805										810										815									
Lys	Leu	Ala	His	Glu	Leu	Leu	Phe	Ala	Ser	Pro	Lys	Gln	Thr	Leu	Tyr														
820										825										830									
Val	Leu	Asp	Glu	Pro	Thr	Thr	Gly	Leu	His	Thr	His	Asp	Ile	Gln	Ala														
835										840										845									
Leu	Ile	Glu	Val	Leu	Leu	Ser	Leu	Thr	Tyr	Leu	Gly	His	Thr	Val	Leu														
850										855										860									
Val	Ile	Glu	His	Asn	Met	His	Val	Val	Lys	Val	Cys	Asp	Tyr	Val	Leu														
865										870										875									
Glu	Leu	Gly	Pro	Glu	Gly	Gly	Asp	Leu	Gly	Gly	Tyr	Leu	Leu	Ala	Ser														
885										890										895									
Cys	Thr	Pro	Lys	Asp	Leu	Ile	Gln	Leu	Asn	Thr	Pro	Thr	Ala	Lys	Ala														
900										905										910									
Leu	Ala	Pro	Tyr	Ile	Glu	Gly	Ser	Leu	Asp	Ile	Pro	Val	Val	Lys	Ser														
915										920										925									
Glu	Pro	Pro	Ser	Ser	Pro	Lys	Ser	Cys	Asp	Ile	Leu	Ile	Lys	Asp	Ala														
930										935										940									
Tyr	Gln	Asn	Asn	Leu	Lys	His	Ile	Asp	Leu	Ala	Leu	Pro	Arg	Asn	Ser														
945										950										955									
Leu	Ile	Ala	Ile	Ala	Gly	Pro	Gly	Ala	Ser	Gly	Lys	His	Ser	Leu	Val														
965										970										975									
Phe	Asp	Ile	Leu	Tyr	Ala	Ser	Gly	Asn	Ile	Ala	Tyr	Ala	Glu	Leu	Phe														
980										985										990									
Pro	Pro	Tyr	Ile	Arg	Gln	Gly	Leu	Leu	Lys	Glu	Thr	Pro	Leu	Pro	Ser														
995										1000										1005									
Val	Gly	Glu	Val	Lys	Gly	Leu	Ser	Pro	Val	Ile	Ser	Val	Arg	Lys	Cys														
1010										1015										1020									
Ser	Ser	Ser	Asn	Arg	Ser	Tyr	His	Thr	Ile	Ala	Ser	Ala	Leu	Gly	Leu														
1025										1030										1035									
Ser	Asn	Gly	Leu	Glu	Lys	Leu	Phe	Ala	Ile	Leu	Gly	Glu	Pro	Phe	Ser														
1045										1050										1055									
Pro	Leu	Thr	Glu	Lys	Leu	Ser	Lys	Thr	Thr	Pro	Gln	Thr	Ile	Ile															
1060										1065										1070									
Asp	Ser	Leu	Leu	Lys	Ser	Tyr	Lys	Asp	Asp	Tyr	Val	Thr	Ile	Thr	Ser														
1075										1080										1085									
Pro	Ile	Pro	Leu	Gly	Ser	Asp	Leu	Glu	Ile	Phe	Leu	Gln	Glu	Lys	Gln														

1090	1095	1100
Lys Glu Gly Phe Ile Lys Leu Tyr Ser Glu Gly Asn Leu Tyr Asp Leu		
1105	1110	1115
Asp Glu Arg Leu Pro Leu Asn Leu Ile Glu Pro Ala Ile Val Ile Gln		1120
1125	1130	1135
His Thr Lys Val Ser Pro Lys Asn Ser Ser Ser Leu Leu Ser Ala Ile		
1140	1145	1150
Ser Val Ala Phe Ser Leu Ser Ser Glu Ile Trp Ile Tyr Ile Ser Gln		
1155	1160	1165
Lys Lys Gln Arg Lys Leu Ser Tyr Ser Leu Gly Trp Lys Asp Lys Lys		
1170	1175	1180
Gly Arg Leu Tyr Pro Glu Ile Thr His Gln Leu Leu Xaa Ser Asp His		
1185	1190	1195
Pro Glu Gly Arg Cys Leu Thr Cys Gly Gly Arg Gly Glu Ile Leu Lys		
1205	1210	1215
Ile Ser Leu Glu Glu His Lys Glu Lys Ile Ala His Tyr Thr Pro Leu		
1220	1225	1230
Glu Phe Phe Ser Leu Phe Phe Pro Lys Ser Tyr Met Lys Pro Val Gln		
1235	1240	1245
Lys Leu Leu Lys Asp Glu Asn Ala Ser Gln Pro Leu Lys Leu Leu Thr		
1250	1255	1260
Thr Lys Glu Phe Leu Asn Phe Cys Arg Gly Ser Ser Glu Phe Pro Gly		
1265	1270	1275
Met Asn Ala Leu Leu Met Glu Gln Leu Asp Thr Glu Ser Asp Ser Pro		
1285	1290	1295
Leu Ile Lys Pro Leu Leu Ala Leu Thr Ser Cys Pro Ala Cys Lys Gly		
1300	1305	1310
Ser Gly Leu Asn Asp Tyr Ala Asn Tyr Val Arg Ile Asn Asn Thr Ser		
1315	1320	1325
Leu Leu Asp Ile Tyr Gln Glu Asp Ala Thr Phe Leu Glu Ser Phe Leu		
1330	1335	1340
Asn Thr Ile Gly Thr Asp Asp Thr Arg Ser Ile Ile Gln Asp Leu Met		
1345	1350	1355
Asn Arg Leu Thr Phe Ile Ser Lys Val Gly Leu Ser Tyr Ile Thr Leu		
1365	1370	1375
Gly Gln Arg Gln Asp Thr Leu Ser Asp Gly Glu Asn Tyr Arg Leu His		
1380	1385	1390
Leu Ala Lys Lys Ile Ser Ile Asn Leu Thr Asn Ile Val Tyr Leu Phe		
1395	1400	1405
Glu Glu Pro Leu Ser Gly Leu His Pro Gln Asp Leu Pro Thr Ile Val		
1410	1415	1420
Gln Leu Leu Lys Glu Leu Val Ala Asn Asn Asn Thr Val Ile Ala Thr		
1425	1430	1435
Asp Arg Ser Cys Ser Leu Ile Pro His Ala Asp His Ala Ile Phe Leu		
1445	1450	1455
Gly Pro Gly Ser Gly Pro Gln Gly Gly Phe Leu Met Asp Ser Asp Thr		
1460	1465	1470
Glu Val Cys Pro Ser Val Asp Leu His Ala Asn Val Pro Gln Thr Glu		
1475	1480	1485
Val Cys Pro Lys Ala Pro Leu Ser Ile Ser Lys Ala Asn His Thr Arg		
1490	1495	1500
Gly Ser Asp Arg Thr Leu Lys Val Asn Leu Ser Ile His His Ile Gln		
1505	1510	1515
Asn Leu Lys Val Ser Ala Pro Leu His Ala Leu Val Ala Ile Gly Gly		
1525	1530	1535
Val Ser Gly Ser Gly Lys Thr Ser Leu Leu Leu Glu Gly Phe Lys Lys		
1540	1545	1550
Gln Ala Glu Leu Leu Ile Ala Lys Gly Thr Thr Thr Phe Ser Asp Leu		
1555	1560	1565
Val Val Ile Asp Ser His Pro Ile Ala Ser Ser Gln Arg Ser Asp Ile		
1570	1575	1580
Ser Thr Tyr Phe Asp Ile Ala Pro Ser Leu Arg Ala Phe Tyr Ala Ser		
1585	1590	1595
Leu Thr Gln Ala Lys Ala Leu Asn Ile Ser Ser Thr Met Phe Ser Thr		
		1600

1605 1610 1615
 Asn Thr Lys Gln Gly Gln Cys Ser Asp Cys Gln Gly Leu Gly Tyr Gln
 1620 1625 1630
 Trp Ile Asp Arg Ala Phe Tyr Ala Leu Glu Lys Arg Pro Cys Pro Thr
 1635 1640 1645
 Cys Ser Gly Phe Arg Ile Gln Pro Leu Ala Gln Glu Val Leu Tyr Glu
 1650 1655 1660
 Gly Lys His Phe Gly Glu Leu Leu His Thr Pro Ile Glu Thr Val Ala
 1665 1670 1675 1680
 Leu Arg Phe Pro Phe Ile Lys Lys Ile Gln Lys Pro Leu Lys Ala Leu
 1685 1690 1695
 Leu Asp Ile Gly Leu Gly Tyr Leu Pro Ile Gly Gln Lys Leu Ser Ser
 1700 1705 1710
 Leu Ser Val Ser Glu Lys Thr Ala Leu Lys Thr Ala Tyr Phe Leu Tyr
 1715 1720 1725
 Gln Thr Pro Glu Thr Pro Thr Leu Phe Leu Ile Asp Glu Leu Phe Ser
 1730 1735 1740
 Ser Leu Asp Pro Ile Lys Lys Gln His Leu Pro Glu Lys Leu Arg Ser
 1745 1750 1755 1760
 Leu Ile Asn Ser Gly His Ser Val Ile Tyr Ile Asp His Asp Val Lys
 1765 1770 1775
 Leu Leu Lys Ser Ala Asp Tyr Leu Ile Glu Ile Gly Pro Gly Ser Gly
 1780 1785 1790
 Lys Gln Gly Gly Lys Leu Leu Phe Ser Gly Ser Pro Lys Asp Ile Tyr
 1795 1800 1805
 Ala Ser Lys Asp Ser Leu Leu Lys Lys Tyr Ile Cys Asn Glu Glu Leu
 1810 1815 1820
 Asp Ser
 1825
 <210>114
 <211>496
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>114
 Asp Ser Met Ile Thr Arg Thr Lys Ile Ile Cys Thr Ile Gly Pro Ala
 1 5 10 15
 Thr Asn Ser Pro Glu Met Leu Ala Lys Leu Leu Asp Ala Gly Met Asn
 20 25 30
 Val Ala Arg Leu Asn Phe Ser His Gly Ser His Glu Thr His Gly Gln
 35 40 45
 Ala Ile Gly Phe Leu Lys Glu Leu Arg Glu Gln Lys Arg Val Pro Leu
 50 55 60
 Ala Ile Met Leu Asp Thr Lys Gly Pro Glu Ile Arg Leu Gly Asn Ile
 65 70 75 80
 Pro Gln Pro Ile Ser Val Ser Gln Gly Gln Lys Leu Arg Leu Val Ser
 85 90 95
 Ser Asp Ile Asp Gly Ser Ala Glu Gly Gly Val Ser Leu Tyr Pro Lys
 100 105 110
 Gly Ile Phe Pro Phe Val Pro Glu Gly Ala Asp Val Leu Ile Asp Asp
 115 120 125
 Gly Tyr Ile His Ala Val Val Val Ser Ser Glu Ala Asp Ser Leu Glu
 130 135 140
 Leu Glu Phe Met Asn Ser Gly Leu Leu Lys Ser His Lys Ser Leu Ser
 145 150 155 160
 Ile Arg Gly Val Asp Val Ala Leu Pro Phe Met Thr Glu Lys Asp Ile
 165 170 175
 Ala Asp Leu Lys Phe Gly Val Glu Gln Asn Met Asp Val Val Ala Ala
 180 185 190
 Ser Phe Val Arg Tyr Gly Glu Asp Ile Glu Thr Met Arg Lys Cys Leu
 195 200 205
 Ala Asp Leu Gly Asn Pro Lys Met Pro Ile Ile Ala Lys Ile Glu Asn
 210 215 220
 Arg Leu Gly Val Glu Asn Phe Ser Lys Ile Ala Lys Leu Ala Asp Gly
 225 230 235 240

Ile Met Ile Ala Arg Gly Asp Leu Gly Ile Glu Leu Ser Val Val Glu
 245 250 255
 Val Pro Asn Leu Gln Lys Met Met Ala Lys Val Ser Arg Glu Thr Gly
 260 265 270
 His Phe Cys Val Thr Ala Thr Gln Met Leu Glu Ser Met Ile Arg Asn
 275 280 285
 Val Leu Pro Thr Arg Ala Glu Val Ser Asp Ile Ala Asn Ala Ile Tyr
 290 295 300
 Asp Gly Ser Ser Ala Val Met Leu Ser Gly Glu Thr Ala Ser Gly Ala
 305 310 315 320
 His Pro Val Ala Ala Val Lys Ile Met Arg Ser Val Ile Leu Glu Thr
 325 330 335
 Glu Lys Asn Leu Ser His Asp Ser Phe Leu Lys Leu Asp Glu Ser Asn
 340 345 350
 Ser Ala Leu Gln Val Ser Pro Tyr Leu Ser Ala Ile Gly Leu Ala Gly
 355 360 365
 Ile Gln Ile Ala Glu Arg Ala Asp Ala Lys Ala Leu Ile Val Tyr Thr
 370 375 380
 Glu Ser Gly Ser Ser Pro Met Phe Leu Ser Lys Tyr Arg Pro Lys Phe
 385 390 395 400
 Pro Ile Ile Ala Val Thr Pro Ser Thr Ser Val Tyr Tyr Arg Leu Ala
 405 410 415
 Leu Glu Trp Gly Val Tyr Pro Met Leu Thr Gln Glu Ser Asp Arg Ala
 420 425 430
 Val Trp Arg His Gln Ala Cys Ile Tyr Gly Ile Glu Gln Gly Ile Leu
 435 440 445
 Ser Asn Tyr Asp Arg Ile Leu Val Leu Ser Arg Gly Ala Cys Met Glu
 450 455 460
 Glu Thr Asn Asn Leu Thr Leu Thr Ile Val Asn Asp Ile Leu Thr Gly
 465 470 475 480
 Ser Glu Phe Pro Glu Thr
 485

<210>115

<211>463

<212>BRT

<213>Chlamydia pneumoniae

<400>115

Leu Val Gly Lys Lys Phe His Gln Ile Lys Arg Thr Ile Leu Glu Ala
 1 5 10 15
 Pro Leu Tyr Tyr Leu Val Ser Gly Ile Ile Ala Leu Cys Arg His Thr
 20 25 30
 Pro Arg Ser Phe Leu Thr Gly Leu Gly Lys Gly Phe Gly Phe Leu Ala
 35 40 45
 Phe Tyr Ile Ile Ser Asp Tyr Arg Lys Thr Ala Leu Thr Asn Leu Ala
 50 55 60
 Leu Ala Phe Pro Glu Lys Thr Phe Asp Glu Arg Tyr Lys Ile Ala Arg
 65 70 75 80
 Gln Ser Leu Gln His Leu Ile Ile Thr Leu Leu Glu Leu Leu Ala Ile
 85 90 95
 Glu Gln Leu Val Gly Asn Ile Asp Lys Leu Ile Thr Ile Val Thr Ser
 100 105 110
 Ser Arg Asn Pro Lys Gly Phe Ser Ser Glu Glu Val Ile Ser Asn Glu
 115 120 125
 Asp Leu Glu Glu Thr Phe Lys Asn Leu Gln Glu Lys Gln Gly Leu Ile
 130 135 140
 Leu Phe Cys Gly His Gln Ala Asn Trp Glu Leu Pro Phe Leu Tyr Ile
 145 150 155 160
 Thr Lys Asn Tyr Pro Gly Ile Ala Phe Ala Lys Ala Ile Lys Asn Gln
 165 170 175
 Arg Leu Ser Lys Lys Ile Phe Ala Leu Arg Glu Val Phe Lys Gly Lys
 180 185 190
 Ile Val Pro Pro Lys Asn Gly Ile Gln Gln Gly Ile Glu Ala Leu Asn
 195 200 205
 Gln Gly Lys Leu Val Gly Ile Val Gly Asp Gln Ala Leu Leu Met Ser

310	215	220
Ser Tyr Thr Tyr Pro Leu Phe Gly Ser Pro Ala Phe Thr Thr Thr Ser		
225	230	235
Pro Ala Leu Leu Ala Tyr Lys Thr Gly Phe Pro Val Ile Ala Val Asn		240
	245	250
Val Ser Arg Gln Ala Lys Gly Phe Glu Val Ile Pro Ser Ala Lys Leu		255
	260	265
Tyr Ala Asn Lys Ser Leu Pro Met Lys Glu Ser Val Ala Ile Leu Met		270
	275	280
Asp Gln Met Met Gly Phe Leu Glu Lys Gly Ile Ala Ser Gln Pro Glu		285
	290	295
Gln Trp Met Trp Ile His Lys Arg Trp Lys Arg Lys Ile Ser Asn Val		300
305	310	315
Ile Lys Lys Lys Tyr Arg Tyr Ser His Ile Leu Val Phe Val Asp Gln		320
	325	330
Val Ser Ser His Phe Ser Phe Leu Lys Ala Leu Ala Glu Cys Phe Ser		335
	340	345
Gly Thr Thr Leu His Leu Thr Leu Gly Asn Ala Asp His Leu Glu Glu		350
	355	360
Leu Gln Glu Gln Phe Pro Glu Tyr Ser Leu Ile Gln Leu Arg Asn Asp		365
	370	375
Gln Asp Ile Leu Ala Leu Pro Asn Cys Tyr Pro Ala Ile Phe Asp Leu		380
385	390	395
Thr Asn Asn Leu Gln His Leu Tyr Lys His Phe Arg Lys Thr Gly Ser		400
	405	410
Cys Ala Val Tyr Ser Lys Arg Phe Leu Glu Lys Ser Leu Asp His Pro		415
	420	425
Gln Ala Pro Leu Lys Asn Ser Leu Arg Ile Phe Tyr Ser Lys Asn Leu		430
	435	440
Lys Asp Lys Glu Arg Lys Asn Phe Lys Val Lys Ser Lys Gly Pro		445
450	455	460

<210>116

<211>114

<212>PRT

<213>Chlamydia pneumoniae

<400>116

Ile Ile Leu Leu Cys Phe Leu Leu Ser Gln Asp Phe Ser Phe Cys Ser		
1	5	10
Glu Asp Ala Pro Glu Arg Asn Met Leu Asn Ser Ile Val Thr Lys Arg		15
	20	25
Thr Arg Thr Ala Ala Thr Leu Leu Ile Pro Lys Val Ile Pro Glu Ala		30
	35	40
Pro Ser Thr Pro Val Gln Ile Lys Met Ile Ser Ile Lys Glu Thr Ile		45
	50	55
Ala Val Arg Ala Lys Ser Pro Ala Asp Thr Val Ala Thr Phe Ala Leu		60
65	70	75
Asp Ser Glu Leu Ser Glu Gln Gln Gln Thr Val Leu Ile Ala Ala Ser		80
	85	90
Lys Pro Trp Pro Lys Gln Ser Ile Lys His Ile Lys Phe Pro Leu Thr		95
	100	105
Lys Phe		110

<210>117

<211>104

<212>PRT

<213>Chlamydia pneumoniae

<400>117

Asn Leu Val Arg Gly Asn Phe Met Cys Leu Ile Asp Cys Leu Gly Gln		
1	5	10
Gly Phe Glu Ala Ala Ile Asn Thr Val Cys Cys Cys Ser Asp Ser Ser		15
	20	25
Glu Ser Lys Ala Asn Val Ala Thr Val Ser Ala Gly Leu Leu Ala Leu		30
	35	40
Thr Ala Ile Val Ser Phe Ile Leu Ile Ile Leu Ile Cys Thr Gly Val		45

50 55 60
 Leu Gly Ala Ser Gly Met Thr Phe Gly Met Ser Asn Val Ala Ala Val
 65 70 75 80
 Leu Val Leu Leu Val Thr Ile Leu Leu Ser Met Phe Leu Ser Gly Ala
 85 90 95
 Ser Ser Leu Gln Asn Glu Lys Ser
 100
 <210>118
 <211>434
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>118
 Arg Thr Gln Lys Lys Thr Phe Ile Leu Leu Asp Leu Glu Thr Met Ile
 1 5 10 15
 Lys Phe Leu Ser Gln Leu Phe Ile Arg His Trp Pro Arg Lys Val Val
 20 25 30
 Ser Leu Gly Phe Ala Ile Ile Ile Trp Ile Leu Val Gly Gln Ser Val
 35 40 45
 Thr Ile Thr Arg Thr Leu Thr Asn Val Pro Val Arg Ile Val Asp Leu
 50 55 60
 His Pro Asp Gln Thr Val Leu Gly Leu Gln Lys Ser Gly Phe Leu Asn
 65 70 75 80
 Lys Lys Val Ser Leu Thr Ile Thr Gly Asn Lys Asn Thr Val Gln Asp
 85 90 95
 Leu Arg Pro Ser Asn Leu Glu Val Val Ile Ser Ala Ala Asn His Thr
 100 105 110
 Glu Ser Trp Ile Ala Thr Ile Asp Lys His Asn Leu Val Ser Val Asp
 115 120 125
 His Glu Ile Asn Ile Arg Lys Asp Ile His Ser Val Asp Ala Asn Asp
 130 135 140
 Ile Phe Val Arg Leu Thr Gln Tyr Val Thr Glu Asp Ile Leu Leu Thr
 145 150 155 160
 Ile Thr Lys Pro Ile Gly Ser Pro Pro Lys Gly Tyr Glu Tyr Leu Asp
 165 170 175
 Val Trp Pro Lys Tyr Leu Asn Gln Lys Val Ser Gly Pro Lys Glu Tyr
 180 185 190
 Ile Asn Ala Leu Lys Glu Gln Gly Leu Glu Leu Thr Phe Asn Leu Asn
 195 200 205
 Lys Ile Ser Phe Glu Glu Leu Glu Arg Asn Arg Ile Ala Gln Gly Ser
 210 215 220
 His Asp Glu Ile Ile Phe Pro Ile Pro Lys Glu Trp Lys Lys Ile Leu
 225 230 235 240
 Ile Pro Phe Glu Asn Thr Phe Met Asp Leu Asn Asp Pro Gln Ala Asp
 245 250 255
 Phe Leu Arg Leu Leu Phe Leu Lys Arg Glu Cys Ile Pro Leu Asn Leu
 260 265 270
 Asn Leu Pro Val Phe Leu Phe Phe Pro Val Thr Phe Ile Gln Thr Met
 275 280 285
 Asn Pro Leu Glu Tyr Ser Leu Asp Pro Val Pro Pro Ile Ile Leu Asn
 290 295 300
 His Gly Ile His Gln Ile Asn Ile Pro Leu Tyr Val Lys Asp Val Ser
 305 310 315 320
 Arg Gln Phe Leu Asp Val Val Lys Asn Asn Met Val Leu Thr Ile Val
 325 330 335
 Met Pro Ser Pro Gln Asp Pro Ser Ser Ile Asn Trp Ala Ile Glu Phe
 340 345 350
 Leu Asp Glu Lys Thr Leu Glu Asn Thr Phe Leu Gln Thr Ile Ile Ala
 355 360 365
 Gln Glu His Gly Ile Leu His Asp Ile Ala Leu Ile Asp Glu Ala Gly
 370 375 380
 Ile Arg His Arg Phe Arg Glu Tyr Leu Arg Lys Leu Ala Leu Phe Thr
 385 390 395 400
 Ala Asp Gly Glu Pro Leu Asn Leu Ile Ala Glu Ile Lys Asn Asn Lys
 405 410 415

Val Val Ile Gln Thr Lys Thr Lys Glu Thr Thr Lys Leu Tyr Lys Lys
 420 425 430
 Glu Trp

<210>119

<211>279

<212>PRT

<213>Chlamydia pneumoniae

<400>119

Leu Cys Asn Phe Ser Gln Tyr Thr Thr Gln Gly Pro Ser Lys Thr Met
 1 5 10 15
 Pro Phe Asp Ile Thr Tyr Tyr Thr Thr Pro Leu Leu Glu Ile Ile Leu
 20 25 30
 Ile Trp Val Met Leu Asn Tyr Leu Leu Lys Phe Phe Trp Gly Thr Arg
 35 40 45
 Ala Met Asp Val Val Phe Gly Leu Leu Ala Phe Leu Phe Leu Phe Val
 50 55 60
 Leu Ala Asp Lys Leu His Leu Pro Ile Ile Arg Arg Leu Met Leu His
 65 70 75 80
 Val Val Asn Ile Ala Ala Ile Val Val Phe Ile Ile Phe Gln Pro Glu
 85 90 95
 Ile Arg Leu Ala Leu Ser Arg Ile Arg Phe His Gly Lys Lys Phe Phe
 100 105 110
 Ile Asp Thr Gln Glu Gln Phe Val Glu Gln Leu Ala Ala Ser Ile Tyr
 115 120 125
 Gln Leu Ser Glu Arg Gln Ile Gly Ala Leu Val Val Leu Glu Asn Lys
 130 135 140
 Asp Ser Phe Asp Glu Tyr Leu Ser Phe Ser Ser Val Lys Ile Asn Ala
 145 150 155 160
 Thr Phe Ser Glu Glu Leu Leu Glu Thr Ile Phe Glu Pro Ser Ser Pro
 165 170 175
 Leu His Asp Gly Ala Val Ile Leu Arg Gly Asp Ile Leu Ala Tyr Ala
 180 185 190
 Arg Val Val Leu Pro Leu Ala His Asp Thr Thr Gln Leu Ser Arg Ser
 195 200 205
 Met Gly Thr Arg His Arg Ala Ala Leu Gly Ala Ser Gln Arg Ser Asp
 210 215 220
 Ala Leu Ile Ile Thr Val Ser Glu Glu Asn Gly Ser Val Ser Leu Ser
 225 230 235 240
 Arg Asp Gly Leu Leu Thr Arg Gly Val Lys Ile Asp Arg Phe Lys Ala
 245 250 255
 Val Leu Arg Ser Ile Leu Ser Pro Lys Glu His Lys Arg Lys Pro Leu
 260 265 270
 Phe Ser Trp Ile Trp Lys Arg
 275

<210>120

<211>448

<212>PRT

<213>Chlamydia pneumoniae

<400>120

Met Asp Ala Leu Ile Leu Ser Arg Ile Gln Phe Gly Leu Phe Ile Thr
 1 5 10 15
 Phe His Tyr Leu Phe Val Pro Leu Ser Met Gly Leu Ser Met Met Leu
 20 25 30
 Val Ile Met Glu Gly Leu Tyr Leu Val Thr Lys Lys Gln Ile Tyr Lys
 35 40 45
 Gln Met Thr Trp Phe Trp Val Gly Ile Phe Ala Leu Thr Phe Val Leu
 50 55 60
 Gly Val Val Thr Gly Ile Met Gln Ile Phe Ser Phe Gly Ser Asn Trp
 65 70 75 80
 Ala Asn Phe Ser Glu Tyr Thr Gly Asn Ile Phe Gly Thr Leu Leu Gly
 85 90 95
 Ser Glu Gly Val Phe Ala Phe Phe Leu Glu Ser Gly Phe Leu Gly Ile
 100 105 110

Leu Leu Phe Gly Arg His Lys Val Ser Lys Lys Met His Phe Phe Ser
 115 120 125
 Thr Cys Met Val Ala Leu Gly Ala His Met Ser Ala Phe Trp Ile Ile
 130 135 140
 Cys Ala Asn Ser Trp Met Gln Thr Pro Ser Gly Tyr Glu Met Val Met
 145 150 155 160
 His Lys Gly Lys Leu Ile Pro Ala Leu Thr Ser Phe Trp Gly Val Val
 165 170 175
 Phe Ser Pro Thr Thr Ile Asp Arg Phe Ile His Ala Val Leu Gly Thr
 180 185 190
 Trp Leu Ser Gly Val Phe Leu Val Ile Ser Val Ser Ala Tyr Tyr Leu
 195 200 205
 Trp Lys Lys Arg His His Glu Phe Ala Lys Gln Gly Met Lys Ile Gly
 210 215 220
 Thr Ile Cys Ala Val Ile Val Leu Val Leu Gln Leu Trp Ser Ala Asp
 225 230 235 240
 Val Thr Ala Arg Gly Val Ala Lys Asn Gln Pro Ala Lys Leu Ala Ala
 245 250 255
 Phe Glu Gly Ile Phe Lys Thr Glu Glu Tyr Thr Pro Ile Trp Ala Phe
 260 265 270
 Gly Tyr Val Asp Met Glu Lys Glu Arg Val Ile Gly Leu Pro Ile Pro
 275 280 285
 Gly Ala Leu Ser Phe Leu Val His Arg Asn Ile Lys Thr Pro Val Thr
 290 295 300
 Gly Leu Asp Gln Ile Pro Arg Asp Gln Trp Pro Asn Val Gln Ala Val
 305 310 315 320
 Phe Gln Leu Tyr His Leu Met Ile Met Leu Trp Gly Val Met Val Ala
 325 330 335
 Leu Thr Leu Ile Ser Trp Ser Ala Tyr Lys Gly Trp Arg Trp Ala Leu
 340 345 350
 Lys Pro Phe Phe Leu Val Ile Leu Thr Phe Ser Val Leu Leu Pro Glu
 355 360 365
 Ile Cys Asn Glu Cys Gly Trp Cys Ala Ala Glu Met Gly Arg Gln Pro
 370 375 380
 Trp Val Val Gln Gly Leu Leu Lys Thr Lys Asp Ala Val Ser Pro Ile
 385 390 395 400
 Val Gln Ala Asn Lys Ile Val Gln Ser Leu Val Ile Phe Ser Leu Val
 405 410 415
 Phe Ile Ala Leu Leu Thr Leu Phe Ile Thr Val Leu Cys Lys Lys Ile
 420 425 430
 Lys His Gly Pro Glu Glu Glu Asn Asp Leu Thr Glu Phe Glu Val Lys
 435 440 445

<210>121

<211>268

<212>PRT

<213>Chlamydia pneumoniae

<400>121

Met Glu Leu Ser Leu Thr Ser Leu Leu Pro Leu Ala Trp Tyr Val Ile
 1 5 10 15
 Leu Gly Val Ala Val Phe Ala Tyr Ser Phe Gly Asp Gly Phe Asp Leu
 20 25 30
 Gly Leu Gly Ala Val Tyr Leu Lys Ala Lys Glu Asp Lys Glu Arg Arg
 35 40 45
 Ile Leu Leu Asn Ser Ile Gly Pro Val Trp Asp Gly Asn Glu Val Trp
 50 55 60
 Leu Val Ile Ile Val Gly Gly Leu Phe Ala Gly Phe Pro Ala Cys Tyr
 65 70 75 80
 Ala Thr Leu Leu Ser Ile Phe Tyr Met Pro Ile Trp Thr Leu Val Leu
 85 90 95
 Leu Tyr Ile Phe Arg Gly Cys Ser Leu Glu Phe Arg Ser Lys Ser Glu
 100 105 110
 Ser Val Ser Trp Lys Ile Phe Trp Asp Ile Ile Phe Ile Cys Ser Gly
 115 120 125
 Thr Ala Ile Ser Phe Phe Leu Gly Thr Ile Val Gly Asn Leu Ile Leu

130 135 140
 Gly Leu Pro Leu Ser Pro Asp Thr Ser Tyr Ala Ser Leu Ser Trp Ile
 145 150 155 160
 Leu Phe Phe Arg Pro Tyr Ala Ala Leu Cys Gly Ala Val Val Ala Ser
 165 170 175
 Ala Phe Ala Thr His Gly Ser Phe Phe Ala Leu Met Lys Thr Ser Asp
 180 185 190
 Ser Leu Asn Ala Arg Ile Ala Gln Gln Phe Pro Tyr Ile Leu Ser Ser
 195 200 205
 Phe Leu Val Phe Tyr Val Leu Phe Leu Gly Ala Ser Leu Ile Ser Ile
 210 215 220
 Pro Lys Arg Phe Asp Ala Phe Pro Thr Tyr Pro Leu Leu Ile Leu Leu
 225 230 235 240
 Ile Ala Leu Thr Ser Cys Cys Cys Val Ala Ala Lys Thr Ser Val Ser
 245 250 255
 Lys Lys His Tyr Gly Thr His Leu Phe Ile Leu His
 260 265
 <210>122
 <211>402
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>122
 Glu Lys Ser Met Arg Met Leu Gln Ile Ser Met Leu Leu Leu Ala Leu
 1 5 10 15
 Gly Thr Ala Ile Asn Ser Pro Ala Ile Tyr Ala Ala Asp Ser Gln Ser
 20 25 30
 Val Ser Phe Pro Glu Gln Leu Pro Ser Ser Phe Thr Gly Glu Ile Lys
 35 40 45
 Gly Asn His Val Arg Met Arg Leu Ala Pro His Thr Asp Gly Thr Ile
 50 55 60
 Ile Arg Glu Phe Ser Lys Gly Asp Leu Val Ala Val Ile Gly Glu Ser
 65 70 75 80
 Lys Asp Tyr Tyr Val Ile Ser Ala Pro Pro Gly Ile Thr Gly Tyr Val
 85 90 95
 Phe Arg Ser Phe Val Leu Asp Asn Val Val Glu Gly Glu Gln Val Asn
 100 105 110
 Val Arg Leu Glu Pro Ser Thr Ser Ala Pro Val Leu Val Arg Leu Ser
 115 120 125
 Arg Gly Thr Gln Ile Gln Pro Ala Ser Gln Glu Pro His Gly Lys Trp
 130 135 140
 Leu Gln Val Val Leu Pro Ser Gln Cys Val Phe Tyr Val Ala Lys Asn
 145 150 155 160
 Phe Val Ala Asn Lys Gly Pro Ile Glu Leu Tyr Thr Gln Arg Glu Gly
 165 170 175
 Gln Lys Lys Ile Ala Met Asp Leu Ile Asn Ser Ala Leu Asn Phe Ala
 180 185 190
 His Ile Glu Leu Glu Lys Ser Leu Asn Glu Ile Asp Leu Glu Ala Ile
 195 200 205
 Tyr Lys Lys Ile Asn Leu Val Gln Ser Glu Glu Phe Lys Asp Val Pro
 210 215 220
 Gly Ile Gln Gly Leu Ile Gln Lys Ala Leu Glu Glu Ile Gln Asp Ala
 225 230 235 240
 Tyr Leu Ser Lys Ser Leu Glu Ser Gln Asn Thr Ser Ile Ala Ser Ser
 245 250 255
 Gln Cys Ser Thr Pro Lys Val Ser Ser Ser Glu Val Thr Thr Ser Leu
 260 265 270
 Leu Ser Arg His Ile Arg Lys Gln Thr Ala Leu Lys Thr Ala Pro Leu
 275 280 285
 Thr Gln Gly Arg Glu Asn Leu Glu Tyr Ser Leu Phe Arg Ile Trp Ala
 290 295 300
 Ser Met Gln Gln Gly Asn Asp His Ser Glu Ala Leu Thr Gln Glu Ala
 305 310 315 320
 Phe Tyr Arg Ala Glu Gln Lys Lys Lys Gln Val Leu Ala Gly Val Leu
 325 330 335

Glu Val Tyr Pro His Val Val Lys Asn Pro Gly Asp Tyr Leu Leu
 340 345 350
 Lys Ala Gln Glu Asn Thr Ile Ala Phe Leu Tyr Gly Thr Ser Ile Asn
 355 360 365
 Leu Glu Gln Trp Leu Gly Lys Arg Val Thr Val Glu Cys Leu Pro Arg
 370 375 380
 Pro Asn Asn His Phe Ala Phe Pro Ala Tyr Tyr Val Val Gly Ile Lys
 385 390 395 400
 Glu Ala Ser

<210>123

<211>255

<212>PRT

<213>Chlamydia pneumoniae

<400>123

Tyr Val Pro Phe Arg Lys Phe Ser Asn Gln Asn Pro Met Leu Leu Ile
 1 5 10 15
 Tyr Cys Lys Lys Lys Glu Ile His Leu Gln Trp Pro Gln Thr Ala Lys
 20 25 30
 Ile Arg Phe Thr Pro Lys Ile Ala Met Lys Val Lys Ile Asn Asp Gln
 35 40 45
 Leu Ile Cys Ile Pro Pro Phe Ile Ser Ala Arg Trp Ser Gln Ile Ala
 50 55 60
 Phe Ile Glu Ser Gln Glu Gly Glu Asn Lys Asp Gln Gly Thr Leu Arg
 65 70 75 80
 Leu His Leu Ile Asp Gly Lys Ile Ile Ser Ile Pro Asn Leu Asp Gln
 85 90 95
 Ser Ile Ile Asp Ile Ala Phe Gln Glu His Leu Leu Tyr Leu Glu Thr
 100 105 110
 Ser Gln Ser Gly Lys Glu Asp Ser Arg Asp Asp Lys Leu Gly Val
 115 120 125
 Gly Val Leu Met Asn Val Leu Gln Gln Ile Thr Lys Gly Asn Asp Ile
 130 135 140
 Gln Val Leu Pro Lys Asn Leu Ile Ser Pro Leu Phe Ser Gly Thr Asn
 145 150 155 160
 Pro Ile Glu Ala Ile Leu Gln His Thr Pro Glu His Lys Asp His Pro
 165 170 175
 Asp Ala Pro Thr Asp Val Leu Glu Lys Met Ala Asp Val Ile Arg Val
 180 185 190
 Leu Ser Gly Asn Asn Ala Thr Leu Leu Pro Arg Pro Glu Pro His Cys
 195 200 205
 Asn Cys Met His Cys Gln Ile Gly Arg Val Met Asn Glu Glu Asp Thr
 210 215 220
 Leu Ala Val Ser Asp Lys Asp Leu Thr Phe Arg Thr Trp Asp Ile Met
 225 230 235 240
 Gln Ser Gly Asp Lys Val Val Tyr Cys Asn Glu Ser Leu Lys Ser
 245 250 255

<210>124

<211>432

<212>PRT

<213>Chlamydia pneumoniae

<400>124

Val Arg Thr Gln Met Lys Lys Thr Met Val Ile Asp Thr Ser Val Phe
 1 5 10 15
 Ile Tyr Asp Pro Glu Ala Leu Phe Ser Phe Glu Asn Thr Arg Ile Ile
 20 25 30
 Ile Pro Phe Pro Val Ile Glu Glu Leu Glu Ala Phe Gly Lys Phe Arg
 35 40 45
 Asp Glu Ser Ala Lys Asn Ala Ser Arg Ala Leu Ser Asn Ile Arg Leu
 50 55 60
 Leu Leu Glu Asn Ala Lys Thr Lys Val Thr Asp Gly Val Leu Leu Pro
 65 70 75 80
 Ser Gly Ser Glu Leu Arg Ile Glu Val Ala Pro Leu Ser Asn Asp Asp
 85 90 95

Arg Arg Gly Lys Leu Leu Thr Leu Glu Leu Leu Lys Ile Ile Ala Lys
 100 105 110
 Arg Glu Pro Met Val Phe Val Thr Lys Ser Leu Gly Arg Arg Val Arg
 115 120 125
 Ala Glu Ala Leu Glu Ile Glu Ser Arg Asp Tyr Glu Ser Lys Arg Phe
 130 135 140
 Ser Phe Arg Ser Leu Tyr Arg Gly Phe Arg Glu Leu Gln Val Ser Gln
 145 150 155 160
 Glu Asp Ile Glu Asn Phe Tyr Lys Asn Gly Tyr Leu Asp Leu Pro Leu
 165 170 175
 Asp Val Val Ser Ser Pro Asn Glu Tyr Phe Phe Met Ser Ala Gly Glu
 180 185 190
 Asn His Phe Ala Leu Gly Arg Tyr Tyr Val Ser Glu Gly Lys Ile Ile
 195 200 205
 Ala Leu Lys Ala Met Asp Lys Ser Val Trp Gly Ile Lys Pro Leu Asn
 210 215 220
 Thr Glu Gln Arg Cys Ala Leu Asp Leu Leu Leu Arg Asp Asp Val Lys
 225 230 235 240
 Leu Val Thr Leu Ile Gly Gln Ala Gly Ser Gly Lys Thr Ile Leu Ala
 245 250 255
 Leu Ala Ala Ala Met His Lys Val Phe Asp Lys Glu Thr Tyr Asn Lys
 260 265 270
 Val Leu Val Ser Arg Pro Ile Val Pro Met Gly Arg Asp Ile Gly Phe
 275 280 285
 Leu Pro Gly Leu Lys Glu Asp Lys Leu Met His Trp Met Gln Pro Ile
 290 295 300
 Tyr Asp Asn Met Glu Val Leu Phe Ser Ile Asn Gln Met Gly Asn Ser
 305 310 315 320
 Ser Glu Ala Leu Gln Ala Leu Met Asp Ala Lys Lys Leu Glu Met Glu
 325 330 335
 Ala Leu Thr Tyr Ile Arg Gly Arg Ser Leu Pro Lys Ala Phe Ile Ile
 340 345 350
 Ile Asp Glu Ala Gln Asn Leu Thr Pro His Glu Ile Lys Thr Ile Ile
 355 360 365
 Ser Arg Ala Gly Lys Gly Thr Lys Ile Val Leu Thr Gly Asp Pro Thr
 370 375 380
 Gln Ile Asp Ser Leu Tyr Phe Asp Glu Asn Ser Asn Gly Leu Thr Tyr
 385 390 395 400
 Leu Val Gly Lys Phe His His Leu Ala Leu Tyr Gly His Met Phe Met
 405 410 415
 Thr Arg Thr Glu Arg Ser Glu Leu Ala Ala Ala Ala Thr Ile Leu
 420 425 430

<210>125

<211>164

<212>PRT

<213>Chlamydia pneumoniae

<400>125

Asn Asn Glu Ser Arg Trp Gly Gly Tyr Lys Ser Ser Ser Ile Gly Ser
 1 5 10 15
 Ser Gln Cys Arg Phe Leu Gly Leu Ser Gln Arg Pro Leu Asn Pro Glu
 20 25 30
 Arg Gln Gly Thr Pro Leu Asn Gln Gly Glu Cys Arg Ala Gly Met Trp
 35 40 45
 Arg Asn Ala Asp Gly Ser Asn His Thr Gly Lys Gln Gly Lys Pro His
 50 55 60
 Tyr Leu Ala Gln Leu Leu Gly Pro Lys Ala Val Asp His His Asn Lys
 65 70 75 80
 Ser Glu Ala Ala Phe Asp Arg Cys Lys Asn Ala Tyr Leu Asn Cys Phe
 85 90 95
 Ser Leu Ala Gln Thr Leu Gly Val Thr Phe Leu Gln Ile Pro Leu Ile
 100 105 110
 Ser Ser Gly Ile Tyr Ala Pro Pro Glu Asn Arg Lys Lys Pro Asn Ser
 115 120 125
 Glu Glu Asn Lys Val Arg Met Arg Trp Ile His Ala Val Lys Cys Ala

130 135 140
 Leu Val Ala Ala Met Gln Glu Phe Gly Asn Glu Pro Gly Asn Thr Asp
 145 150 155 160
 Arg Arg Met Leu Ile Val Leu Thr Asp Leu Lys Thr Pro Ala Ile Thr
 165 170 175
 Asp Pro Lys Lys Lys Ser His Leu
 180

<210>126

<211>195

<212>PRT

<213>Chlamydia pneumoniae

<400>126

Lys Asn Leu Phe His Tyr Lys Ala Ile Leu Met Ser Ile Phe Asn Glu
 1 5 10 15
 Glu Val Phe Ile Ile Ser His Arg His Thr Pro Leu Gly Gln Thr Ser
 20 25 30
 Thr Ala Ileu Arg Asn Thr Pro Leu Val Asn Pro Leu His Arg Thr Asn
 35 40 45
 Leu Gln Arg Ile Ala Ser Tyr Ile Pro Ile Phe Ser Thr Phe Ile Gly
 50 55 60
 Ile Lys Thr Leu Lys Gly Ile Ser Ser Leu Gln Tyr Ser Met Val Leu
 65 70 75 80
 Met Thr Gly Asn Phe Ser Ser Val Cys Lys Thr Leu Pro Cys Pro Glu
 85 90 95
 Ile Tyr Glu Glu Leu Pro Lys Val Arg Lys Glu Ala Trp Leu Glu Ile
 100 105 110
 Phe Gly Ile Lys Ala Leu Tyr Tyr Leu Val Leu Gly Val Ile Lys Ile
 115 120 125
 Ile Lys Leu Ile Val Arg Tyr Leu Cys Pro Cys Cys Arg Pro Pro Glu
 130 135 140
 Pro Arg Glu Pro Gln Asn Pro Leu Thr Pro Thr Pro Leu Asp Met Gly
 145 150 155 160
 Gln Gln Ile Asp Ala Ile Phe Ser Thr Pro Thr Ser Pro Thr Gly Phe
 165 170 175
 Lys Asp Pro Phe Leu Asp Asp Leu Leu Gln Glu Asp Lys Lys Lys Ala
 180 185 190
 Pro His Leu
 195

<210>127

<211>1043

<212>PRT

<213>Chlamydia pneumoniae

<400>127

Met Thr Ala Asp Glu Val Gly Lys Asn Ser Phe Ala Lys Lys Glu Glu
 1 5 10 15
 Gln Val Leu Lys Phe Trp Lys Asp Asn Gln Ile Phe Glu Lys Ser Leu
 20 25 30
 Gln Asn Arg Gln Gly Lys Thr Leu Tyr Ser Phe Tyr Asp Gly Pro Pro
 35 40 45
 Phe Ala Thr Gly Leu Pro His Tyr Gly His Leu Leu Ala Ser Thr Ile
 50 55 60
 Lys Asp Val Val Gly Arg Tyr Ala Thr Met Asp Gly Tyr Tyr Val Pro
 65 70 75 80
 Arg Arg Phe Gly Trp Asp Cys His Gly Val Pro Val Glu Tyr Glu Val
 85 90 95
 Glu Lys Ser Leu Ser Leu Thr Ala Pro Gly Pro Ile Glu Asp Phe Gly
 100 105 110
 Ile Ala Ser Phe Asn Glu Glu Cys Arg Lys Ile Val Phe Arg Tyr Val
 115 120 125
 His Glu Trp Glu Tyr Tyr Ile Asn Arg Ile Gly Arg Trp Val Asp Phe
 130 135 140
 Ser Ser Thr Trp Lys Thr Met Asp Ala Ser Phe Met Glu Ser Val Trp
 145 150 155 160
 Trp Val Phe Gln Ser Leu Tyr Asn Gln Gly Leu Val Tyr Glu Gly Thr

165 170 175
 Lys Val Val Pro Phe Ser Thr Ala Leu Gly Thr Pro Leu Ser Asn Phe
 180 185 190
 Glu Ala Ser Gln Asn Tyr Lys Glu Val Asp Asp Pro Ser Leu Val Val
 195 200 205
 Arg Met Pro Leu Gln Asn Asp Ser Ala Ser Leu Leu Val Trp Thr Thr
 210 215 220
 Thr Pro Trp Thr Leu Pro Ser Asn Met Ala Ile Ala Val Gly Glu Thr
 225 230 235 240
 Leu Val Tyr Val Arg Ile Gln Asp Lys Lys Ser Gly Glu Gln Trp Ile
 245 250 255
 Leu Ser Gln Gly Cys Val Ser Arg Trp Phe Ser Asn Pro Glu Glu Phe
 260 265 270
 Val Ile Leu Glu Ser Phe Ser Gly Lys Asp Leu Val Gly Arg Thr Tyr
 275 280 285
 Glu Pro Pro Phe Thr Phe Phe Gln Ser Lys Arg Glu Glu Gly Ala Phe
 290 295 300
 Arg Val Ile Ala Ala Ser Phe Val Glu Glu Ser Glu Gly Thr Gly Val
 305 310 315 320
 Val His Met Ala Pro Ala Phe Gly Glu Gly Asp Phe Leu Val Cys Lys
 325 330 335
 Glu Asn His Val Pro Leu Val Cys Pro Val Asp Ala His Gly Ser Phe
 340 345 350
 Thr Glu Glu Ile Pro Gln Tyr Gln Gly Gln Tyr Ile Lys His Ala Asp
 355 360 365
 Lys Glu Ile Ile Lys Phe Leu Lys Lys Glu Gly Arg Ile Phe Tyr His
 370 375 380
 Gly Thr Val Lys His Arg Tyr Pro Phe Cys Trp Arg Thr Asp Thr Pro
 385 390 395 400
 Leu Ile Tyr Lys Ala Val Asn Ser Trp Phe Val Ala Val Glu Lys Ile
 405 410 415
 Lys Asp Lys Met Leu Arg Ala Asn Ser Ser Ile His Trp Val Pro Glu
 420 425 430
 His Ile Gln Glu Gly Arg Phe Gly Lys Trp Leu Glu Gly Ala Arg Asp
 435 440 445
 Trp Ala Ile Ser Arg Asn Arg Tyr Trp Gly Thr Pro Ile Pro Ile Trp
 450 455 460
 Lys Ser Ala Asp Gly Glu Ile Leu Val Val Gly Ser Ile Arg Glu Leu
 465 470 475 480
 Glu Glu Leu Thr Gly Thr Gln Ile Thr Asp Ile His Arg His Phe Ile
 485 490 495
 Asp Asp Leu Asn Ile Val Lys Asp Gly Lys Pro Phe His Arg Ile Pro
 500 505 510
 Tyr Val Phe Asp Cys Trp Phe Asp Ser Gly Ala Met Pro Tyr Ala Gln
 515 520 525
 Asn His Tyr Pro Phe Glu Asn Gln Lys Glu Thr Glu Glu Ala Phe Pro
 530 535 540
 Ala Asp Phe Ile Ala Glu Gly Leu Asp Gln Thr Arg Gly Trp Phe Tyr
 545 550 555 560
 Thr Leu Thr Val Ile Ser Ala Ile Leu Phe Asp Arg Pro Ala Phe Arg
 565 570 575
 Asn Ala Ile Val Asn Gly Ile Ile Leu Ala Glu Asp Gly Asn Lys Met
 580 585 590
 Ser Lys Arg Leu Asn Asn Tyr Pro Ser Pro Lys Tyr Val Leu Asp Thr
 595 600 605
 Tyr Gly Ala Asp Ala Leu Arg Leu Tyr Leu Leu His Ser Val Val Val
 610 615 620
 Lys Ala Glu Asp Leu Arg Phe Ser Asp Lys Gly Ile Glu Gly Val Leu
 625 630 635 640
 Lys Gln Ile Leu Leu Pro Leu Thr Asn Val Leu Ser Phe Phe Asn Thr
 645 650 655
 Tyr Ala Glu Leu Tyr Gly Phe Asp Pro Lys Ser Gln Asp Ile Glu Pro
 660 665 670
 Ala Tyr Thr Glu Ile Asp Gln Trp Ile Leu Ser Asn Leu Tyr Ser Val

675	680	685
Val Gly Lys Val Arg Glu Ser Met Ser Gln Tyr His Leu Asn Phe Ala		
690	695	700
Val Glu Pro Phe Val Thr Phe Ile Asp Asp Leu Thr Asn Trp Tyr Ile		
705	710	715
Arg Arg Cys Arg Arg Arg Phe Trp Glu Ala Glu Asp Thr Pro Asp Arg		
725	730	735
Arg Ala Ala Phe Ser Thr Leu Tyr Glu Val Leu Thr Val Phe Cys Lys		
740	745	750
Val Ile Ala Pro Phe Val Pro Phe Leu Ala Glu Asp Ile Tyr Gln Lys		
755	760	765
Leu Lys Leu Glu Lys Glu Pro Glu Ser Val His Leu Cys Asp Phe Pro		
770	775	780
Gln Val Glu Met Asp Lys Ile Leu Pro Asp Leu Glu Lys Arg Met His		
785	790	795
Asp Ile Arg Glu Ile Val Gly Leu Gly His Ser Leu Arg Lys Glu His		
805	810	815
Lys Leu Lys Val Arg Gln Pro Leu Ala Asn Phe Tyr Val Val Gly Ser		
820	825	830
Lys Asp Arg Leu Ser Leu Leu Lys Thr Phe Glu Gly Leu Ile Ala Glu		
835	840	845
Glu Leu Asn Val Lys Asn Val Ile Phe Tyr Glu Glu Ala Pro Ser Phe		
850	855	860
Ile Tyr Thr Thr Val Lys Pro Asn Phe Arg Met Leu Gly Lys Lys Val		
865	870	875
Gly Ser Lys Met Lys Glu Val Gln Lys Ala Leu Ser Glu Leu Pro Asn		
885	890	895
Asn Ala Ile Asp Lys Leu Ile Gln Glu Thr Trp Val Leu Thr Ile		
900	905	910
Asp Asp Arg Glu Ile Ala Leu Asp Gly Asp Asp Val Val Ile Cys Arg		
915	920	925
His Thr Asp Pro Gly Tyr Ile Ala Arg Ser Ser Ala Leu Phe Ser Val		
930	935	940
Ile Leu Asp Cys Gln Leu Arg Glu Pro Leu Ile Val Glu Gly Ile Ala		
945	950	955
Arg Glu Leu Val Asn Lys Ile Asn Thr Met Arg Arg Asn Gln Gln Leu		
965	970	975
His Val Ser Asp Arg Ile Ala Leu Arg Ile Lys Thr Thr Glu Ala Val		
980	985	990
His Arg Ala Phe Leu Asp Tyr Glu Asn Tyr Ile Cys Glu Glu Thr Leu		
995	1000	1005
Ile Ile Ala Tyr Asp Phe Thr Gln Asp Ser Asp Phe Gln Gly Glu Asn		
1010	1015	1020
Trp Asp Ile Asn Gly His Ala Thr Gln Ile Glu Ile Thr Val Ser Ser		
1025	1030	1035
Ile Asp Ser		1040

<210>128

<211>636

<212>PRT

<213>Chlamydia pneumoniae

<400>128

Met Lys Gln His Tyr Ser Leu Asn Lys Ser Arg His Ile Leu Arg Ser		
1	5	10
Thr Tyr Lys Leu Lys Ser Lys Lys Leu Ala His Ser Pro Ala Asp		
20	25	30
Lys Lys Gln Leu Gln Glu Leu Leu Glu Gln Leu Glu Glu Ala Ile Phe		
35	40	45
Glu His Asp Gln Glu Thr Ala Ser Asp Leu Ala Gln Gln Ala Leu Ala		
50	55	60
Phe Ser Asn Arg Tyr Pro Asn Ser Phe Gly Arg Lys Thr Tyr Glu Leu		
65	70	75
Ile Lys Ala Leu Leu Phe Ala Gly Val Val Ala Phe Leu Val Arg Gln		
85	90	95

Phe Trp Phe Glu Leu Tyr Glu Val Pro Thr Gly Ser Met Arg Pro Thr
 100 105 110
 Ile Leu Glu Gln Asp Arg Ile Leu Val Ser Lys Thr Thr Phe Gly Leu
 115 120 125
 His Cys Pro Phe Ala Lys Lys Pro Leu Ala Phe Asn Pro Glu Ser Val
 130 135 140
 Thr Arg Gly Gly Leu Val Val Phe Thr Val Gly Asp Leu Pro Ile Pro
 145 150 155 160
 Asp Ala Asp Thr Lys Tyr Phe Gly Leu Ile Pro Gly Lys Lys Arg Tyr
 165 170 175
 Ile Lys Arg Cys Met Gly Arg Pro Gly Asp Phe Leu Tyr Phe Tyr Gly
 180 185 190
 Gly Lys Ile Tyr Gly Leu Asp Asp Ala Gly Lys Arg Ile Glu Phe Pro
 195 200 205
 Ser Val His Gly Leu Glu Asn Leu Tyr His Val Pro Tyr Ile Ser Phe
 210 215 220
 Asp Gly Thr Thr Ser Ser His Thr Glu Gly Gln Lys Thr Ile Ile Asp
 225 230 235 240
 Phe Lys Gln Phe Asn Gln Ser Tyr Gly Arg Leu Ile Phe Pro Gln Thr
 245 250 255
 Ser Met Tyr Gly Gln Phe Phe Asp His Lys Glu Trp His Gln Asp Glu
 260 265 270
 Pro Asn Lys Leu Lys Asp Pro His Leu Ser Pro Val Ser Tyr Ala Asp
 275 280 285
 Leu Phe Gly Met Gly Asn Tyr Ala Met Val Arg Ile Leu Thr Glu His
 290 295 300
 Gln Ala Arg Thr Ser His Leu Leu Pro Asn Pro Gly Ser Pro Thr Lys
 305 310 315 320
 Val Tyr Leu Glu Ile Cys His Thr Ala Asn Leu Ser Tyr Pro Lys Pro
 325 330 335
 Leu Leu Arg His Tyr Glu His Gln Leu Ser Pro Ala Ile Gln Pro Met
 340 345 350
 Lys Thr Leu Leu Pro Leu Arg Lys Glu His Leu His Leu Ile Arg Asn
 355 360 365
 Asn Leu Thr Thr Ser Arg Phe Ile Val Ala Gln Gly Cys Ala Tyr Lys
 370 375 380
 Tyr His Gln Phe Lys Ile Asn Thr Ser Gly Ile Ala Lys Ala Tyr Ala
 385 390 395 400
 Ile Leu Leu Pro Lys Val Pro Asp Gly Cys Tyr Glu Tyr Ser Lys Gly
 405 410 415
 Glu Ala Tyr Gln Ile Gly Phe Gly Glu Ile Arg Tyr Lys Leu Lys Ser
 420 425 430
 Ser His Pro Leu Thr Gln Leu Asn Asp Lys Gln Val Ile Glu Leu Phe
 435 440 445
 Asn Cys Gly Ile Asn Phe Ser Ser Ile Tyr Asn Pro Val Asn Pro Leu
 450 455 460
 Gln Ala Pro Leu Pro Asn Arg Tyr Ala Phe Phe Asn Gln Gly Asn Leu
 465 470 475 480
 Tyr Ile Met Asp Ser Pro Val Phe Ile Lys Asn Asp Pro Thr Leu Gln
 485 490 495
 Lys Phe Val Thr Ser Glu Thr Glu Lys Gln Glu Gly Ser Ser Glu Thr
 500 505 510
 Gln Pro Tyr Ile Ala Phe Val Asp Lys Gly Leu Pro Pro Glu Asp Phe
 515 520 525
 Lys Glu Phe Val Glu Phe Ile His Asn Phe Gly Ile Gln Val Pro Lys
 530 535 540
 Gly His Val Leu Val Leu Gly Asp Asn Tyr Pro Met Ser Ala Asp Ser
 545 550 555 560
 Arg Glu Phe Gly Phe Val Pro Met Glu Asn Leu Leu Gly Ser Pro Leu
 565 570 575
 Cys Thr Phe Trp Pro Ile Gly Arg Met Gly Arg Leu Thr Gly Val Ser
 580 585 590
 Ala Pro Thr Thr Leu Ser Gly Tyr Leu Val Ser Gly Ile Ala Leu Ala
 595 600 605

Thr Gly Leu Ser Leu Ile Gly Tyr Val Tyr Tyr Gln Lys Arg Arg Arg
 610 615 620
 Leu Phe Pro Lys Lys Glu Glu Lys Asn His Lys Lys
 625 630 635

<210>129

<211>276

<212>PRT

<213>Chlamydia pneumoniae

<400>129

Gln Leu Gln Asn Arg Tyr Pro Ile Met Pro Asn Asp Ser Ser Thr Tyr
 1 5 10 15
 Phe Glu Arg Ile Leu Gln Lys Tyr Leu Met Lys Lys Gln Gly Lys Thr
 20 25 30
 Leu Phe Leu Phe Leu Phe Leu Ser Phe Leu Phe Ser Thr Ala Phe Ser
 35 40 45
 Gly Leu Phe Ala Ser Gln Thr Ser Ser Leu Arg Thr Ile Gln Glu Asn
 50 55 60
 Ile Phe Leu Ala Lys Thr Gly Asp Tyr Thr Val Leu Ser Arg Gly Ser
 65 70 75 80
 Gln Arg Thr Phe Val Leu Val Lys Ser Thr Thr Pro Lys Thr Val Trp
 85 90 95
 Ile Glu Ile Ile His Phe Pro Cys Ile Ala His Lys Glu Arg Pro Ser
 100 105 110
 Leu Glu Gln Ala Ser Trp Lys Thr Val Ile His Gln Leu Glu Ser Pro
 115 120 125
 Ser Gln Val Phe Val Val Ser Leu Ser Ser Glu Gly Ser Gln Phe Phe
 130 135 140
 Ser Leu Asn Thr Arg Thr Lys Ser Leu Glu Pro Val Gly Lys Ser Thr
 145 150 155 160
 Thr Val Pro Ala Phe Leu Gln Ile Phe Asp Leu Pro Leu Ser Pro Ala
 165 170 175
 Pro Ala Asn Val Ile Lys Thr Lys Gly Lys Glu Asn Lys Pro Trp Ser
 180 185 190
 Pro Lys Val Ser Phe Glu Gly Ala Pro Leu Thr Ser Ile Ser Val Asn
 195 200 205
 Ala Trp Gln Gly Leu Trp Pro Lys Asp Arg Gly Pro Leu Ser Glu Thr
 210 215 220
 Gly Ile Leu Met Tyr Phe Thr Gln Pro Asp Ile Ser Val Phe Pro Leu
 225 230 235 240
 Trp Val Ser Ile Glu Thr Pro Lys Gly Thr Ser Ile Val Arg Ala Val
 245 250 255
 Asp Ile Gly His Gly Ala Thr Ser Pro Tyr Val Tyr Ser Leu Pro Asp
 260 265 270
 Ser Lys Thr Gln
 275

<210>130

<211>109

<212>PRT

<213>Chlamydia pneumoniae

<400>130

Met Lys Lys Asn Thr His Pro Glu Tyr Arg Gln Val Leu Phe Val Asp
 1 5 10 15
 Xaa Ser Thr Gly Tyr Lys Phe Val Cys Gly Xaa Thr Tyr Gln Ser Glu
 20 25 30
 Lys Thr Glu Val Phe Glu Gly Lys Glu Tyr Pro Val Cys Tyr Val Ser
 35 40 45
 Val Ser Ser Ser Ser His Pro Phe Phe Thr Gly Ser Lys Lys Phe Val
 50 55 60
 Asp Ala Glu Gly Arg Val Asp Lys Phe Leu Lys Arg Tyr Ser Asn Val
 65 70 75 80
 Arg Gln Pro Ala Gln Gln Pro Gln Pro Glu Glu Asp Ala Leu Pro Ala
 85 90 95
 Ala Lys Gly Lys Lys Lys Val Val Thr Lys Lys Lys Lys
 100 105

<210>131

<211>359

<212>PRT

<213>Chlamydia pneumoniae

<400>131

Gly Phe Met Lys Lys Lys Val Ala Glu Tyr Leu Asn Arg Leu Ala Glu
 1 5 10 15
 Val Glu Ile Lys Ile Ser Asn Pro Glu Ile Phe Ser Asn Ser Lys Glu
 20 25 30
 Tyr Ser Ala Leu Ser Lys Glu His Ser Tyr Leu Leu Glu Leu Lys Asn
 35 40 45
 Ala Tyr Asp Lys Ile Leu Asn Leu Glu Lys Val Leu Ala Asp Asp Lys
 50 55 60
 Gln Ala Leu Ala Ile Glu Lys Asp Pro Glu Met Val Val Met Leu Glu
 65 70 75 80
 Glu Gly Ile Asn Glu Asn Lys Val Glu Leu Glu Lys Leu Asn Lys Ile
 85 90 95
 Leu Glu Ser Leu Leu Val Pro Pro Asp Pro Asp Asp Asp Leu Asn Val
 100 105 110
 Ile Met Glu Leu Arg Ala Gly Thr Gly Gly Glu Glu Ala Ala Leu Phe
 115 120 125
 Val Gly Asp Cys Val Arg Met Tyr His Leu Tyr Ala Ser Ser Lys Gly
 130 135 140
 Trp Lys Tyr Glu Val Leu Ser Ala Ser Glu Ser Asp Leu Lys Gly Tyr
 145 150 155 160
 Lys Glu Tyr Val Met Gly Ile Ser Gly Thr Gly Val Lys Arg Leu Leu
 165 170 175
 Gln Tyr Glu Ala Gly Thr His Arg Val Gln Arg Val Pro Glu Thr Glu
 180 185 190
 Thr Gln Gly Arg Val His Thr Ser Ala Ile Thr Ile Ala Val Leu Pro
 195 200 205
 Glu Pro Ser Glu Glu Asp Thr Glu Leu Leu Ile Asn Glu Lys Asp Leu
 210 215 220
 Lys Ile Asp Thr Phe Arg Ala Ser Gly Ala Gly Gly Gln His Val Asn
 225 230 235 240
 Val Thr Asp Ser Ala Val Arg Ile Thr His Leu Pro Thr Gly Val Val
 245 250 255
 Val Thr Cys Gln Asp Glu Arg Ser Gln His Lys Asn Lys Asp Lys Ala
 260 265 270
 Met Arg Ile Leu Lys Ala Arg Ile Arg Asp Ala Glu Met Cln Lys Arg
 275 280 285
 His Asn Glu Ala Ser Ala Met Arg Ser Ala Cln Val Gly Ser Gly Asp
 290 295 300
 Arg Ser Glu Arg Ile Arg Thr Tyr Asn Phe Ser Gln Asn Arg Val Thr
 305 310 315 320
 Asp His Arg Ile Gly Leu Thr Leu Tyr Asn Leu Asp Lys Val Met Glu
 325 330 335
 Gly Asp Leu Asp Pro Ile Thr Thr Ala Met Val Ser His Ala Tyr His
 340 345 350
 Gln Leu Leu Glu His Gly Asn
 355

<210>132

<211>296

<212>PRT

<213>Chlamydia pneumoniae

<400>132

Met Pro Thr Thr Ser Tyr Ser Asn Met Glu Ile Lys Lys Ala Ile Gln
 1 5 10 15
 Glu Gly Thr Ala Tyr Leu Asp Tyr Tyr Gly Val Pro Leu Ser Asp Cys
 20 25 30
 Glu Ala Leu Tyr Ile Leu Met Asp Leu Leu Glu Val Ser Ser Arg Ala
 35 40 45
 Lys Leu Phe Asp Leu Val Gly Ile Ser Glu Thr Met Leu Met Glu Tyr
 50 55 60

Arg Lys Arg Leu Ala Leu Arg Gly Gln Arg Cys Pro Thr Ala Tyr Leu
 65 70 75 80
 Asn Gly Ala Val Ser Phe Leu Gly Leu Arg Leu Arg Val Asp Ser Arg
 85 90 95
 Val Leu Ile Pro Arg Thr Glu Thr Glu Leu Leu Ala Glu Tyr Ile Ile
 100 105 110
 Asn Tyr Leu Leu Ser His Ser Glu Ile Gln Thr Phe Tyr Asp Ile Cys
 115 120 125
 Cys Gly Ser Gly Cys Leu Gly Leu Ala Ile Lys Lys Ser Cys Pro His
 130 135 140
 Val Glu Val Val Leu Ser Asp Val Cys Pro Gln Ala Val Ala Val Ala
 145 150 155 160
 Asn Glu Asn Ala Lys Ser Asn Gly Leu Asp Val Lys Ile Leu Leu Gly
 165 170 175
 Asp Leu Ser Ala Pro Tyr Thr Arg Pro Ala Asp Ala Phe Val Cys Asn
 180 185 190
 Pro Pro Tyr Leu Ser Phe Asn Glu Ile Ile His Ile Asp Pro Glu Val
 195 200 205
 Arg Cys Tyr Glu Pro Trp Lys Ala Leu Val Gly Gly Ser Thr Gly Leu
 210 215 220
 Glu Phe Tyr Gln Arg Ile Ala Gln Glu Leu Pro Lys Ile Val Thr Ser
 225 230 235 240
 Thr Gly Val Gly Trp Leu Glu Ile Gly Ser Ser Gln Gly Glu Ser Ile
 245 250 255
 Lys Asn Ile Phe Ser Lys His Gly Ile Tyr Gly Arg Leu His Gln Asp
 260 265 270
 Leu Ser Gly Arg Asp Arg Ile Phe Phe Leu Glu Met Asp Gly Arg Asp
 275 280 285
 Pro Val Ser Ser Gly Ala Tyr Ser
 290 295

<210>133

<211>448

<212>PRT

<213>Chlamydia pneumoniae

<400>133

Met Ile Asn Ser Leu Ser Gln Lys Leu Ser Ser Ile Phe Ser Phe Leu
 1 5 10 15
 Val Ser Ser Arg Arg Ile Asn Glu Glu Asn Ile Ser Glu Ser Ile Arg
 20 25 30
 Glu Val Arg Leu Ala Leu Leu Asp Ala Asp Val Asn Tyr His Val Val
 35 40 45
 Lys Asp Phe Ile Ser Lys Val Lys Xaa Lys Ile Leu Gly Glu Glu Ile
 50 55 60
 Trp Lys His Val Ser Pro Gly Lys Gln Phe Ile Arg Cys Leu His Glu
 65 70 75 80
 Glu Leu Val Ala Phe Leu Ser Asp Gly Arg Glu Glu Phe Thr Ile Gln
 85 90 95
 Lys Thr Pro Ser Ile Ile Leu Leu Cys Gly Leu Gln Gly Ala Gly Lys
 100 105 110
 Thr Thr Thr Ala Ala Lys Leu Ala Asp Tyr Val Ile Lys Asn Lys Lys
 115 120 125
 Ala Lys Lys Val Leu Val Val Pro Cys Asp Leu Lys Arg Phe Ala Ala
 130 135 140
 Val Asp Gln Leu Lys Ile Leu Val Ala Gln Thr Lys Ala Glu Phe Tyr
 145 150 155 160
 Gln Ser Gln Glu Asn Lys Pro Ile Asp Val Val Val Lys Ala Leu Ala
 165 170 175
 Tyr Ala Lys Glu Asn Gly His Asp Phe Val Ile Leu Asp Thr Ala Gly
 180 185 190
 Arg Leu Asn Ile Asp Asn Glu Leu Met Glu Glu Leu Thr Ala Ile Gln
 195 200 205
 Lys Val Ser Gln Ala Asn Glu Arg Leu Phe Val Met Asn Val Ala Met
 210 215 220
 Gly Gln Asp Val Leu Ala Thr Val Gln Ala Phe Asp Gln Ser Leu Asp

225 230 235 240
 Leu Thr Gly Val Ile Leu Ser Met Thr Asp Gly Asp Ala Arg Ala Gly
 245 250 255
 Ala Val Phe Ser Ile Lys His Val Leu Gly Lys Pro Ile Lys Phe Glu
 260 265 270
 Gly Cys Gly Glu Arg Ile Gln Asp Leu Arg Ser Phe Asp Pro Gln Ser
 275 280 285
 Met Ala Glu Arg Ile Leu Gly Met Gly Asp Thr Ile Asn Phe Val Lys
 290 295 300
 Glu Met Arg Glu Tyr Ile Ser Glu Glu Glu Asp Ala Glu Leu Gly Lys
 305 310 315 320
 Lys Leu Val Thr Ala Ala Phe Thr Tyr Glu Asp Tyr Tyr Lys Gln Met
 325 330 335
 Lys Ala Phe Arg Arg Met Gly Pro Leu Arg Lys Leu Leu Gly Met Met
 340 345 350
 Pro Gly Phe Asn Asn Ala Lys Pro Ser Gln Lys Glu Ile Glu Asp Ser
 355 360 365
 Glu Gln Gln Met Lys Arg Thr Glu Ala Ile Ile Leu Ser Met Thr Pro
 370 375 380
 Glu Glu Arg Lys Glu Leu Val Glu Leu Asp Met Ser Arg Met Lys Arg
 385 390 395 400
 Ile Ala Ser Gly Cys Gly Leu Thr Leu Gly Asp Val Asn Gln Phe Arg
 405 410 415
 Lys Gln Met Ser Gln Ser Lys Lys Phe Phe Lys Gly Met Ser Lys Gly
 420 425 430
 Lys Met Glu Gln Val Arg Lys Lys Met Ser Gly Gly Asn Gln Trp Arg
 435 440 445

<210>134

<211>208

<212>PRT

<213>Chlamydia pneumoniae

<400>134

Met Lys Ile Asp Ile Leu Ser Leu Ser Pro Gly Tyr Phe Asp Gly Pro
 1 5 10 15
 Leu Gln Thr Ser Ile Leu Gly Arg Ala Ile Lys Gln Arg Leu Leu Asp
 20 25 30
 Val Gln Leu Thr Asn Leu Arg Asp Phe Gly Leu Gly Lys Trp Lys Gln
 35 40 45
 Val Asp Asp Thr Pro Phe Ser Gly Gly Gly Met Leu Leu Met Ala Glu
 50 55 60
 Pro Val Thr Ser Ala Ile Arg Ser Val Arg Lys Glu Asn Ser Lys Val
 65 70 75 80
 Ile Tyr Leu Ser Pro Gln Gly Ala Leu Leu Thr Ala Glu Lys Ser Arg
 85 90 95
 Glu Leu Ala Ala Ala Ser His Leu Ile Leu Leu Cys Gly His Tyr Glu
 100 105 110
 Gly Ile Asp Glu Arg Ala Ile Glu Ser Glu Val Asp Glu Glu Ile Ser
 115 120 125
 Ile Gly Asp Tyr Val Leu Thr Asn Gly Gly Ile Ala Ala Leu Val Leu
 130 135 140
 Ile Asp Ala Val Ser Arg Phe Ile Pro Gly Val Leu Gly Asn Gln Glu
 145 150 155 160
 Ser Ala Glu Arg Asp Ser Leu Glu Asn Gly Leu Leu Glu Gly Pro Gln
 165 170 175
 Tyr Thr Arg Pro Arg Glu Phe Glu Gly Lys Glu Val Pro Glu Val Leu
 180 185 190
 Leu Gln Gly Asp His Lys Ala Ile Ser Ser Val Glu Ile Gly Ala Lys
 195 200 205

<210>135

<211>189

<212>PRT

<213>Chlamydia pneumoniae

<400>135

Lys Asp Leu Ser Ile His Ala Leu Glu Ser Leu Lys Gly Lys Lys Phe

1 5 10 15
 Gln Lys Tyr Cys Cys Lys Gly Ile Thr Lys Pro Phe His Gln Trp Arg
 20 25 30
 Leu Glu Gln Ser Glu Arg Arg Thr Tyr Glu Arg Arg Pro Asp Leu Tyr
 35 40 45
 Leu Asn Tyr Leu Tyr Lys Arg Ser Ile Asp His Lys Phe Asp Glu Glu
 50 55 60
 Thr Thr Thr Asn Arg Asp His Phe Lys Cys Asp Lys Ile Ser Val Val
 65 70 75 80
 Leu Glu Val Asn Lys Leu Lys Arg Ala Lys Asn Phe Tyr Cys Lys Val
 85 90 95
 Phe Gly Leu Asp Ala Met Ser Cys Glu Asn Lys Phe Cys Leu Pro His
 100 105 110
 Glu Gly Lys Thr Ile Phe Trp Leu Arg Glu Val Gln Ala Glu Lys Lys
 115 120 125
 Asn Ile Val Thr Leu Ser Leu Ser Leu Asp Cys Ala Cys Glu Glu Asp
 130 135 140
 Phe Cys Tyr Leu Leu Arg Arg Trp Glu Leu Phe Gly Gly Lys Leu Leu
 145 150 155 160
 Glu Lys Gln Ala Asp Glu His Ala Val Trp Ala Leu Ala Gln Asp Leu
 165 170 175
 Asp Gly His Ala Trp Ile Phe Ser Trp His Arg Met Lys
 180 185

<210>136

<211>121

<212>PRT

<213>Chlamydia pneumoniae

<400>136

Met Val Asn Leu Leu Lys Glu Leu Glu Gln Glu Gln Cys Arg Asn Asp
 1 5 10 15
 Leu Pro Glu Phe His Val Gly Asp Thr Ile Arg Leu Ala Thr Lys Ile
 20 25 30
 Ser Glu Gly Gly Lys Glu Arg Val Gln Val Phe Gln Gly Thr Val Met
 35 40 45
 Ala Arg Arg Gly Gly Gly Ser Gly Glu Thr Val Ser Leu His Arg Val
 50 55 60
 Ala Tyr Gly Glu Gly Met Glu Lys Ser Phe Leu Leu Asn Ser Pro Arg
 65 70 75 80
 Ile Val Ser Ile Glu Ile Val Lys Arg Gly Lys Val Ala Arg Ala Arg
 85 90 95
 Leu Tyr Tyr Leu Arg Gly Lys Thr Gly Lys Ala Ala Lys Val Lys Glu
 100 105 110
 Phe Val Gly Pro Arg Ser Ser Lys Lys
 115 120

<210>137

<211>214

<212>PRT

<213>Chlamydia pneumoniae

<400>137

Met Asn Thr Ser Ile Ser Glu Ile Gln Arg Phe Leu Ser Met Ile Ala
 1 5 10 15
 Phe Glu Lys Glu Leu Val Ser Glu Asp Phe Ser Val Val Ala Gly Ile
 20 25 30
 Asp Glu Ala Gly Arg Gly Pro Leu Ala Gly Pro Val Val Ala Ser Ala
 35 40 45
 Cys Ile Leu Pro Lys Gly Lys Val Phe Pro Gly Val Asn Asp Ser Lys
 50 55 60
 Lys Leu Ser Pro Lys Gln Arg Ala Gln Val Arg Asp Ala Leu Met Gln
 65 70 75 80
 Asp Pro Glu Val Cys Phe Gly Ile Gly Val Ile Ser Val Glu Arg Ile
 85 90 95
 Asp Gln Val Asn Ile Leu Glu Ala Thr Lys Glu Ala Met Leu Gln Ala
 100 105 110
 Ile Ser Ser Leu Pro Ile Ser Pro Asp Ile Leu Leu Val Asp Gly Leu

115 120 125
 Tyr Leu Pro His Asp Ile Pro Cys Lys Lys Ile Ile Gln Gly Asp Ala
 130 135 140
 Lys Ser Ala Ser Ile Ala Ala Ser Ile Leu Ala Lys Glu His Arg
 145 150 155 160
 Asp Asp Leu Met Leu Gln Leu His Arg Leu Tyr Pro Glu Tyr Gly Phe
 165 170 175
 Asp Arg His Lys Gly Tyr Gly Thr Ser Leu His Val Glu Ala Ile Arg
 180 185 190
 Arg Tyr Gly Pro Ser Pro Cys His Arg Lys Ser Phe Ser Pro Ile Lys
 195 200 205
 Gln Met Cys Ala Ile Val

210

<210>138

<211>209

<212>PRT

<213>Chlamydia pneumoniae

<400>138

Val Cys Tyr Cys Met Asn Lys Ile Leu Val Asp Ser Pro Phe Ser Pro
 1 5 10 15
 Asp His Gln Lys Cys Cys Pro Lys Leu Phe Thr Ile Ser Ala Pro Ala
 20 25 30
 Gly Val Gly Lys Thr Thr Leu Val Arg Met Leu Glu Gln Glu Phe Ser
 35 40 45
 Ser Ala Phe Ala Glu Thr Ile Ser Val Thr Thr Arg Lys Pro Arg Glu
 50 55 60
 Gly Glu Val Pro Gly Lys Asp Tyr His Phe Val Ser His Glu Glu Phe
 65 70 75 80
 Gln Arg Leu Leu Asp Arg Gln Ala Leu Leu Glu Trp Val Phe Leu Phe
 85 90 95
 Gly Glu Cys Tyr Gly Thr Ser Met Leu Glu Ile Glu Arg Ile Trp Ser
 100 105 110
 Leu Gly Lys His Ala Val Ala Val Ile Asp Ile Gln Gly Ala Leu Phe
 115 120 125
 Ile Arg Ser Arg Met Pro Ser Val Ser Ile Phe Ile Ala Pro Pro Ser
 130 135 140
 Gln Glu Glu Leu Glu Arg Arg Leu Ala Ser Arg Gly Ser Glu Glu Gly
 145 150 155 160
 Ser Gln Arg Lys Glu Arg Leu Glu His Ser Leu Ile Glu Leu Ala Ala
 165 170 175
 Ala Asn Gln Phe Asp Tyr Val Ile Ile Asn Asp Asp Leu Asn Gln Ala
 180 185 190
 Tyr Arg Val Leu Lys Ser Ile Phe Ile Ala Glu Glu His Arg Asn Ile
 195 200 205
 Leu

<210>139

<211>100

<212>PRT

<213>Chlamydia pneumoniae

<400>139

Glu His Ile Met Ile Lys Lys Asp Arg Phe Thr Asn Glu Lys Leu Asn
 1 5 10 15
 Lys Leu Phe Asp Ser Pro Phe Ser Leu Val Asn Tyr Ala Ile Lys Gln
 20 25 30
 Ala Lys Ile Lys Ile Ala Lys Gly Asp Val Arg Ser Ser Asn Val Ala
 35 40 45
 Ile Glu Thr Leu Val Leu Leu Asp Arg Glu Gly Ile Gln Pro Glu Phe
 50 55 60
 Thr Glu Glu Ile Val Val Thr Ala Ser Pro Thr Val Glu Arg Lys Arg
 65 70 75 80
 Ser Glu His Thr Asn Ser Arg Lys Lys Asp Pro Ser Ala Tyr Thr Trp
 85 90 95
 S r Asp Val Lys

<210>140

<211>554

<212>PRT

<213>Chlamydia pneumoniae

<400>140

Cys Lys Val Met Pro Gln Lys Val Leu Ile Thr Ser Ala Leu Pro Tyr
 1 5 10 15
 Ala Asn Gly Pro Leu His Phe Gly His Ile Ala Gly Val Tyr Leu Pro
 20 25 30
 Ala Asp Val Tyr Ala Arg Phe Arg Arg Leu Leu Gly Asp Val Leu
 35 40 45
 Tyr Ile Cys Gly Ser Asp Glu Phe Gly Ile Ala Ile Thr Leu Asn Ala
 50 55 60
 Asp Arg Glu Gly Leu Gly Tyr Gln Glu Tyr Val Asp Met Tyr His Lys
 65 70 75 80
 Leu His Lys Asp Thr Phe Glu Lys Leu Gly Phe Ala Leu Asp Phe Phe
 85 90 95
 Ser Arg Thr Thr Asn Pro Phe His Ala Glu Leu Val Gln Asp Phe Tyr
 100 105 110
 Ser Gln Leu Lys Ala Ser Gly Leu Ile Glu Asn Arg Ile Ser Glu Gln
 115 120 125
 Leu Tyr Ser Glu Gln Glu Gln Arg Phe Leu Ala Asp Arg Tyr Val Glu
 130 135 140
 Gly Thr Cys Pro Arg Cys Gly Phe Asp His Ala Arg Gly Asp Glu Cys
 145 150 155 160
 Gln Ser Cys Gly Ala Asp Tyr Glu Ala Ile Asp Leu Ile Asp Pro Lys
 165 170 175
 Ser Lys Ile Ser Gly Val Glu Leu Val Lys Lys Glu Thr Glu His Ser
 180 185 190
 Tyr Phe Leu Leu Asp Arg Met Lys Asp Ala Leu Leu Ser Phe Ile Gln
 195 200 205
 Gly Cys Tyr Leu Pro Asp His Val Arg Lys Phe Val Val Asp Tyr Ile
 210 215 220
 Glu His Val Arg Ser Arg Ala Ile Thr Arg Asp Leu Ser Trp Gly Ile
 225 230 235 240
 Pro Val Pro Asp Phe Pro Gly Lys Val Phe Tyr Val Trp Phe Asp Ala
 245 250 255
 Pro Ile Gly Tyr Ile Ser Gly Thr Met Glu Trp Ala Ala Ser Gln Gly
 260 265 270
 Asn Pro Asp Glu Trp Lys Arg Phe Trp Leu Glu Asp Gly Val Glu Tyr
 275 280 285
 Val Gln Phe Ile Gly Lys Asp Asn Leu Pro Phe His Ser Val Val Phe
 290 295 300
 Pro Ala Met Glu Leu Gly Gln Lys Leu Asp Tyr Lys Lys Val Asp Ala
 305 310 315 320
 Leu Val Val Ser Glu Phe Tyr Leu Leu Glu Gly Arg Gln Phe Ser Lys
 325 330 335
 Ser Glu Gly Asn Tyr Val Asp Met Asp Lys Phe Leu Ser Ser Tyr Ser
 340 345 350
 Leu Asp Lys Leu Arg Tyr Val Leu Ala Ala Thr Ala Pro Glu Thr Ser
 355 360 365
 Asp Ser Glu Phe Thr Phe Leu Asp Phe Lys Thr Arg Cys Asn Ser Glu
 370 375 380
 Leu Val Gly Lys Phe Gly Asn Phe Ile Asn Arg Val Leu Ala Phe Ala
 385 390 395 400
 Glu Lys Asn His Tyr Asp Lys Leu Ser Tyr His Ser Val Val Leu Glu
 405 410 415
 Asp Ser Asp Arg Ala Phe Leu Glu Glu Val Arg Gln Leu Val Arg Asp
 420 425 430
 Ala Glu Lys Cys Tyr Arg Glu Tyr Ser Leu Arg Lys Ala Thr Ser Val
 435 440 445
 Ile Met Ser Leu Ala Ala Leu Gly Asn Val Tyr Phe Asn Gln Gln Ala
 450 455 460

Pro Trp Lys Leu Leu Lys Glu Gly Thr Arg Glu Arg Val Glu Ala Ile
 465 470 475 480
 Leu Phe Cys Ala Cys Tyr Cys Gln Lys Leu Ala Leu Ile Ser Tyr
 485 490 495
 Pro Ile Ile Pro Glu Ser Ala Val Ala Ile Trp Glu Met Ile Ser Pro
 500 505 510
 Lys Ser Leu Glu Asn Cys Asn Leu Asp Thr Met Tyr Ala Arg Asp Leu
 515 520 525
 Trp Lys Glu Glu Ile Leu Asp Val Ile Asn Glu Glu Phe His Leu Lys
 530 535 540
 Ser Pro Arg Leu Leu Phe Thr Thr Val Glu
 545 550
 <210>141
 <211>408
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>141
 Ser Gln Ala His Phe Ile Phe Phe Glu Glu Asn Pro Phe Tyr Arg Arg
 1 5 10 15
 Arg Lys Ser Asn Cys Leu Gly Arg Gly Lys Leu Ser Ile Asp Leu Ala
 20 25 30
 Glu Gln Gln Arg Glu Ala Ile Lys Ala Cys Phe Ser Glu Lys Leu Leu
 35 40 45
 Ile Ile Thr Gly Gly Pro Gly Thr Gly Lys Ser Thr Ile Thr Gln Ala
 50 55 60
 Ile Leu Lys Ile Phe Glu Gln Val Thr His Lys Ile Ile Leu Ala Ala
 65 70 75 80
 Pro Thr Gly Lys Ala Ala Lys Arg Met Thr Glu Ile Thr Gln Lys His
 85 90 95
 Ser Val Thr Ile His Ala Leu Leu Gln Tyr Asp Phe Lys Thr Lys Ser
 100 105 110
 Phe Arg Lys Asn His Asp Asn Pro Ile Asp Cys Asp Leu Ile Ile Val
 115 120 125
 Asp Glu Ser Gly Met Met Asp Thr His Leu Leu His His Phe Leu Lys
 130 135 140
 Ala Leu Pro Asp Tyr Thr Thr Leu Val Phe Ile Gly Asp Ile His Gln
 145 150 155 160
 Leu Pro Ser Val Gly Pro Gly Asn Ile Leu Lys Asp Leu Ile Thr Ser
 165 170 175
 Asn Lys Met Thr Val Ile Arg Leu Asn Lys Ile Phe Arg Gln Val His
 180 185 190
 Asp Ser Gly Ile Val Thr Asn Ala His Arg Val Asn Glu Gly Glu Leu
 195 200 205
 Pro Ile Leu Tyr Ser Glu Thr Gly Arg Arg Asp Phe Leu Phe Phe Gln
 210 215 220
 Lys Asp Asp Gln Glu Glu Ala Leu Asn His Ile Ile His Leu Val Thr
 225 230 235 240
 Lys Phe Val Pro Gln Lys Tyr His Ile Tyr Pro Gln Asp Ile Gln Val
 245 250 255
 Leu Ala Pro Met Lys Lys Gly Thr Leu Gly Ile Tyr Asn Leu Asn Lys
 260 265 270
 Ala Leu Lys His Ala Leu Asn Pro Lys Lys Ala Asn Leu His Gly Arg
 275 280 285
 Phe Gln Ser Tyr Ala Val Gly Asp Lys Val Met Gln Ile Arg Asn Asn
 290 295 300
 Tyr Asn Lys Glu Val Phe Asn Gly Asp Ile Gly Tyr Val Ser Thr Il
 305 310 315 320
 Asn Phe Glu Asp Lys Ala Val Val Val Arg Met Glu Gly Lys His Val
 325 330 335
 Gly Tyr Ser Phe Ser Glu Leu Asp Asp Leu Val Leu Ala Tyr Ala Thr
 340 345 350
 Ser Val His Lys Tyr Gln Gly Ser Glu Ser Pro Cys Ile Ile Ile Pro
 355 360 365
 Ile His Thr Ser His Phe Met Met Leu Tyr Arg Asn Leu Leu Tyr Thr

370 375 380
 Ala Ile Thr Arg Gly Lys Lys Leu Val Ile Leu Val Gly Thr Lys Lys
 385 390 395 400
 Ala Ile Cys Tyr Cys Asn Lys Lys
 405
 <210>142
 <211>313
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>142
 Asn Ser Met Glu Lys Ile Cys Gly Tyr Leu Glu Gln Ile Leu Val Glu
 1 5 10 15
 Asn Lys Asp Ser Gly Asp Ile Thr Ala Tyr Ile Lys Ile Pro Asn Lys
 20 25 30
 Thr Thr Pro Ile Leu Ile Lys Gly Lys Leu Pro Gln Pro Leu Glu Leu
 35 40 45
 Gly Ser Pro Ile Gln Ile Tyr Gly Val Trp Ser His Ser Pro Ser Asn
 50 55 60
 Thr Lys Tyr Phe Gln Ile His Ser Tyr Asp Ser Pro Leu Leu Tyr Glu
 65 70 75 80
 Tyr Arg Gly Val Phe His Tyr Leu Thr Ser Lys Leu Ile Lys Gly Ile
 85 90 95
 Gly Pro Lys Ile Ala Glu Lys Ile Ile Glu Lys Phe Gln Glu Lys Thr
 100 105 110
 Cys Tyr Val Leu Asp Ile Thr Pro Glu Arg Leu Ser Glu Val Ser Gly
 115 120 125
 Ile Ser Glu Thr Arg Cys Val Ser Ile Cys Lys Gln Leu Cys Glu Gln
 130 135 140
 Lys Met Leu Arg Lys Thr Leu Leu Phe Leu Gln Glu Tyr Asn Ile Pro
 145 150 155 160
 Ile His Tyr Gly Val Arg Ile Phe Lys Lys Tyr Gln Glu Lys Ser Ile
 165 170 175
 Glu Lys Ile Cys Glu Asp Pro Phe Leu Leu Ala Arg Glu Met Glu Gly
 180 185 190
 Ile Gly Phe Lys Thr Ala Asp Phe Ile Ala Met Lys Leu Gly Val Pro
 195 200 205
 Arg Asn Ser Glu Ser Arg Leu Cys Ala Gly Ile Gln His Ser Leu Glu
 210 215 220
 Glu Leu Gln Gln Glu Gly His Thr Cys Tyr Pro Ile Glu Leu Leu Ile
 225 230 235 240
 Asp Val Val Ala Lys Leu Leu Asn Gln Asp Val Phe Asp Thr Pro Ile
 245 250 255
 Thr Leu Glu Glu Ile Asp Thr Gln Ile Leu Asn Met Gln Lys Arg Asn
 260 265 270
 Phe Tyr Ile Phe Lys Thr Phe Leu Gly His Ser Met Ser Gly His Val
 275 280 285
 Ile Ser Ile Ser Gln Arg Lys Leu Leu Phe Leu Ile Ser Ser Ala Phe
 290 295 300
 Tyr Phe Leu Arg Gly Glu Ser Val Leu
 305 310
 <210>143
 <211>498
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>143
 Ile Arg Ser Lys Gln Arg Thr Val Ala Ile Thr Leu Leu Val Leu Gly
 1 5 10 15
 Ile Leu Leu Ile Ala Ser Gly Ile Ile Phe Leu Ala Val Ala Ile Pro
 20 25 30
 Gly Leu Ser Ser Ala Val Ala Leu Gly Leu Gly Cys Gly Met Thr Ala
 35 40 45
 Leu Gly Thr Val Leu Leu Ile Thr Gly Leu Val Leu Leu Ile Arg Ser
 50 55 60
 Glu Lys Leu Ala Leu Glu Gln Val Glu Ile Lys Gln Ala Arg Thr Arg

65					70					75				80	
Val	Asn	Asn	Glu	Leu	Asp	Gln	Leu	Ser	Gln	Tyr	Val	Phe	Tyr	Thr	Glu
				85					90					95	
Asn	Val	Leu	Asp	Asn	Leu	Lys	Arg	Trp	Ser	Tyr	Arg	Asp	Leu	Gly	Phe
			100					105					110		
Val	Arg	Gln	Ala	Gln	Glu	Glu	Val	Thr	Asn	Leu	Glu	Gln	Asp	Ile	Glu
		115					120					125			
Glu	Ile	Phe	Leu	Thr	Leu	Arg	Asp	Ile	Arg	Asn	Ala	Leu	Asp	Asn	Glu
	130					135					140				
Glu	Phe	Phe	Met	Thr	His	Ala	Lys	Gln	Cys	Leu	Ala	Gln	Val	Gly	Glu
145					150				155					160	
Ser	Leu	Phe	Gln	Asp	Ala	Ser	Ile	Asp	Glu	Phe	Ile	Asn	Leu	Ala	His
			165					170						175	
Leu	Ser	Glu	Ile	Arg	Gln	His	Leu	Asp	Ile	Asn	Asp	Pro	Arg	Trp	Ser
		180						185					190		
Met	Ile	Thr	Lys	Lys	Val	Lys	Gly	Thr	Val	Val	Arg	Phe	Ile	Tyr	Val
	195						200					205			
Ser	Thr	Met	Tyr	Lys	Gln	Ile	Lys	Ser	Asn	Phe	Glu	Lys	Ser	Asp	Phe
	210				215						220				
Gly	Gln	Leu	Arg	Lys	Met	Leu	Leu	Asn	Asn	Tyr	Lys	Thr	Ile	Glu	Glu
225				230						235				240	
Val	Leu	Tyr	Gln	Ser	Phe	Gln	Arg	Gly	Tyr	Asn	Arg	Ala	Ala	Leu	Leu
			245					250						255	
Ser	Glu	Lys	Thr	Arg	Ile	Ile	His	Thr	Ser	Ser	Leu	Leu	His	Trp	Glu
	260						265						270		
Lys	Asp	Glu	Asp	Lys	His	Leu	Asn	Ile	Lys	Asn	Glu	Cys	Ala	Ser	Arg
	275					280					285				
Leu	Glu	Asn	Phe	Lys	Lys	Phe	Arg	Thr	Leu	Phe	Leu	Gly	Leu	Ser	Glu
	290					295					300				
Glu	Asp	Val	Ile	Asp	Phe	Thr	Gly	Ala	Ser	Gly	Trp	Asp	Cys	Ser	Lys
305				310						315				320	
Leu	Pro	Arg	Lys	Glu	Val	Pro	Leu	Asp	Gly	Gly	Lys	Lys	Lys	Leu	Arg
			325					330						335	
Phe	Lys	Arg	Thr	Phe	Ala	Asp	Glu	Gln	Val	Gly	Asp	Trp	Asp	Arg	Thr
	340						345					350			
Thr	Ser	Leu	Glu	His	Met	Thr	Pro	Gln	Glu	Glu	Asp	Pro	Leu	Asp	Arg
	355					360						365			
Leu	Met	Asp	Gln	Val	Glu	Gln	Glu	Ala	Thr	Ser	Val	Leu	Lys	Asp	Gln
	370				375						380				
Asp	Arg	Tyr	Trp	Lys	Glu	Ile	Glu	Thr	Ser	Glu	Ala	Lys	Phe	Arg	Ser
385				390					395					400	
Leu	Pro	Arg	Glu	Asp	Asp	Phe	Glu	Lys	Gln	Ser	Gln	Ile	Asp	Ser	Tyr
		405					410						415		
Ile	Arg	Asp	Leu	Asp	Asp	His	Leu	Ser	Val	Trp	Ala	Asn	Gln	Leu	Ser
	420						425						430		
Ala	Ala	Glu	Asp	Ala	Leu	Ile	Glu	Val	Thr	Asp	Val	Gln	Glu	His	Gly
	435					440					445				
Asn	Arg	Glu	Met	Leu	Lys	Asn	Ile	Gln	Gln	Gly	Leu	Glu	Leu	Ile	Glu
	450				455					460					
Asp	Ala	Val	Lys	Ala	Thr	Leu	Pro	Arg	Val	Asp	Phe	Ile	Gln	Glu	Leu
465				470					475					480	
Leu	Glu	Lys	Glu	Glu	Leu	Pro	Leu	Val	Ala	Ala	Arg	Met	Ser	Leu	Glu
			485				490						495		

Asn Ser

<210>144

<211>538

<212>PRT

<213>Chlamydia pneumoniae

<400>144

Pro Phe Phe Ser Lys Pro Pro Glu Glu Ile Ser Gln Leu Glu Ser Tyr

1

5

10

15

Ile Arg Ser Ala Ala Asn Asp Leu Asn Thr Ile Lys Thr Trp Pro His

20

25

30

Lys Asp Gln Arg Leu Val Glu Thr Val Ser Arg Lys Leu Glu Arg Leu
 35 40 45
 Ala Ala Ala Gln Asn Tyr Met Ile Ser Glu Leu Cys Glu Ile Ser Glu
 50 55 60
 Ile Leu Glu Glu Glu Glu His His Leu Ile Leu Ala Gln Glu Ser Leu
 65 70 75 80
 Glu Trp Ile Gly Lys Ser Leu Phe Ser Thr Phe Leu Asp Met Glu Ser
 85 90 95
 Phe Leu Asn Leu Ser His Leu Ser Glu Val Arg Pro Tyr Leu Ala Val
 100 105 110
 Asn Asp Pro Arg Leu Leu Glu Ile Thr Glu Glu Ser Trp Glu Val Val
 115 120 125
 Ser His Phe Ile Asn Val Thr Ser Ala Phe Lys Lys Ala Gln Ile Leu
 130 135 140
 Phe Lys Asn Asn Glu His Ser Arg Met Lys Lys Lys Leu Glu Ser Val
 145 150 155 160
 Gln Glu Leu Leu Glu Thr Phe Ile Tyr Lys Ser Leu Lys Arg Ser Tyr
 165 170 175
 Arg Glu Leu Gly Cys Leu Ser Glu Lys Met Arg Ile Ile His Asp Asn
 180 185 190
 Pro Leu Phe Pro Trp Val Gln Asp Gln Gln Lys Tyr Ala His Ala Lys
 195 200 205
 Asn Glu Phe Gly Glu Ile Ala Arg Cys Leu Glu Glu Phe Glu Lys Thr
 210 215 220
 Phe Phe Trp Leu Asp Glu Glu Cys Ala Ile Ser Tyr Met Asp Cys Trp
 225 230 235 240
 Asp Phe Leu Asn Glu Ser Ile Gln Asn Lys Lys Ser Arg Val Asp Arg
 245 250 255
 Asp Tyr Ile Ser Thr Lys Lys Ile Ala Leu Lys Asp Arg Ala Arg Thr
 260 265 270
 Tyr Ala Lys Val Leu Leu Glu Glu Asn Pro Thr Thr Glu Gly Lys Ile
 275 280 285
 Asp Leu Gln Asp Ala Gln Arg Ala Phe Glu Arg Gln Ser Gln Glu Phe
 290 295 300
 Tyr Thr Leu Glu His Thr Glu Thr Lys Val Arg Leu Glu Ala Leu Gln
 305 310 315 320
 Gln Cys Phe Ser Asp Leu Arg Glu Ala Thr Asn Val Arg Gln Val Arg
 325 330 335
 Phe Thr Asn Ser Glu Asn Ala Asn Asp Leu Lys Glu Ser Phe Glu Lys
 340 345 350
 Ile Asp Lys Glu Arg Val Arg Tyr Gln Lys Glu Gln Arg Leu Tyr Trp
 355 360 365
 Glu Thr Ile Asp Arg Asn Glu Gln Glu Leu Arg Glu Glu Ile Gly Glu
 370 375 380
 Ser Leu Arg Leu Gln Asn Arg Arg Lys Gly Tyr Arg Ala Gly Tyr Asp
 385 390 395 400
 Ala Gly Arg Leu Lys Gly Leu Leu Arg Gln Trp Lys Lys Asn Leu Arg
 405 410 415
 Asp Val Glu Ala His Leu Glu Asp Ala Thr Met Asp Phe Glu His Glu
 420 425 430
 Val Ser Lys Ser Glu Leu Cys Ser Val Arg Ala Arg Leu Glu Val Leu
 435 440 445
 Glu Glu Glu Leu Met Asp Met Ser Pro Lys Val Ala Asp Ile Glu Glu
 450 455 460
 Leu Leu Ser Tyr Glu Glu Arg Cys Ile Leu Pro Ile Arg Glu Asn Leu
 465 470 475 480
 Glu Arg Ala Tyr Leu Gln Tyr Asn Lys Cys Ser Glu Ile Leu Ser Lys
 485 490 495
 Ala Lys Phe Leu Leu Ser Gly Arg Arg Ala Ile Ala Ser Phe Gly Ser
 500 505 510
 Glu Ser Lys Arg Gly Gly Cys Pro Val Lys Thr Ser Thr Gly Lys Met
 515 520 525
 Ser Arg Glu Gly Pro Lys Val Arg Asn Ile
 530 535

<210>145

<211>201

<212>PRT

<213>Chlamydia pneumoniae

<400>145

Lys Gly His Thr Ser Asn Ile Ile Ser Val Leu Lys Phe Tyr Pro Arg
 1 5 10 15
 Gln Ser Phe Phe Phe Pro Glu Asp Glu Gln Leu Leu Val Ser Glu Ala
 20 25 30
 Asn Leu Arg Glu Val Gly Ala Gln Leu Lys Gln Val Gln Gly Lys Cys
 35 40 45
 Gln Glu Arg Ala Gln Lys Phe Ala Ile Phe Glu Lys His Ile Gln Glu
 50 55 60
 Gln Lys Ser Leu Ile Lys Glu Gln Val Arg Ser Phe Asp Leu Ala Gly
 65 70 75 80
 Val Gly Phe Leu Lys Ser Glu Leu Leu Ser Ile Ala Cys Asn Leu Tyr
 85 90 95
 Ile Lys Ala Val Val Lys Glu Ser Ile Pro Val Asp Val Pro Cys Met
 100 105 110
 Gln Leu Tyr Tyr Ser Tyr Tyr Glu Asp Asn Glu Ala Val Val Arg Asn
 115 120 125
 Arg Leu Leu Asn Met Thr Glu Arg Tyr Gln Asn Phe Lys Arg Ser Leu
 130 135 140
 Asn Ser Ile Gln Phe Asn Gly Asp Val Leu Leu Arg Asp Pro Val Tyr
 145 150 155 160
 Gln Pro Glu Gly His Glu Thr Arg Leu Lys Glu Arg Glu Leu Gln Glu
 165 170 175
 Thr Thr Leu Ser Cys Lys Lys Leu Lys Val Ala Gln Asp Arg Leu Ser
 180 185 190
 Glu Leu Glu Ser Arg Leu Ser Arg Arg
 195 200

<210>146

<211>259

<212>PRT

<213>Chlamydia pneumoniae

<400>146

Met Leu Arg Asn Gln Val Leu Val Tyr Cys Ser Glu Gly Val Ser Pro
 1 5 10 15
 Tyr Tyr Leu Arg His Thr Ile Arg Phe Leu Lys Tyr Tyr Ser Thr Gln
 20 25 30
 Glu Gly Ala Phe Asp Ile Leu Arg Val Xaa Gly Asn Phe Leu Ile Lys
 35 40 45
 Asn Pro Phe Trp Glu Glu Thr Thr Arg Leu Leu Val Phe Pro Gly Gly
 50 55 60
 Ala Asp Arg Pro Tyr His Arg Val Leu His Gly Leu Gly Thr Ala Arg
 65 70 75 80
 Ile Phe Gln Tyr Val Ser Glu Gly Gly Asn Phe Leu Gly Ile Cys Ala
 85 90 95
 Gly Ala Tyr Phe Gly Ser Lys Met Ile Tyr Phe Tyr Glu Pro Glu Gly
 100 105 110
 Ala Pro Leu Gln Gly Ala Arg Asp Leu Gly Phe Phe Pro Gly Thr Ala
 115 120 125
 Lys Gly Pro Ala Tyr Arg Gly Asn Phe Ser Tyr Val Ser Pro Ser Gly
 130 135 140
 Val Arg Val Ser Pro Gln Leu Phe Ser Asp Phe Gly Leu Gly Tyr Ala
 145 150 155 160
 Met Phe Asn Gly Gly Cys Phe Phe Glu Gly Ser Glu Gly Tyr Pro Gly
 165 170 175
 Val Asn Ile Glu Ser Arg Tyr Asp Asp Leu Pro Gly Lys Pro Ala Ser
 180 185 190
 Ile Val Ser Arg Ile Val Ser Lys Gly Leu Ala Val Leu Ser Gly Pro
 195 200 205
 His Ile Glu Tyr Leu Pro His Tyr Cys Arg Met Val Lys Glu Asn Val
 210 215 220

Gln Lys Thr Arg Glu Phe Leu Gln Arg Glu Arg Thr Thr Leu Asp Arg
 225 330 235 240
 Tyr Cys Gln Asn Leu Val Gln Arg Leu Arg Gln Pro Ala Phe Ser Lys
 245 250 255

Ala Asp Cys

<210>147

<211>196

<212>PRT

<213>Chlamydia pneumoniae

<400>147

Ser Ser Met Val Lys Cys Ser Ser Ile Ile His Glu Asn Lys Lys Pro
 1 5 10 15
 Ala Gln Leu Leu Pro Glu Ser Lys Phe Ala Ala Ile Thr Lys Leu Ser
 20 25 30
 Leu Ala Ile Leu Ser Leu Phe Leu Gly Ile Ala Ala Cys Ile Leu Ile
 35 40 45
 Ala Leu Ser Gly Leu Leu Pro Asn Thr Leu Leu Ile Ile Ala Leu Ser
 50 55 60
 Leu Ile Ser Ile Ile Val Leu Ser Thr Gly Ile Ser Leu Leu Ile Gly
 65 70 75 80
 Thr Gln Cys Ser Lys Ser Val Gln Lys Asp Glu Gln Lys Pro Lys Ser
 85 90 95
 Ile Phe Pro Lys Glu Thr Pro Ser Leu Asp Pro Trp Leu Leu Asn Pro
 100 105 110
 Leu Lys Asn Lys Ile Gln Ser Ser Glu Thr Leu Leu Leu Asp Pro Thr
 115 120 125
 Ser Ile Asn Leu Lys Asn Glu Leu Phe Phe Pro Ser Phe Glu Glu Trp
 130 135 140
 Lys Lys Ile Phe Leu Lys Asp Pro Asp Phe Leu Ile Lys Ser Ala Leu
 145 150 155 160
 Ala Asn Trp Lys Ile Leu Glu Gln Asp Glu Gln Tyr Ile Leu Ser His
 165 170 175
 Ile His Met Asp Pro Arg Ile Phe Val Thr Ser Glu Pro Leu Gln Lys
 180 185 190
 Thr Tyr Gln Lys Leu Gln Glu Lys His Val Asn Asn Leu Gly Ile Ala
 195 200 205
 Ser Gln Val Ser Leu Thr Asp Leu Gln Asn Lys Thr Gln Tyr Glu Asn
 210 215 220
 Asn Leu Ile Glu Thr Thr Thr Asn Glu Ile Thr Tyr Tyr Phe Pro Val
 225 230 235 240
 Val His Asn Pro Asp Ile Leu Arg Ser Glu Trp Asp Pro Ile Ser Asn
 245 250 255
 Gln Leu Tyr Leu Ile Phe Lys Lys Phe Phe Ile His Tyr His Asn Leu
 260 265 270
 Phe Ser Thr Ala Leu Glu Arg Asn Gln Ile Leu Leu Ile Asp Ser Leu
 275 280 285
 Asn Thr Gly Ser Ser Asn Pro Ile Ala Arg Gln Met Glu Leu Leu Ala
 290 295 300
 Phe Leu Cys Val Phe Glu Gln Leu Asp Tyr Asn Glu Asp Glu Tyr Thr
 305 310 315 320
 Ile Glu Pro Arg Asp Tyr Phe Asn Arg Phe Val Tyr Xaa Xaa Ser Xaa
 325 330 335
 Thr Ala Pro Gln Ile Gln Ser Phe Gly Leu Leu His Gly Tyr Glu Glu
 340 345 350
 Met Ser Tyr Ala Ser Asn Asn Ile Arg Asn Val Leu Thr His Ser Ile
 355 360 365
 Val Leu Cys Ser Pro Ile Leu Tyr Gln Leu Ile Thr Glu Phe Asp Thr
 370 375 380
 Thr Lys Ile His Ala Asp Asp Phe Asp Cys L u Ile
 385 390 395

<210>148

<211>266

<212>PRT

<213>Chlamydia pneumoniae

<400>148

Phe Ser Ser Leu Lys Lys Glu Arg Phe Ser Leu Ser Leu Ala Ile Phe
 1 5 10 15
 Leu Ile Phe Phe Phe Thr Ser Ala Tyr Val Phe Pro Ser Ile Cys Phe
 20 25 30
 Leu Glu Leu Phe Met Glu Asn Ala Met Ser Ser Ser Phe Val Tyr Asn
 35 40 45
 Gly Pro Ser Trp Ile Leu Lys Thr Ser Val Ala Gln Glu Val Phe Lys
 50 55 60
 Lys His Gly Lys Lys Gly Ile Gln Val Leu Leu Ser Thr Ser Val Met Leu
 65 70 75 80
 Phe Ile Gly Leu Gly Val Cys Ala Phe Ile Xaa Pro Gln Xaa Leu Ile
 85 90 95
 Val Phe Val Leu Thr Ile Asp Leu Leu Met Leu Ala Ile Ser Leu Val
 100 105 110
 Leu Phe Leu Leu Lys Val Leu Tyr Ala Pro Ser Met Val Asp Arg Leu
 115 120 125
 Trp Cys Ser Glu Lys Gly Tyr Ala Leu His Gln His Glu Asn Gly Pro
 130 135 140
 Phe Leu Asp Val Lys Arg Val Gln Gln Ile Leu Leu Arg Ser Pro Tyr
 145 150 155 160
 Ile Lys Val Arg Ala Leu Trp Pro Ser Gly Asp Ile Pro Glu Asp Pro
 165 170 175
 Ser Gln Ala Ala Val Leu Leu Leu Ser Pro Trp Thr Phe Phe Ser Ser
 180 185 190
 Val Asp Val Glu Ala Leu Leu Pro Ser Pro Gln Glu Lys Glu Gly Lys
 195 200 205
 Tyr Ile Asp Pro Val Leu Pro Lys Leu Ser Arg Ile Glu Arg Val Ser
 210 215 220
 Leu Leu Val Phe Leu Ser Ala Phe Thr Leu Asp Asp Leu Asn Glu Gln
 225 230 235 240
 Gly Val Asn Pro Leu Met Asn Asn Glu Glu Phe Leu Phe Phe Ile Asn
 245 250 255
 Lys Lys Ala Arg Asp Met Gly Phe Arg Ile
 260 265

<210>149

<211>119

<212>PRT

<213>Chlamydia pneumoniae

<400>149

His Gly Ile Gln Asp Leu Lys His Glu Ile Met Ser Ser Leu Glu Lys
 1 5 10 15
 Thr Gly Val Pro Leu Asp Pro Ser Met Ser Phe Gln Val Ser Gln Ala
 20 25 30
 Met Phe Ser Val Tyr Arg Tyr Leu Arg Gln Arg Asp Leu Thr Thr Ser
 35 40 45
 Glu Leu Arg Cys Phe His Leu Leu Ser Cys Phe Lys Gly Asp Val Val
 50 55 60
 His Cys Leu Ala Ser Phe Glu Asn Pro Lys Asp Leu Ala Asp Ser Asp
 65 70 75 80
 Phe Leu Glu Ala Cys Lys Asn Val Glu Trp Gly Glu Phe Ile Ser Ala
 85 90 95
 Cys Glu Lys Ala Leu Leu Lys Asn Pro Gln Gly Ile Ser Ile Lys Asp
 100 105 110
 Leu Lys Gln Phe Leu Val Arg
 115

<210>150

<211>326

<212>PRT

<213>Chlamydia pneumoniae

<400>150

Ser Met Ile Glu Phe Ala Phe Val Pro His Thr Ser Val Thr Ala Asp
 1 5 10 15

WO 9927105
 Arg Ile Glu Asp Arg Met Ala Cys Arg Met Asn Lys Leu Ser Thr Leu
 20 25 30
 Ala Ile Thr Ser Leu Cys Val Leu Ile Ser Ser Val Cys Ile Met Ile
 35 40 45
 Gly Ile Leu Cys Ile Ser Gly Thr Val Gly Thr Tyr Ala Phe Val Val
 50 55 60
 Gly Ile Ile Phe Ser Val Leu Ala Leu Val Ala Cys Val Phe Phe Leu
 65 70 75 80
 Tyr Phe Phe Tyr Phe Ser Ser Glu Glu Phe Lys Cys Ala Ser Ser Gln
 85 90 95
 Glu Phe Arg Phe Leu Pro Ile Pro Ala Val Val Ser Ala Leu Arg Ser
 100 105 110
 Tyr Glu Tyr Ile Ser Gln Asp Ala Ile Asn Asp Val Ile Lys Asp Thr
 115 120 125
 Met Gln Leu Ser Thr Leu Ser Ser Leu Leu Asp Pro Glu Ala Phe Phe
 130 135 140
 Leu Glu Phe Pro Tyr Phe Asn Ser Leu Ile Val Asn His Ser Met Lys
 145 150 155 160
 Glu Ala Asp Arg Leu Ser Arg Glu Ala Phe Leu Ile Leu Leu Gly Glu
 165 170 175
 Ile Thr Trp Lys Asp Cys Glu Thr Lys Ile Leu Pro Trp Leu Lys Asp
 180 185 190
 Pro Asn Ile Thr Pro Asp Asp Phe Trp Lys Leu Leu Lys Asp His Phe
 195 200 205
 Asp Leu Lys Asp Phe Lys Lys Arg Ile Ala Thr Trp Ile Arg Lys Ala
 210 215 220
 Tyr Pro Glu Ile Arg Leu Pro Lys Lys His Cys Leu Asp Lys Ser Ile
 225 230 235 240
 Tyr Lys Gly Cys Cys Lys Phe Leu Leu Leu Ala Glu Asn Asp Val Gln
 245 250 255
 Tyr Gln Arg Leu Leu His Lys Val Cys Tyr Phe Ser Gly Glu Phe Pro
 260 265 270
 Ala Met Val Leu Gly Leu Gly Ser Glu Val Pro Met Val Leu Gly Leu
 275 280 285
 Pro Lys Val Pro Lys Asp Leu Thr Trp Glu Met Phe Met Glu Asn Met
 290 295 300
 Pro Val Leu Leu Gln Ser Lys Arg Glu Gly His Trp Lys Ile Ser Leu
 305 310 315 320
 Glu Asp Val Ala Ser Leu
 325

<210>151

<211>237

<212>PRT

<213>Chlamydia pneumoniae

<400>151

Met Phe Lys Leu Leu Lys Asn Leu Phe Leu Ile Gly Cys Cys Ile Val
 1 5 10 15
 Gly Tyr Phe Trp Met Arg Lys Glu Ser Ile Val Glu Gln Trp Leu Ser
 20 25 30
 Asn Arg Leu His Thr Gln Val Thr Val Gly Arg Val Ser Ile Arg Thr
 35 40 45
 Ser Gly Ile Lys Ile Arg His Ile Cys Ile His Asn Pro Leu Ala Ser
 50 55 60
 Glu Arg Phe Pro Tyr Ala Ala Glu Ile Glu Tyr Ala Asp Val Arg Phe
 65 70 75 80
 Ser Ser Ile Ser Met Leu Leu Thr Lys Gln Leu Glu Ile Ser Glu Leu
 85 90 95
 Ile Ile His Gly Ala Asn Phe Thr Ile Phe Pro Tyr Asp Ser His Gly
 100 105 110
 Thr Lys Thr Asn Trp Ser Leu Val Trp Lys Asn Phe His Pro Gln Lys
 115 120 125
 Glu Thr Pro Ser Asn Leu Trp Ile Asp Arg Ala Pro Val Leu Ile Arg
 130 135 140
 Arg Cys Leu Phe Leu Asn Thr Arg Leu Tyr Gly Leu Arg Ala Asn His

145 150 155 160
 Lys Asp Ile Pro His Leu Ser Val Pro Ser Leu Glu Phe His Ser His
 165 170 175
 Thr Ser Ser Ala Lys Glu Leu Pro Lys Leu Ser Glu Ala Leu Pro Ser
 180 185 190
 Leu Leu Tyr Leu Ala Leu Glu Glu Ser Leu Tyr His Leu Asn Leu Pro
 195 200 205
 Gly Asp Ile Ile Lys Pro Leu Ser Gln Gln Ala His Lys His Phe Tyr
 210 215 220
 Ser Ser Tyr Pro Gln Phe Gln Asp Arg Leu Asn Asp Ile Asn Thr Pro
 225 230 235 240
 Gly Thr Pro Thr Glu Glu Ile Ile Gly Phe Ile Arg Gly Leu Phe Phe
 245 250 255
 His

<210>152

<211>83

<212>PRT

<213>Chlamydia pneumoniae

<400>152

Ser Lys Glu Gly Arg Ala Ser Glu Ser Phe Gly Asn Ser Leu Ala Glu
 1 5 10 15
 Leu Val Trp Leu Trp Asn Ser Lys Asp Gly Thr Glu Arg Trp Gly Met
 20 25 30
 Ser Leu Trp Leu Ala Leu Ser Pro Tyr Asn Arg Val Phe Arg Asn Arg
 35 40 45
 His Leu Arg Met Ser Thr Gly Ala Arg Ser Ile His Lys Phe Glu Gly
 50 55 60
 Val Ser Phe Cys Gly Trp Lys Phe Phe His Thr Lys Asp Gln Phe Val
 65 70 75 80
 Phe Val Pro

<210>153

<211>544

<212>PRT

<213>Chlamydia pneumoniae

<400>153

Met Ala Ala Lys Asn Ile Lys Tyr Asn Glu Glu Ala Arg Xaa Lys Ile
 1 5 10 15
 His Lys Gly Val Lys Thr Leu Ala Glu Ala Val Lys Val Thr Leu Gly
 20 25 30
 Pro Lys Gly Arg His Val Val Ile Asp Lys Ser Phe Gly Ser Pro Gln
 35 40 45
 Val Thr Lys Asp Gly Val Thr Val Ala Lys Glu Ile Glu Leu Glu Asp
 50 55 60
 Lys His Glu Asn Met Gly Ala Gln Met Val Lys Glu Val Ala Ser Lys
 65 70 75 80
 Thr Ala Asp Lys Ala Gly Asp Gly Thr Thr Thr Ala Thr Val Leu Ala
 85 90 95
 Glu Ala Ile Tyr Ser Glu Gly Leu Arg Asn Val Thr Ala Gly Ala Asn
 100 105 110
 Pro Met Asp Leu Lys Arg Gly Ile Asp Lys Ala Val Lys Val Val Val
 115 120 125
 Asp Glu Leu Lys Lys Ile Ser Lys Pro Val Gln His His Lys Glu Ile
 130 135 140
 Ala Gln Val Ala Thr Ile Ser Ala Asn Asn Asp Ser Glu Ile Gly Asn
 145 150 155 160
 Leu Ile Ala Glu Ala Met Glu Lys Val Gly Lys Asn Gly Ser Ile Thr
 165 170 175
 Val Glu Glu Ala Lys Gly Phe Glu Thr Val Leu Asp Val Val Glu Gly
 180 185 190
 Met Asn Phe Asn Arg Gly Tyr Leu Ser Ser Tyr Phe Ser Thr Asn Pro
 195 200 205
 Glu Thr Gln Glu Cys Val Leu Glu Asp Ala Leu Ile L u Ile Tyr Asp

210	215	320																	
Lys Lys Ile Ser Gly Ile Lys Asp Phe Leu Pro Val Leu Gln Gln Val																			
225	230	235	240																
Ala Glu Ser Gly Arg Pro Leu Leu Ile Ile Ala Glu Glu Ile Glu Gly																			
	245	250	255																
Glu Ala Leu Ala Thr Leu Val Val Asn Arg Leu Arg Ala Gly Phe Arg																			
	260	265	270																
Val Cys Ala Val Lys Ala Pro Gly Phe Gly Asp Arg Arg Lys Ala Met																			
	275	280	285																
Leu Gln Asp Ile Ala Ile Leu Thr Gly Gly Gln Leu Val Ser Glu Glu																			
	290	295	300																
Leu Gly Met Lys Leu Glu Asn Thr Thr Leu Ala Met Leu Gly Lys Ala																			
	305	310	315																
Lys Lys Val Ile Val Thr Lys Glu Asp Thr Thr Ile Val Glu Gly Leu																			
	325	330	335																
Gly Asn Lys Pro Asp Ile Gln Ala Arg Cys Asp Asn Ile Lys Lys Gln																			
	340	345	350																
Ile Glu Asp Ser Thr Ser Asp Tyr Asp Lys Glu Lys Leu Gln Glu Arg																			
	355	360	365																
Leu Ala Lys Leu Ser Gly Gly Val Ala Val Ile Arg Val Gly Ala Ala																			
	370	375	380																
Thr Glu Ile Glu Met Lys Glu Lys Lys Asp Arg Val Asp Asp Ala Gln																			
	385	390	395																
His Ala Thr Ile Ala Ala Val Glu Glu Gly Ile Leu Pro Gly Gly Gly																			
	405	410	415																
Thr Ala Leu Val Arg Cys Ile Pro Thr Leu Glu Ala Phe Leu Pro Met																			
	420	425	430																
Leu Ala Asn Glu Asp Glu Ala Ile Gly Thr Arg Ile Ile Leu Lys Ala																			
	435	440	445																
Leu Thr Ala Pro Leu Lys Gln Ile Ala Ser Asn Ala Gly Lys Glu Gly																			
	450	455	460																
Ala Ile Ile Cys Gln Gln Val Leu Ala Arg Ser Ala Asn Glu Gly Tyr																			
	465	470	475																
Asp Ala Leu Arg Asp Ala Tyr Thr Asp Met Ile Asp Ala Gly Ile Leu																			
	485	490	495																
Asp Pro Thr Lys Val Thr Arg Ser Ala Leu Glu Ser Ala Ala Ser Ile																			
	500	505	510																
Ala Gly Leu Leu Thr Thr Glu Ala Leu Ile Ala Asp Ile Pro Glu																			
	515	520	525																
Glu Lys Ser Ser Ser Ala Pro Ala Met Pro Ser Ala Gly Met Asp Tyr																			
	530	535	540																

<210>154

<211>102

<212>PRT

<213>Chlamydia pneumoniae

<400>154

Met Ser Asp Gln Ala Thr Thr Leu Arg Ile Lys Pro Leu Gly Asp Arg																			
1	5	10	15																
Ile Leu Val Lys Arg Glu Glu Glu Glu Ala Thr Ala Arg Gly Gly Ile																			
	20	25	30																
Ile Leu Pro Asp Thr Ala Lys Arg Lys Gln Asp Arg Ala Glu Val Leu																			
	35	40	45																
Val Leu Gly Thr Gly Lys Arg Thr Asp Asp Gly Thr Leu Leu Pro Phe																			
	50	55	60																
Glu Val Gln Val Gly Asp Ile Ile Leu Met Asp Lys Tyr Ala Gly Gln																			
	65	70	75																
Glu Ile Thr Ile Asp Asp Glu Glu Tyr Val Ile Leu Gln Ser Ser Glu																			
	85	90	95																
Ile Met Ala Val Leu Lys																			
	100																		

<210>155

<211>617

<212>PRT

<213>Chlamydia pneumoniae

<400>155

Lys Gly Val Pro Ser Leu Met Thr Thr Glu Leu Lys Thr Glu Ala Leu
 1 5 10 15
 Pro Thr Arg Thr Gln Val Asp Pro Lys His Cys Trp Asp Thr Thr Leu
 20 25 30
 Met Tyr Ala Asn Arg Glu Glu Trp Lys Lys Asp Phe Asp Leu Cys Ser
 35 40 45
 Ser Gly Lys Asp Arg Ser Pro Ile Trp Pro Glu Phe Ser Pro Ser His
 50 55 60
 Tyr Gln Ile Asp Asn Pro Glu Ser Leu Leu Glu Leu Leu Ser Lys Lys
 65 70 75 80
 Phe Ser Val Glu Arg Lys Leu Asp Gln Leu Tyr Ile Tyr Ala His Leu
 85 90 95
 Ile His Asp Gln Asp Ile Thr Asn Pro Glu Gly Glu Ser Asp Tyr Gln
 100 105 110
 Ser Ile Val Tyr Leu Tyr Thr Leu Phe Ser Gln Glu Ile Ser Trp Ile
 115 120 125
 Gln Pro Ala Xaa Ile Ala Leu Ser Glu Glu Lys Val Ala Ala Leu Leu
 130 135 140
 Ser Ser Ser Val Leu Ala Pro Tyr Arg Phe Tyr Leu Glu Lys Ile Phe
 145 150 155 160
 Arg Leu Ser Pro His Thr Gly Thr Ala Asn Glu Glu Lys Ile Leu Ala
 165 170 175
 Ser Ser Phe Ala Ala Leu Asn Val Ser Asn Lys Ala Phe Ser Ser Leu
 180 185 190
 Ser Asp Ala Glu Ile Pro Phe Gly Ile Ala Lys Asp Ser Asn Gly Glu
 195 200 205
 Glu His Pro Leu Ser His Ala Leu Ala Ser Leu Tyr Met Gln Ser Pro
 210 215 220
 Asp Gln Glu Leu Arg Arg Thr Ala Tyr Leu Ala Gln Phe Gln Arg Tyr
 225 230 235 240
 Tyr Asp Tyr Arg Asn Thr Phe Ala Asn Leu Leu Asn Gly Lys Val Gln
 245 250 255
 Ala His Leu Phe Glu Ala Lys Ala Arg Asn Tyr Pro Ser Cys Leu Glu
 260 265 270
 Ala Ser Leu Phe Gln His Asn Ile Pro Thr Thr Val Tyr Ile Asn Leu
 275 280 285
 Ile Asn Glu Thr Lys Lys His Thr Ser Leu Ile Asn Arg Tyr Phe Asn
 290 295 300
 Leu Lys Lys Glu Ala Leu Asn Leu Lys Glu Phe His Phe Tyr Asp Val
 305 310 315 320
 Tyr Ala Pro Ile Ser Gln Thr Thr Ser Lys Asn Tyr Ser Tyr Gln Glu
 325 330 335
 Gly Val Asp Leu Val Cys Lys Ser Leu Leu Pro Leu Gly Thr His Tyr
 340 345 350
 Val Glu Ile Leu Arg Asn Gly Leu Leu Ser Asn Arg Trp Val Asp Arg
 355 360 365
 Tyr Glu Asn Lys His Lys Arg Ser Gly Ala Tyr Ser Ser Gly Cys Tyr
 370 375 380
 Asp Ser Ala Pro Tyr Ile Leu Leu Asn Tyr Thr Asn Thr Leu Tyr Asp
 385 390 395 400
 Val Ser Val Ile Ala His Glu Ala Gly His Ser Met His Ser Tyr Phe
 405 410 415
 Ser Arg Glu Ala Gln Pro Tyr His Asp Ala Gln Tyr Pro Leu Phe Leu
 420 425 430
 Ala Glu Ile Ala Ser Thr Phe Asn Glu Met Leu Leu Met Glu Ala Leu
 435 440 445
 Ser Lys Ser Asp Gln Ser Lys Glu Asp Lys Ile Val Ile Ile Thr Lys
 450 455 460
 Thr Leu Asp Thr Ile Phe Ala Thr Leu Phe Arg Gln Thr Phe Phe Ala
 465 470 475 480
 Ala Phe Glu Tyr Glu Ile His Ser Ala Ala Glu Gln Gly Thr Pro Leu
 485 490 495
 Thr Glu Glu Phe Leu Ser Ala Thr Tyr Gly Asn Leu Gln Lys Glu Phe

500 505 510
 Tyr Gly Gly Val Val Thr Ser Asp Ser Leu Ser Ala Leu Glu Trp Ala
 515 520 525
 Arg Ile Pro His Phe Tyr Tyr Asn Phe Tyr Val Tyr Gln Tyr Ala Thr
 530 535 540
 Gly Ile Ile Ala Ala Leu Ser Phe Ala Glu Lys Xaa Leu Thr Gln Glu
 545 550 555 560
 Pro Gly Ala Leu Glu Leu Tyr Leu Lys Phe Leu Lys Ser Gly Arg Ser
 565 570 575
 Asp Phe Pro Leu Asn Ile Leu Lys Lys Ser Gly Leu Asp Met Thr Thr
 580 585 590
 Ser Ala Pro Leu Asp Lys Ala Phe Ala Phe Ile Thr Lys Lys Ile Asp
 595 600 605
 Leu Leu Ser Ser Leu Leu Ser Glu Asp
 610 615

<210>156

<211>251

<212>PRT

<213>Chlamydia pneumoniae

<400>156

Met Asn Val Ala Asp Leu Leu Ser His Leu Glu Thr Leu Leu Ser Ser
 1 5 10 15
 Lys Ile Phe Gln Asp Tyr Gly Pro Asn Gly Leu Gln Val Gly Asp Pro
 20 25 30
 Gln Thr Pro Val Lys Lys Ile Ala Val Ala Val Thr Ala Asp Leu Glu
 35 40 45
 Thr Ile Lys Gln Ala Val Ala Ala Glu Ala Asn Val Leu Ile Val His
 50 55 60
 His Gly Ile Phe Trp Lys Gly Met Pro Tyr Pro Ile Thr Gly Met Ile
 65 70 75 80
 His Lys Arg Ile Gln Leu Leu Ile Glu His Asn Ile Gln Leu Ile Ala
 85 90 95
 Tyr His Leu Pro Leu Asp Ala His Pro Thr Leu Gly Asn Asn Trp Arg
 100 105 110
 Val Ala Leu Asp Leu Asn Trp His Asp Leu Lys Pro Phe Gly Ser Ser
 115 120 125
 Leu Pro Tyr Leu Gly Val Gln Gly Ser Phe Ser Pro Ile Asp Ile Asp
 130 135 140
 Ser Phe Ile Asp Leu Leu Ser Arg Tyr Tyr Gln Ala Pro Leu Lys Gly
 145 150 155 160
 Ser Ala Leu Gly Gly Pro Ser Arg Val Ser Ser Ala Ala Leu Ile Ser
 165 170 175
 Gly Gly Ala Tyr Arg Glu Leu Ser Ser Ala Ala Thr Ser Gln Val Asp
 180 185 190
 Cys Phe Ile Thr Gly Asn Phe Asp Glu Pro Ala Trp Ser Thr Ala Leu
 195 200 205
 Glu Ser Asn Ile Asn Phe Leu Ala Phe Gly His Thr Ala Thr Glu Lys
 210 215 220
 Val Gly Pro Lys Ser Leu Ala Glu His Leu Lys Ser Glu Phe Pro Ile
 225 230 235 240
 Ser Thr Thr Phe Ile Asp Ala Ala Asn Pro Phe
 245 250

<210>157

<211>449

<212>PRT

<213>Chlamydia pneumoniae

<400>157

Met Trp Lys Leu Thr Lys Arg Asn Ser Met Leu Asn Cys Ser Asn Gln
 1 5 10 15
 Lys His Thr Val Thr Phe Glu Glu Ala Cys Gln Val Phe Pro Gly Gly
 20 25 30
 Val Asn Ser Pro Val Arg Ala Cys Arg Ser Val Gly Val Thr Pro Pro
 35 40 45
 Ile Val Ser Ser Ala Gln Gly Asp Ile Phe Leu Asp Thr His Gly Arg

50					35					60				
Glu	Phe	Ile	Asp	Phe	Cys	Gly	Gly	Trp	Gly	Ala	Leu	Ile	His	Gly
65					70					75				80
Ser	His	Pro	Lys	Ile	Val	Lys	Ala	Ile	Gln	Lys	Thr	Ala	Leu	Lys
				85					90					95
Thr	Ser	Tyr	Gly	Leu	Thr	Ser	Glu	Glu	Glu	Ile	Leu	Phe	Ala	Thr
			100					105					110	
Leu	Leu	Ser	Ser	Leu	Lys	Leu	Lys	Glu	His	Lys	Ile	Arg	Phe	Val
		115					120					125		
Ser	Gly	Thr	Glu	Ala	Thr	Met	Thr	Ala	Val	Arg	Leu	Ala	Arg	Gly
	130					135				140				Ile
Thr	Asn	Arg	Ser	Ile	Ile	Ile	Lys	Phe	Ile	Gly	Gly	Tyr	His	Gly
145					150					155				160
Ala	Asp	Thr	Leu	Leu	Gly	Gly	Ile	Ser	Thr	Thr	Glu	Glu	Thr	Ile
			165						170					175
Asn	Leu	Thr	Ser	Leu	Ile	His	Thr	Pro	Ser	Pro	His	Ser	Leu	Ile
			180					185					190	
Ser	Leu	Pro	Tyr	Asn	Asn	Ser	Gln	Ile	Leu	His	His	Val	Met	Glu
		195					200					205		Ala
Leu	Gly	Pro	Gln	Val	Ala	Gly	Ile	Ile	Phe	Glu	Pro	Ile	Cys	Ala
	210					215					220			Asn
Met	Gly	Ile	Val	Leu	Pro	Lys	Ala	Glu	Phe	Leu	Asp	Asp	Ile	Ile
225					230					235				240
Leu	Cys	Lys	Arg	Phe	Gly	Ser	Leu	Ser	Ile	Met	Asp	Glu	Val	Val
			245						250					255
Gly	Phe	Arg	Val	Ala	Phe	Gln	Gly	Ala	Gln	Asp	Ile	Phe	Asn	Leu
			260					265					270	Ser
Pro	Asp	Ile	Thr	Ile	Tyr	Gly	Lys	Ile	Leu	Gly	Gly	Gly	Leu	Pro
	275						280					285		Ala
Ala	Ala	Leu	Val	Gly	His	Arg	Ser	Ile	Leu	Asp	His	Leu	Met	Pro
	290					295					300			Glu
Gly	Thr	Ile	Phe	Gln	Ala	Gly	Thr	Met	Ser	Gly	Asn	Phe	Leu	Ala
305				310						315				320
Ala	Thr	Gly	His	Ala	Ala	Ile	Gln	Leu	Cys	Gln	Ser	Glu	Gly	Phe
			325						330					335
Asp	His	Leu	Ser	Gln	Leu	Glu	Ala	Leu	Phe	Tyr	Ser	Pro	Ile	Glu
		340						345					350	Glu
Glu	Ile	Arg	Ser	Gln	Gly	Phe	Pro	Val	Ser	Leu	Val	His	Gln	Gly
	355						360					365		Thr
Met	Phe	Ser	Leu	Phe	Phe	Thr	Glu	Ser	Ala	Pro	Thr	Asn	Phe	Asp
	370					375					380			Glu
Ala	Lys	Asn	Ser	Asp	Val	Glu	Lys	Phe	Gln	Thr	Phe	Tyr	Ser	Glu
385					390					395				400
Phe	Asp	Asn	Gly	Val	Tyr	Leu	Ser	Pro	Ser	Pro	Leu	Glu	Ala	Asn
			405						410					415
Ile	Ser	Ser	Ala	His	Thr	Glu	Glu	Asn	Leu	Thr	Tyr	Ala	Gln	Asn
		420						425					430	Ile
Ile	Ile	Asp	Ser	Leu	Ile	Lys	Ile	Phe	Asp	Ser	Ser	Ala	Gln	Arg
	435						440						445	Phe

Xaa

<210>158

<211>174

<212>PRT

<213>Chlamydia pneumoniae

<400>158

Ser	Leu	Leu	Leu	Asn	Ile	Asn	Gln	Gly	Val	Phe	Ala	Arg	Ser	Val
1				5					10					15
Leu	Leu	Cys	Glu	His	Ser	Leu	Asn	Gly	Ser	Phe	Gly	Leu	Ile	Leu
		20						25				30		Asn
Lys	Thr	Leu	Gly	Phe	Glu	Ile	Ser	Asp	Asp	Ile	Phe	Thr	Phe	Glu
	35						40					45		Lys
Val	Ser	Asn	His	Asn	Ile	Arg	Phe	Cys	Xaa	Gly	Gly	Pro	Leu	Gln
	50					55						60		Ala

Asn Gln Met Met Leu His Ser Cys Ser Glu Ile Pro Glu Gln Thr
 65 70 75 80
 Leu Glu Ile Cys Pro Ser Val Tyr Leu Gly Gly Asp Leu Pro Phe Leu
 85 90 95
 Gln Glu Ile Ala Ser Ser Glu Ser Gly Pro Glu Ile Asn Leu Cys Phe
 100 105 110
 Gly Tyr Ser Gly Trp Gln Ala Gly Gln Leu Glu Lys Glu Phe Leu Ser
 115 120 125
 Asn Asp Trp Phe Leu Ala Pro Gly Asn Lys Asp Tyr Val Phe Tyr Ser
 130 135 140
 Glu Pro Glu Asp Leu Trp Ala Leu Val Leu Lys Asp Leu Gly Gly Lys
 145 150 155 160
 Tyr Ala Ser Leu Ser Thr Val Pro Asp Asn Leu Leu Leu Asn
 165 170

<210>159

<211>124

<212>PRT

<213>Chlamydia pneumoniae

<400>159

Met Ser Leu Glu Lys Glu Leu Leu Glu Glu Thr Pro Leu Val Leu Leu
 1 5 10 15
 Asn Phe Tyr Lys Leu Val Ser Phe Cys Asn Tyr Ala Gly Met Ile Leu
 20 25 30
 Gly Thr Glu Glu Lys Lys Phe Ala Ile Tyr Gly His Val Ser Met Gly
 35 40 45
 Gln Ala Phe Gln Gly Ala Asp Thr Glu Gly His Ser Pro Gln Arg Pro
 50 55 60
 Phe Ala His Asp Leu Leu Asn Phe Val Phe Ser Gly Phe Asp Ile Gln
 65 70 75 80
 Val Leu Arg Val Val Ile Asn Asp Tyr Lys Asp Asn Val Phe Tyr Thr
 85 90 95
 Arg Leu Phe Leu Glu Gln Lys Asp Arg Glu Phe Leu Tyr Val Val Asp
 100 105 110
 Val Asp Ala Arg Pro Ser Asp Arg Ser Leu Ser Pro
 115 120

<210>160

<211>140

<212>PRT

<213>Chlamydia pneumoniae

<400>160

Ser Arg Pro Ser Ile Ala Asp Asp Gln Arg Trp Trp Arg Thr Phe Phe
 1 5 10 15
 Arg Glu Lys Ile Leu Leu Arg Ala Ala Lys Arg Ser Ile Ile Leu Val
 20 25 30
 Asp Glu Ser Lys Leu Val Pro Val Leu Gly Lys Phe Arg Val Pro Leu
 35 40 45
 Glu Ile Ser Arg Phe Gly Arg Ser Ala Ile Ile Glu Glu Ile Arg His
 50 55 60
 Leu Gly Tyr Glu Gly Glu Trp Arg Leu Gln Asp Thr Gly Asp Leu Phe
 65 70 75 80
 Ile Thr Asp Ser Ser Asn Tyr Ile Tyr Asp Ile Phe Ser Pro Asn Ser
 85 90 95
 Tyr Pro Asn Pro Glu Lys Asp Leu Leu Lys Leu Ile Gln Ile His Gly
 100 105 110
 Val Ile Glu Val Gly Phe Val Ile Glu Lys Val Glu Val Trp Ser Ser
 115 120 125
 Asn Ser Gln Gly Leu Ile Ser Lys Lys Tyr Ser Val
 130 135 140

<210>161

<211>112

<212>PRT

<213>Chlamydia pneumoniae

<400>161

Val Glu Lys Asp Leu His Leu His Glu Lys Lys Cys Leu Ala His Glu

1 5 10 15
 Ala Ala Thr Gln Val Thr Ser Gly Met Ile Leu Gly Leu Gly Ser Gly
 20 25 30
 Ser Thr Ala Lys Glu Phe Ile Phe Ala Leu Ala His Arg Ile Gln Thr
 35 40 45
 Glu Ser Leu Ala Val His Ala Ile Ala Ser Ser Gln Asn Ser Tyr Ala
 50 55 60
 Leu Ala Lys Gln Leu Ala Ile Pro Leu Leu Asn Pro Glu Lys Phe Ser
 65 70 75 80
 Ser Leu Asp Leu Thr Val Asp Gly Ala Asp Glu Val Asp Pro Gln Leu
 85 90 95
 Arg Met Ile Lys Gly Gly Gly Gly Pro Phe Ser Glu Lys Arg Phe Phe
 100 105 110
 <210>162
 <211>378
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>162
 Arg Arg Thr Ile Met Asn Thr Ser Leu Lys Arg Pro Leu Lys Ser His
 1 5 10 15
 Phe Asp Val Val Gly Ser Phe Leu Arg Pro Glu His Leu Lys Lys Thr
 20 25 30
 Arg Glu Ser Leu Lys Glu Gly Ser Ile Ser Leu Asp Gln Leu Met Gln
 35 40 45
 Ile Glu Asp Ile Ala Ile Gln Asp Leu Ile Lys Lys Gln Lys Ala Ala
 50 55 60
 Gly Leu Ser Phe Ile Thr Asp Gly Glu Phe Arg Arg Ala Thr Trp His
 65 70 75 80
 Tyr Asp Phe Met Trp Gly Phe His Gly Val Gly His His Arg Ala Thr
 85 90 95
 Glu Gly Val Phe Phe Asp Gly Glu Arg Ala Met Ile Asp Asp Thr Tyr
 100 105 110
 Leu Thr Asp Lys Ile Ser Val Ser His His Pro Phe Val Asp His Phe
 115 120 125
 Lys Phe Val Lys Ala Leu Glu Asp Glu Phe Thr Thr Ala Lys Gln Thr
 130 135 140
 Leu Pro Ala Pro Ala Gln Phe Leu Lys Gln Met Ile Phe Pro Asn Asn
 145 150 155 160
 Ile Glu Val Thr Arg Lys Phe Tyr Pro Thr Asn Gln Glu Leu Ile Glu
 165 170 175
 Asp Ile Val Ala Gly Tyr Arg Lys Val Ile Arg Asp Leu Tyr Asp Ala
 180 185 190
 Gly Cys Arg Tyr Leu Gln Leu Asp Asp Cys Thr Arg Gly Gly Leu Val
 195 200 205
 Asp Pro Arg Val Cys Ser Trp Tyr Gly Ile Asp Glu Lys Gly Leu Gln
 210 215 220
 Asp Leu Ile Gln Gln Tyr Leu Leu Ile Asn Asn Leu Val Ile Ala Asp
 225 230 235 240
 Arg Pro Asp Asp Leu Val Val Asn Leu His Val Cys Arg Gly Asn Tyr
 245 250 255
 His Ser Lys Phe Phe Ala Ser Gly Ser Tyr Asp Phe Ile Ala Lys Pro
 260 265 270
 Leu Phe Glu Gln Thr Asn Val Asp Gly Tyr Tyr Leu Glu Phe Asp His
 275 280 285
 Glu Arg Ser Gly Asp Phe Ser Pro Leu Thr Phe Ile Ser Gly Glu Lys
 290 295 300
 Thr Val Cys Leu Gly Leu Val Thr Ser Lys Thr Pro Thr Leu Glu Asn
 305 310 315 320
 Lys Asp Glu Val Ile Ala Arg Ile His Gln Ala Ala Asp Tyr Leu Pro
 325 330 335
 Leu Glu Arg Leu Ser Leu Ser Pro Gln Cys Gly Phe Ala Ser Cys Glu
 340 345 350
 Ile Gly Asn Lys Leu Thr Glu Glu Glu Gln Trp Ala Lys Val Ala Leu
 355 360 365

Val Lys Glu Ile Ser Glu Glu Val Trp Lys
370 375

<210>163

<211>872

<212>PR1

<213>Chlamydia pneumoniae

<400>163

Val Leu Gly Val Asn Phe Met Glu Lys Phe Ser Asp Ala Val Ser Glu
1 5 10 15
Ala Leu Glu Lys Ala Phe Glu Leu Ala Lys Ser Ser Lys His Thr Tyr
20 25 30
Val Thr Glu Asn His Leu Leu Leu Ala Leu Glu Asn Thr Glu Ser
35 40 45
Leu Phe Tyr Leu Val Ile Lys Asp Ile His Gly Asn Pro Gly Leu Leu
50 55 60
Asn Thr Ala Val Lys Asp Ala Leu Ser Arg Glu Pro Thr Val Val Glu
65 70 75 80
Gly Glu Val Asp Pro Lys Pro Ser Pro Gly Leu Gln Thr Leu Leu Arg
85 90 95
Asp Ala Lys Gln Glu Ala Lys Thr Leu Gly Asp Glu Tyr Ile Ser Gly
100 105 110
Asp His Leu Leu Leu Ala Phe Trp Ser Ser Asn Lys Glu Pro Phe Asn
115 120 125
Ser Trp Lys Gln Thr Thr Lys Val Ser Phe Lys Asp Leu Lys Asn Leu
130 135 140
Ile Thr Lys Ile Arg Arg Gly Asn Arg Met Asp Ser Pro Ser Ala Glu
145 150 155 160
Ser Asn Phe Gln Gly Leu Glu Lys Tyr Cys Lys Asn Leu Thr Ala Leu
165 170 175
Ala Arg Glu Gly Lys Leu Asp Pro Val Ile Gly Arg Asp Glu Glu Ile
180 185 190
Arg Arg Thr Ile Gln Val Leu Ser Arg Arg Thr Lys Asn Asn Pro Met
195 200 205
Leu Ile Gly Glu Pro Gly Val Gly Lys Thr Ala Ile Ala Glu Gly Leu
210 215 220
Ala Leu Arg Leu Ile Gln Gly Asp Val Pro Glu Ser Leu Lys Gly Lys
225 230 235 240
Gln Leu Tyr Val Leu Asp Met Gly Ala Leu Ile Ala Gly Ala Lys Tyr
245 250 255
Arg Gly Glu Phe Glu Glu Arg Leu Lys Ser Val Leu Lys Asp Val Glu
260 265 270
Ser Gly Asp Gly Glu His Ile Ile Phe Ile Asp Glu Val His Thr Leu
275 280 285
Val Gly Ala Gly Ala Thr Asp Gly Ala Met Asp Ala Ala Asn Leu Leu
290 295 300
Lys Pro Ala Leu Ala Arg Gly Thr Leu His Cys Ile Gly Ala Thr Thr
305 310 315 320
Leu Asn Glu Tyr Gln Lys Tyr Ile Glu Lys Asp Ala Ala Leu Glu Arg
325 330 335
Arg Phe Gln Pro Ile Phe Val Thr Glu Pro Ser Leu Glu Asp Ala Val
340 345 350
Phe Ile Leu Arg Gly Leu Arg Glu Lys Tyr Glu Ile Phe His Gly Val
355 360 365
Arg Ile Thr Glu Gly Ala Leu Asn Ala Ala Val Leu Leu Ser Tyr Arg
370 375 380
Tyr Ile Pro Asp Arg Phe Leu Pro Asp Lys Ala Ile Asp Leu Ile Asp
385 390 395 400
Glu Ala Ala Ser Leu Ile Arg Met Gln Ile Gly Ser Leu Pro Leu Pro
405 410 415
Ile Asp Glu Lys Glu Arg Glu Leu Ala Ala Leu Ile Val Lys Gln Glu
420 425 430
Ala Ile Lys Arg Glu Gln Ser Pro Ser Tyr Gln Glu Glu Ala Asp Ala
435 440 445
Met Gln Lys Ser Ile Asp Ala Leu Arg Glu Glu Leu Ala Ser Leu Arg

450	455	460
Leu Gly Trp Asp Glu Glu Lys Lys Leu Ile Ser Gly Leu Lys Glu Lys		
465	470	475
Lys Asn Ser Leu Glu Ser Met Lys Phe Ser Glu Glu Glu Ala Glu Arg		480
	485	490
Val Ala Asp Tyr Asn Arg Val Ala Glu Leu Arg Tyr Ser Leu Ile Pro		495
	500	505
Gln Leu Glu Glu Glu Ile Lys Gln Asp Glu Ala Ser Leu Asn Gln Arg		510
	515	520
Asp Asn Arg Leu Leu Gln Glu Glu Val Asp Glu Arg Leu Ile Ala Gln		525
	530	535
Val Val Ala Asn Trp Thr Gly Ile Pro Val Gln Lys Met Leu Glu Gly		540
	545	550
Glu Ala Glu Lys Leu Leu Ile Leu Glu Glu Ser Leu Glu Glu Arg Val		555
	560	565
Val Gly Gln Pro Phe Ala Val Ser Ala Val Ser Asp Ser Ile Arg Ala		570
	575	580
Ala Arg Val Gly Leu Asn Asp Pro Gln Arg Pro Leu Gly Val Phe Leu		585
	590	595
Phe Leu Gly Pro Thr Gly Val Gly Lys Thr Glu Leu Ala Lys Ala Leu		600
	605	610
Ala Asp Leu Leu Phe Asn Lys Glu Glu Ala Met Val Arg Phe Asp Met		615
	620	625
Ser Glu Tyr Met Glu Lys His Ser Ile Ser Lys Leu Ile Gly Ser Ser		630
	635	640
Pro Gly Tyr Val Gly Tyr Glu Glu Gly Gly Ser Leu Ser Glu Ala Leu		645
	650	655
Arg Arg Arg Pro Tyr Ser Val Val Leu Phe Asp Glu Ile Glu Lys Ala		660
	665	670
Asp Lys Glu Val Leu Asn Ile Leu Leu Gln Val Phe Asp Asp Gly Ile		675
	680	685
Leu Thr Asp Gly Lys Lys Arg Lys Val Asn Cys Lys Asn Ala Leu Phe		690
	695	700
Ile Met Thr Ser Asn Ile Gly Ser Pro Glu Leu Ala Asp Tyr Cys Ser		705
	710	715
Lys Lys Gly Ser Glu Leu Thr Lys Glu Ala Ile Leu Ser Val Val Ser		720
	725	730
Pro Val Leu Lys Arg Tyr Leu Ser Pro Glu Phe Met Asn Arg Ile Asp		735
	740	745
Glu Ile Leu Pro Phe Val Pro Leu Thr Lys Glu Asp Ile Val Lys Ile		750
	755	760
Val Gly Ile Gln Met Arg Arg Ile Ala Gln Arg Leu Lys Ala Arg Arg		765
	770	775
Ile Asn Leu Ser Trp Asp Asp Ser Val Ile Leu Phe Leu Ser Glu Gln		780
	785	790
Gly Tyr Asp Ser Ala Phe Gly Ala Arg Pro Leu Lys Arg Leu Ile Gln		795
	800	805
Gln Lys Val Val Ile Leu Leu Ser Lys Ala Leu Leu Lys Gly Asp Ile		810
	815	820
Lys Pro Asp Thr Ser Ile Glu Leu Thr Met Ala Lys Glu Val Leu Val		825
	830	835
Phe Lys Lys Val Glu Thr Pro Ser		840
	845	850
855	860	
865	870	
<210>164		
<211>162		
<212>PRT		
<213>Chlamydia pneumoniae		
<400>164		
Asn Cys Ala Ala Ser Phe Ile Trp Leu Asn Lys Ser Ser His Arg Asn		
1	5	10
Leu Arg Ser Pro Met Phe Lys Ser Phe Ile Val Arg Tyr Met Phe Val		15
	20	25
Gly Gly Leu Val Ser Phe Leu Leu Pro Ile Pro Asp Leu Glu Cys Ala		30
	35	40
		45

Asn Asn Val Thr Lys Thr Tyr Asp Lys Lys Ala Ser Val Ile Ser Arg
 50 55 60
 Asp Leu Lys Leu Cln Glu Asp Cys Gln Lys Phe Trp Asn Leu Asp Pro
 65 70 75 80
 Tyr Lys Leu Glu Ser Leu Cys Ala Tyr Gln Val Leu Tyr His Asp Asp
 85 90 95
 Tyr Ser Ser Lys Arg Ile Arg Glu Leu Phe Pro Gln Ile Gln Lys Asp
 100 105 110
 Glu Val Pro Ile Phe Ala Thr Met Ile Leu Thr Leu Gly Lys Val Asp
 115 120 125
 Arg Gly Phe Ser Pro Glu Glu Ile Ser Leu Ile Gln Lys Leu Ser Tyr
 130 135 140
 Pro Gly Leu Ser Leu Ala Ser Leu Arg Gly Ser Thr Glu Ile Arg Pro
 145 150 155 160
 Glu Tyr Arg Phe Gly Ser Cys Phe Ser Ser Val Gly Val Phe Trp Arg
 165 170 175
 Phe Arg Glu Glu Pro Ser
 180
 <210>165
 <211>399
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>165
 Glu Gly Leu Cln Lys Leu Asp Pro Asn Thr Asp Leu Ala Arg Ala Leu
 1 5 10 15
 Val Val Ser Glu Phe Ser Gly Asp Leu Gly Lys Asn Arg Ala Asp Tyr
 20 25 30
 Tyr Ser Asn Cys Leu Asp Ile Leu Ala Leu Arg Ile His Ala Glu Arg
 35 40 45
 Gln Arg Tyr Leu Asp Gln Ser Pro Cys Val Pro Gly Thr Ser Glu Phe
 50 55 60
 His Lys Ala Thr Ile Glu Ala Ile Asn Thr Ile Leu Phe Tyr Glu Glu
 65 70 75 80
 Ala Val Arg Tyr Pro Ser Lys Lys Glu Met Phe Ser Asp Glu Phe Ser
 85 90 95
 Phe Leu Ser Ser Val Thr Asp Arg Lys Phe Gly Val Cys Leu Gly Val
 100 105 110
 Ser Ser Leu Tyr Phe Ser Leu Ser Gln Arg Leu Asp Leu Pro Leu Glu
 115 120 125
 Ala Val Thr Pro Pro Gly His Ile Tyr Leu Arg Tyr Gln Gly Gly Glu
 130 135 140
 Val Asn Ile Glu Thr Thr Ala Gly Gly Arg His Leu Pro Thr Ala Ser
 145 150 155 160
 Tyr Cys Asp Cys Leu Asp Leu Glu Asp Leu Gln Val Arg Thr Pro Glu
 165 170 175
 Glu Met Ile Gly Leu Thr Phe Met Asn Gln Gly Ser Phe Ala Leu Gln
 180 185 190
 Lys Lys Lys Tyr Lys Glu Ala Glu Glu Ala Tyr Lys Lys Ala Gln Glu
 195 200 205
 Tyr Leu Gly Asp Glu Glu Leu Gln Glu Leu Leu Gly Phe Val Gln Ile
 210 215 220
 Leu Gly Gly Lys Lys Lys Glu Gly Lys Ser Leu Ile Gly Lys Ser Pro
 225 230 235 240
 Arg Ala Ser Gln Lys Gly Ser Val Ala Tyr Asp Tyr Leu Lys Gly Arg
 245 250 255
 Ile Asn Ile Pro Thr Leu Ala Leu Leu Phe Ser Tyr Pro Gly Ser Asn
 260 265 270
 Tyr Glu Glu Ile Ala Ser Tyr Glu Glu Glu Leu Lys Lys Ala Met Lys
 275 280 285
 Ser Ser Met Pro Cys Cys Glu Gly Gln Arg Arg Leu Ala Ser Val Ala
 290 295 300
 Phe His Leu Gly Lys Thr Ala Glu Ala Val Ala Leu Leu Glu Lys Cys
 305 310 315 320
 Val Glu Asp Ile Pro Asn Asp Leu Ser Leu His Leu Arg Leu Cys Lys

325 330 335
 Ile Leu Cys Asp Arg His Glu Tyr Thr Lys Ala Leu Lys Tyr Phe Ile
 340 345 350
 Ile Ala Glu Arg Leu Met Glu Asp Gln Gly Phe Leu Lys Lys Asp Asn
 355 360 365
 Arg Ser Phe Ala Leu Phe Tyr Glu Val Lys Lys Ile Ile Ser Lys Val
 370 375 380
 Ala Pro Gln Lys Ala Asn Thr Leu Leu Leu Met Glu Ser Glu Arg
 385 390 395

<210>166

<211>167

<212>PRT

<213>Chlamydia pneumoniae

<400>166

Ile Ile Val Gly Ile Ser Met Ser Ser Ser Glu Val Val Phe Gln Thr
 1 5 10 15
 Val His Gly Leu Gly Phe Gly Gly Leu Ser Ser Lys Ser Val Val Pro
 20 25 30
 Phe Lys Lys Ser Leu Ser Asp Ala Pro Arg Val Val Cys Ser Ile Leu
 35 40 45
 Val Leu Thr Leu Gly Leu Gly Ala Leu Val Cys Gly Ile Ala Ile Thr
 50 55 60
 Cys Trp Cys Val Pro Gly Val Ile Leu Met Gly Gly Ile Cys Ala Ile
 65 70 75 80
 Val Leu Gly Ala Ile Ser Leu Ala Leu Ser Leu Phe Trp Leu Trp Gly
 85 90 95
 Leu Phe Ser Asn Cys Cys Gly Ser Lys Arg Val Leu Pro Gly Glu Gly
 100 105 110
 Leu Leu Arg Asp Lys Leu Leu Asp Gly Gly Phe Ser Arg Ala Ala Pro
 115 120 125
 Ser Gly Met Gly Leu Pro Gly Asp Gly Ser Pro Arg Ala Ser Thr Pro
 130 135 140
 Ser Cys Leu Glu Glu Leu Gln Ala Glu Ile Gln Ala Val Thr Gln Ala
 145 150 155 160
 Ile Asp Gln Met Ser Asp Asp
 165

<210>167

<211>145

<212>PRT

<213>Chlamydia pneumoniae

<400>167

Leu Pro Ala Pro Glu Leu Arg Ser Ser Trp Val Lys Gly Asp Pro Pro
 1 5 10 15
 Pro Arg Pro Ala Ser Pro Ala Thr Pro Pro Ser Arg Gly Gly Val Ala
 20 25 30
 Glu Phe Leu Ser Leu Gly Ser Pro Leu Phe Pro Gly Leu Gly Ile Ser
 35 40 45
 Ala Leu Gly Ile Leu Ser Ser Leu Lys Val Ile Ser Ile Ala Gln Ala
 50 55 60
 Asn Asn Ala Thr Pro Ser Ser Ile Val Ile Ala Pro Ala Ala Ile Pro
 65 70 75 80
 Lys Gly Gln Gln Pro Ala Arg Thr Thr Arg Pro Ser Pro Ser Lys Glu
 85 90 95
 Ile Ala Thr Thr Ala Met Ile Ala Ala Ile Thr Asp Leu Ala Ile Leu
 100 105 110
 Val Ala Leu Ser Ser Val Leu Asn Ala Gly Ile Ala Ser Leu Glu Gln
 115 120 125
 Phe Thr His Pro Thr Asp Val Ala Ala Asp Val Thr Ala Ser Phe Ile
 130 135 140

Asp

145

<210>168

<211>538

<212>PRT

WO 9927105
<213>Chlamydia pneumoniae

<400>168

Gly Lys Trp Trp Arg Val Ser Ser Met Glu Ser Glu Lys Asp Ile Gly
1 5 10 15
Ala Lys Phe Leu Gly Asp Tyr Arg Ile Leu Tyr Arg Lys Gly Gln Ser
20 25 30
Leu Trp Ser Glu Asp Leu Leu Ala Glu His Arg Phe Ile Lys Lys Arg
35 40 45
Tyr Leu Ile Arg Leu Leu Leu Pro Asp Leu Gly Ser Ser Gln Pro Phe
50 55 60
Met Glu Ala Phe His Asp Val Val Val Lys Leu Ala Lys Leu Asn His
65 70 75 80
Pro Gly Ile Leu Ser Ile Glu Asn Val Ser Glu Ser Glu Gly Arg Cys
85 90 95
Phe Leu Val Thr Gln Glu Gln Asp Ile Pro Ile Leu Ser Leu Thr Gln
100 105 110
Tyr Leu Lys Ser Ile Pro Arg Lys Leu Thr Glu Leu Glu Ile Val Asp
115 120 125
Ile Val Ser Gln Leu Ala Ser Leu Leu Asp Tyr Val His Ser Glu Gly
130 135 140
Leu Ala Gln Glu Glu Trp Asn Leu Asp Ser Val Tyr Ile His Ile Leu
145 150 155 160
Asn Gly Val Pro Lys Val Ile Leu Pro Asp Leu Gly Phe Ala Ser Leu
165 170 175
Ile Lys Glu Arg Ile Leu Asp Gly Phe Ile Ser Asp Glu Glu Asn Arg
180 185 190
Glu Ser Lys Ile Lys Glu Arg Val Leu Leu His Thr Ser Glu Gly Lys
195 200 205
Gln Gly Arg Glu Asp Thr Tyr Ala Phe Gly Ala Ile Thr Tyr Tyr Leu
210 215 220
Leu Phe Gly Phe Leu Pro Gln Gly Ile Phe Pro Met Pro Ser Lys Val
225 230 235 240
Phe Ser Asp Phe Ile Tyr Asp Trp Asp Phe Leu Ile Ser Ser Cys Leu
245 250 255
Ser Cys Phe Met Glu Glu Arg Ala Lys Glu Leu Phe Pro Leu Ile Arg
260 265 270
Lys Lys Thr Leu Gly Glu Glu Leu Gln Asn Val Val Thr Asn Cys Ile
275 280 285
Glu Ser Ser Leu Arg Glu Val Pro Asp Pro Leu Glu Ser Ser Gln Asn
290 295 300
Leu Pro Gln Ala Val Leu Lys Val Gly Glu Thr Lys Val Ser His Gln
305 310 315 320
Gln Lys Glu Ser Ala Glu His Leu Glu Phe Val Leu Val Glu Ala Cys
325 330 335
Ser Ile Asp Glu Ala Met Asp Thr Ala Ile Glu Ser Glu Ser Ser Ser
340 345 350
Gly Val Glu Glu Glu Gly Tyr Ser Leu Ala Leu Gln Ser Leu Leu Val
355 360 365
Arg Glu Pro Val Val Ser Arg Tyr Val Glu Ala Glu Lys Glu Glu Pro
370 375 380
Lys Pro Gln Pro Ile Leu Thr Glu Met Val Leu Ile Glu Gly Gly Glu
385 390 395 400
Phe Ser Arg Gly Ser Val Glu Gly Gln Arg Asp Glu Leu Pro Val His
405 410 415
Lys Val Ile Leu His Ser Phe Phe Leu Asp Val His Pro Val Thr Asn
420 425 430
Glu Gln Phe Asn Arg Tyr Leu Glu Cys Cys Gly Ser Glu Gln Asp Lys
435 440 445
Tyr Tyr Asn Glu Leu Ile Arg Leu Arg Asp Ser Arg Ile Gln Arg Arg
450 455 460
Ser Gly Arg Leu Val Ile Glu Pro Gly Tyr Ala Lys His Pro Val Val
465 470 475 480
Gly Val Thr Trp Tyr Gly Ala Ser Gly Tyr Ala Glu Trp Ile Gly Lys
485 490 495

Arg Leu Pro Thr Glu Ala Glu Trp Glu Ile Ala Ala Ser Gly Gly Val
 500 505 510
 Ala Cys Tyr Ala Ile Pro Val Gly Arg Lys Ser Lys Lys Ala Gly Gln
 515 520 525
 Ile Phe Ser Leu Arg Ile Arg Gln Gln Ser
 530 535
 <210>169
 <211>662
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>169
 Met Lys Glu Glu Asn Ser Gln Ala His Tyr Leu Ala Leu Cys Arg Glu
 1 5 10 15
 Leu Glu Asp His Asp Tyr Ser Tyr Tyr Val Leu His Arg Pro Arg Ile
 20 25 30
 Ser Asp Tyr Glu Tyr Asp Met Lys Leu Arg Lys Leu Leu Ile Glu
 35 40 45
 Arg Ser His Pro Glu Trp Lys Val Leu Trp Ser Pro Ser Thr Arg Leu
 50 55 60
 Gly Asp Arg Pro Ser Gly Thr Phe Ser Val Val Ser His Lys Glu Pro
 65 70 75 80
 Met Leu Ser Ile Ala Asn Ser Tyr Ser Lys Glu Glu Leu Ser Glu Phe
 85 90 95
 Phe Ser Arg Val Glu Lys Ser Leu Gly Thr Ser Pro Arg Tyr Thr Val
 100 105 110
 Glu Leu Lys Ile Asp Gly Ile Ala Val Ala Ile Arg Tyr Glu Asp Arg
 115 120 125
 Val Leu Val Gln Ala Leu Ser Arg Gly Asn Gly Lys Gln Gly Glu Asp
 130 135 140
 Ile Thr Ser Asn Ile Arg Thr Ile Arg Ser Leu Pro Leu Arg Leu Pro
 145 150 155 160
 Glu Asp Ala Pro Glu Phe Ile Glu Val Arg Gly Glu Val Phe Phe Ser
 165 170 175
 Tyr Ser Thr Phe Gln Ile Ile Asn Glu Lys Gln Gln Gln Leu Glu Lys
 180 185 190
 Thr Ile Phe Ala Asn Pro Arg Asn Ala Ala Gly Gly Thr Leu Lys Leu
 195 200 205
 Leu Ser Pro Gln Glu Ser Arg Lys Arg Lys Leu Glu Ile Ser Ile Tyr
 210 215 220
 Asn Leu Ile Ala Pro Gly Asp Asn Asp Ser His Tyr Glu Asn Leu Gln
 225 230 235 240
 Arg Cys Leu Glu Trp Gly Phe Pro Val Ser Gly Lys Pro Arg Leu Cys
 245 250 255
 Ser Thr Pro Glu Glu Val Ile Ser Val Leu Lys Thr Ile Glu Thr Glu
 260 265 270
 Arg Ala Ser Leu Pro Met Glu Ile Asp Gly Ala Val Ile Lys Val Asp
 275 280 285
 Ser Leu Ala Ser Gln Arg Val Leu Gly Ala Thr Gly Lys His Tyr Arg
 290 295 300
 Trp Ala Leu Ala Tyr Lys Tyr Ala Pro Glu Glu Ala Glu Thr Leu Leu
 305 310 315 320
 Glu Asp Ile Leu Val Gln Val Gly Arg Thr Gly Val Leu Thr Pro Val
 325 330 335
 Ala Lys Leu Thr Pro Val Leu Leu Ser Gly Ser Leu Val Ser Arg Ala
 340 345 350
 Ser Leu Tyr Asn Glu Asp Glu Ile His Arg Lys Asp Ile Arg Ile Gly
 355 360 365
 Asp Thr Val Cys Val Ala Lys Gly Gly Glu Val Ile Pro Lys Val Val
 370 375 380
 Arg Val Cys Arg Glu Lys Arg Pro Glu Gly Ser Glu Val Trp Asn Met
 385 390 395 400
 Pro Glu Phe Cys Pro Val Cys His Ser His Val Val Arg Glu Glu Asp
 405 410 415
 Arg Val Ser Val Arg Cys Val Asn Pro Glu Cys Val Ala Gly Ala Ile

420 425 430
 Glu Lys Ile Arg Phe Phe Val Gly Arg Gly Ala Leu Asn Ile Asp His
 435 440 445
 Leu Gly Val Lys Val Ile Thr Lys Leu Phe Glu Leu Gly Leu Val His
 450 455 460
 Thr Cys Ala Asp Leu Phe Gln Leu Thr Thr Glu Asp Leu Met Gln Ile
 465 470 475 480
 Pro Gly Ile Arg Glu Arg Ser Ala Arg Asn Ile Leu Glu Ser Ile Glu
 485 490 495
 Gln Ala Lys His Val Asp Leu Asp Arg Phe Leu Val Ala Leu Gly Ile
 500 505 510
 Pro Leu Ile Gly Ile Gly Val Ala Thr Val Leu Ala Gly His Phe Glu
 515 520 525
 Thr Leu Asp Arg Val Ile Ser Ala Thr Phe Glu Glu Leu Leu Ser Leu
 530 535 540
 Glu Gly Ile Gly Glu Lys Val Ala His Ala Ile Ala Glu Tyr Phe Ser
 545 550 555 560
 Asp Ser Thr His Leu Asn Glu Ile Lys Lys Met Gln Asp Leu Gly Val
 565 570 575
 Cys Ile Ser Pro Tyr His Lys Ser Gly Ser Thr Cys Phe Gly Lys Ala
 580 585 590
 Phe Val Ile Thr Gly Thr Leu Glu Gly Met Ser Arg Leu Asp Ala Glu
 595 600 605
 Thr Ala Ile Arg Asn Cys Gly Lys Val Gly Ser Ser Val Ser Lys
 610 615 620
 Gln Thr Asp Tyr Val Val Met Gly Asn Asn Pro Gly Ser Lys Leu Glu
 625 630 635 640
 Lys Ala Arg Lys Leu Gly Val Ser Ile Leu Asp Gln Glu Ala Phe Thr
 645 650 655
 Asn Leu Ile His Leu Glu
 660

<210>170

<211>441

<212>PRT

<213>Chlamydia pneumoniae

<400>170

Ile Ile Tyr Tyr Lys Phe Phe Tyr Ser Tyr Asn Cys Pro Tyr Phe Ile
 1 5 10 15
 Ser Phe Phe Val Leu Leu Gly Val Asn Met Ala Ser Ser Ser Asn Asn
 20 25 30
 Ser Thr Lys Gln Asp Gly Ile Pro Ser Trp Val Asn Pro Asn Val Gln
 35 40 45
 Trp Asn Arg Ala Ser Gln Val Gly Asp Gln Glu Ala Asn Ser Leu Thr
 50 55 60
 Pro Glu Ala Gln Thr Ser Arg Ser Trp Phe Ser Asp Arg Lys His Phe
 65 70 75 80
 Leu Glu Val Leu Asp Val Ser Leu Glu Glu Met Glu Asn Asn Asp Leu
 85 90 95
 Lys Lys Tyr Ser Arg Tyr Lys Thr Ile Ile Leu Ile Ala Thr Leu Val
 100 105 110
 Thr Val Ala Ile Thr Cys Ile Val Pro Ile Ser Met Val Phe Gly Ile
 115 120 125
 Pro Met Trp Val Pro Cys Leu Ile Leu Phe Gly Ala Gly Leu Ser Ser
 130 135 140
 Ala Phe Leu Ser His Arg Leu Gln Ser Lys Cys Lys Glu Ile His Leu
 145 150 155 160
 Arg Tyr Arg Ala Tyr Gln Ile Tyr Arg Gln Gln Leu Leu Ser Gln Tyr
 165 170 175
 Pro Asp Leu Arg Lys Ser Thr Leu Tyr Lys Tyr Ser Ile Thr His Val
 180 185 190
 Lys Pro Lys Lys Gly Phe Val Gly Lys Leu Val Glu Asn Leu Arg Pro
 195 200 205
 Asp Leu His Lys Asn Lys Asp Asp Gly Gly Ala Ala Asp Ser Arg
 210 215 220

Leu Asp Phe Ala Gly Tyr Gly Val Lys His Tyr Gln Thr Asp Ala Leu
 225 230 235 240
 Leu Gly Val Ser Gly Val Asn Ser Val Gln Trp Gln Arg Leu Ala Ser
 245 250 255
 Leu Ile Met Ser Val Lys Asn Asp Ile Leu Asn Asp Val Gly Ser Arg
 260 265 270
 Glu Pro Ile Asp Lys Ala Gln Arg Ser Ala Leu Val Val Ser Gly Lys
 275 280 285
 Asp Ile Gly Gly Glu Ile Gln Pro Gly Gly Ile Leu Asp Ile Ser Arg
 290 295 300
 Asp Ile Leu Ala Ile Cys Gly Tyr Gly Met Asn Val Gly Val Glu Ala
 305 310 315 320
 Lys Lys Ala Ile Asp Gln Tyr Lys Lys Trp Tyr Leu Asn Ser Ser Thr
 325 330 335
 Phe Ile Ala Trp Asn Pro Gln Leu Pro Ala Ile Ala Gln Ser Tyr Leu
 340 345 350
 Leu Glu Gln Gln Arg His Leu Asp Tyr Ala Ala Lys Ile Phe Gln Asp
 355 360 365
 Leu Ser Ala Leu Thr Thr Ala His Gly Thr Gly Gln Ala Leu Glu Asp
 370 375 380
 Leu Asp Ser Leu Leu Cys Tyr Tyr Asp Gln Leu Ile Glu Ser Lys Gly
 385 390 395 400
 Val Gly Glu Lys Ile Ile Ala Ser Ile His Gln Lys Ala Ser Arg Leu
 405 410 415
 Ser Asn Ala Arg Phe Leu Arg Ser Gly Thr Phe Lys Glu Met Val Glu
 420 425 430
 Ser Ile Pro Arg Val Phe Asn Tyr Tyr
 435 440

<210>171

<211>1156

<212>PRT

<213>Chlamydia pneumoniae

<400>171

His Arg Phe Thr Arg Lys His Leu Asp Leu Ala Met Gln Asp Ser Cys
 1 5 10 15
 Asp Gln Glu His Leu Lys Lys Trp Ser Asn Leu Tyr His Val Phe Ser
 20 25 30
 Ile Thr Ile Lys Glu Phe Thr Glu Gly Lys Leu Glu Gln Asn Glu Val
 35 40 45
 Val Ser Arg Ile Gln Arg Leu Arg Gly Lys Leu Glu Lys Ser Lys Cys
 50 55 60
 Ser Ile Leu Gly Asn Cys Arg Thr Asn Ala Glu Tyr Ala Thr Lys Ser
 65 70 75 80
 Glu Lys Lys Leu Ala Asp Tyr Leu Leu Gln Ile Gly Asp Arg Glu Pro
 85 90 95
 Phe Leu Thr Gly Met His Lys Ala Ile Ala Thr Gly Lys Ala Ile Gln
 100 105 110
 Gly Lys Val Glu Gly Val Ile Ser Gln His Pro Glu Lys Gln Ile Met
 115 120 125
 Met Leu Arg Cys Ser Ile Glu Arg Leu Glu Gly Met Leu Arg Arg Glu
 130 135 140
 Asp Trp Gly Ala Ile Leu Gln Lys Asn Glu Asp Glu Val Leu Ala Leu
 145 150 155 160
 Lys Ser Thr Met Glu Ala Gln Leu Gln Gly Phe Lys Asp Leu Val Gly
 165 170 175
 Thr Trp Glu Gly Lys Tyr Gln Glu Phe Lys Lys Asn Lys Leu Ser Lys
 180 185 190
 Val Leu Val Tyr Asp Phe Thr Lys Ser Tyr Ser Asn Leu Leu Asn Arg
 195 200 205
 Leu Glu Val Leu His Ala Glu Ser Ser Thr Asp Asp Leu Val Leu His
 210 215 220
 Val Asp Arg Met Ser Glu Asp Leu Lys Lys Thr Ile Glu Glu Ile Asp
 225 230 235 240
 Gly Asn Leu Phe Gln Val Thr Pro Glu Glu Leu Ser Leu Leu Ala Arg

				245					250					255	
Glu	Tyr	Gln	Gly	Leu	Met	Asn	Glu	Leu	Pro	Leu	Ile	Val	Gln	Glu	Gly
				260					265					270	
Asn	Arg	Leu	Gln	Glu	Ala	Ile	Ser	Ser	Gln	Gly	Val	Ser	Gln	Gly	Leu
				275					280					285	
Met	Leu	Leu	Asn	Ser	Leu	Leu	Asn	Arg	Asp	Glu	Lys	Ile	Asn	Lys	Asn
				290					295					300	
Ile	Glu	Ser	Ser	Arg	Lys	Asn	Leu	Val	Ala	Ile	Ala	Lys	Gln	Ala	Arg
305					310					315					320
Ser	Asp	Ala	Arg	Asn	Ile	Asp	Ser	Gln	Gly	Leu	Ala	Pro	Leu	Ile	Gln
				325						330					335
Arg	Asn	Arg	Ala	Ser	Leu	Asp	Asn	Ile	Leu	Gln	Asn	Met	Tyr	Leu	Phe
				340					345					350	
Asn	Gly	Ser	Ile	Arg	Asn	Ile	His	Ala	Leu	Asp	Thr	Glu	Thr	Leu	Val
				355					360					365	
Ala	Thr	Ser	Ser	Asn	Met	Phe	Ser	Ala	Met	His	Thr	Phe	Asp	Trp	Asn
				370					375					380	
Ile	Tyr	Thr	Asn	Leu	Leu	Asp	Val	Leu	Glu	Ile	Gln	Ser	Lys	Pro	Ala
385					390					395					400
Pro	Ala	Pro	Met	Glu	Asn	Pro	Asp	Leu	Pro	Gly	Ala	Leu	Pro	Glu	Glu
				405					410						415
Val	Gln	Asp	Ala	Val	Ala	Glu	Asp	Val	Ser	Gly	Thr	His	Arg	Leu	His
				420					425						430
His	Gln	Val	Leu	Lys	Arg	Arg	Cys	Ala	Asp	Leu	Lys	Asn	Met	Ile	Ser
				435					440						445
Gln	Leu	Gln	Lys	Ser	Ile	Asn	Lys	Trp	Gly	Met	Ala	Lys	Ala	Ile	Val
				450					455						460
Leu	Gly	Ile	Val	Ala	Val	Leu	Phe	Cys	Val	Leu	Ser	Ala	Ile	Phe	Ile
465					470					475					480
Gly	Gln	Asn	Ile	Leu	Ser	Leu	Leu	Ile	Leu	Ser	Cys	Val	Gly	Leu	Leu
				485					490						495
Leu	Thr	Gln	Val	Cys	Pro	Leu	Ile	Phe	Asp	Arg	Ile	Ser	Lys	Ser	Lys
				500					505						510
Glu	Phe	Glu	Lys	Gln	Val	Leu	Glu	Thr	Ala	Gln	Ser	Leu	Ile	Pro	Ala
				515					520						525
Thr	Lys	Ile	Leu	Pro	Ser	Glu	Phe	Asn	Asn	Lys	Asp	Leu	Asn	Arg	Leu
				530					535						540
Ala	Lys	Leu	Gln	Asp	Asn	Leu	Asn	Leu	Glu	Gly	Phe	Gly	Pro	Thr	Trp
545					550					555					560
Ala	Arg	Asn	Ile	Val	Ser	Asp	Leu	Glu	Gly	Ile	Pro	Thr	Lys	Glu	Lys
				565						570					575
Ser	Leu	Lys	Asp	Leu	Thr	Lys	Glu	Phe	Arg	Lys	Asp	Ser	Lys	Asn	Leu
				580					585						590
Asn	Lys	Arg	Ile	Lys	Arg	Arg	Phe	Lys	Glu	Gly	Leu	Gly	Gln	Glu	Ala
				595					600						605
Pro	Val	Val	Arg	Pro	Thr	Ile	Pro	Gln	Asp	Ile	Arg	Gly	Ala	Glu	Val
				610					615						620
Phe	Ala	Glu	Leu	His	Arg	Glu	Leu	Glu	His	Leu	Gln	Lys	Gln	Lys	Glu
625					630					635					640
Glu	Ile	Ser	Ile	Arg	Gly	Asp	Ala	Leu	Val	Gln	Glu	Arg	Met	Gly	Leu
				645					650						655
Cys	Leu	Glu	Lys	Ser	Lys	Tyr	Asp	Asn	Glu	Lys	Ala	His	Ala	Ala	Ala
				660					665						670
Met	Thr	Lys	Lys	Val	Gly	Lys	Leu	Gln	Asn	Ile	Asp	Arg	Leu	Gln	Lys
				675					680						685
Asn	Asn	Glu	Thr	Tyr	Val	Arg	Ile	Gln	Asn	Phe	Phe	Arg	Thr	Leu	Ile
				690					695						700
Gln	Glu	Lys	Leu	Gly	Arg	Asp	Thr	Val	Gln	Glu	Ile	Asp	Val	Val	Lys
705					710					715					720
Glu	Ala	Lys	Glu	Leu	His	Glu	Leu	Ala	Ala	Ile	Ile	Tyr	Gly	Asn	Thr
				725						730					735
Ser	Gly	Lys	Ser	Gln	Lys	Gln	Arg	Ala	Lys	Lys	Gln	Phe	Lys	Glu	Asn
				740					745						750
Val	Leu	His	Ile	Ala	Gly	Lys	Gly	Gln	Leu	Glu	Leu	Leu	Glu	Ala	Tyr

755	760	765
Leu Asn Val Thr Ala Ser Gln Gly Leu Cys Arg His Gln Met Gln Ala		
770	775	780
Ser Phe Arg Glu Arg Ile Leu Leu Asn Pro Asp Gly Ala Lys His Gly		
785	790	795
Glu Ala Glu Arg Thr Leu Ala Ser Arg Glu Glu Met Leu Lys Thr Leu		
805	810	815
Gly Leu Ser Tyr Leu Thr Pro Phe Val Arg Phe Ser Ser Pro Glu Ser		
820	825	830
Thr Gln Ser Gly Tyr Asn Gln Ile Leu Lys Val Arg Glu Gln Leu Phe		
835	840	845
Asp Ile Glu Gln Arg Leu Gln Asn Gln Glu Thr Val Ser Pro Glu Asp		
850	855	860
Tyr Ala Ala Val Gln Ala Ala Leu Ala Ala Tyr Val Arg Lys His Glu		
865	870	875
Ser Leu Ile Val Ser Thr Tyr Gly Leu Gly Ala Gln Glu Gly Gln Thr		
885	890	895
Ser Ser Lys Val Thr Thr Leu Met Arg Asp Leu His Ala Val Glu Glu		
900	905	910
Leu Val Glu Met Gly Val Glu Thr Tyr Arg Leu Asn Arg Ser Asp Gln		
915	920	925
Ile Leu His Arg Val His Ser Val Leu His Ser His Leu Arg Asp Ser		
930	935	940
Asp Ser Ser Gly Asn Gly Ile Ile Asp Val Val Lys Lys Leu Phe Glu		
945	950	955
Leu Leu Asn Asn Asn Gly Asn Asn Pro Asn Asp Pro Glu Cys Gln Lys		
965	970	975
Tyr Met Gln Ile Leu Leu Asp Ala Pro Val Ser Leu Leu Tyr Gly Ala		
980	985	990
Phe Lys Ser Phe Lys Asn Glu Phe Leu Leu Asn Phe Thr Glu Leu Asn		
995	1000	1005
Ile Ala Asn Ser Thr Lys Ala Ala Glu Glu Glu Ala Lys Arg Tyr Val		
1010	1015	1020
Glu Glu Lys Gly Arg Gly Phe Glu Thr Tyr Trp Glu Glu Ala Lys Gln		
1025	1030	1035
Arg Leu Glu Ala Ile Ala Ala Glu Leu Asp Asp Leu Arg Asn Gln Glu		
1045	1050	1055
Thr Leu Leu Glu Gln Glu Ile Arg Leu Ala Asn Leu Lys Ile Ser Ile		
1060	1065	1070
Phe Ser Asp Leu Asn Leu Arg Glu Lys Val Ser Val Glu Lys Ala Ala		
1075	1080	1085
Leu Glu Glu Glu Ile Gln Gly Ile Gln Glu Gln Tyr Ala Glu Met Gln		
1090	1095	1100
Gly Ile Glu Asp Leu Glu Lys Gln Lys Phe Glu Asp Leu Gln Lys		
1105	1110	1115
Lys Leu Glu Ala Leu Glu Glu Arg Leu Leu Gln Ile Gly Arg Arg Ile		
1125	1130	1135
Asp Ser Ser Val Asp Lys Gln Lys Glu Leu Leu Gly Leu Leu Gly Arg		
1140	1145	1150
Glu Glu Ala Ala		
1155		
<210>172		
<211>518		
<212>PRT		
<213>Chlamydia pneumoniae		
<400>172		
Cys Tyr Glu Asn Leu Phe His Tyr Pro Arg Ala Ser Met Ala Asp Ile		
1	5	10
Leu Val Ile Gly Ala Asn Pro Thr Gly Leu Ile Leu Ala Asn Met Leu		
20	25	30
Ile Gln His Gly Ile Ser Val Lys Val Ile Asp His Arg Ala Ser Pro		
35	40	45
Glu Asp Pro Ser Phe Leu Asp Cys Arg Lys Leu Pro Val Ile Leu Ser		
50	55	60

Cys Ser Ser Leu Glu Leu Leu His Asn Ser Glu Met Leu Gly Asp Phe
 65 70 75 80
 Ile Gln Ala Asn His Lys Ile Phe Gly Ala Arg Tyr His Trp Lys Lys
 85 90 95
 Arg Thr Leu Leu Phe Lys Phe Ser Gln Ala Thr Asp Ser Pro Val Pro
 100 105 110
 Phe Ser Leu Ser Thr Thr Tyr Gln Ser Leu Glu Gln His Leu Ile Asp
 115 120 125
 Glu Phe Leu Lys Arg Gly Gly Val Ile Asp Trp Ser Thr Arg Pro Val
 130 135 140
 Thr Leu Val Asp Asn Ser Ile Phe Ile Glu Ser Thr Lys Val Ser Gln
 145 150 155 160
 Asn Phe Glu Asn Arg Glu Ile Tyr Asn Pro Lys Trp Ile Ile Ala Cys
 165 170 175
 Glu Ala Asp Asn Asn Leu Asp Ile Arg Asp Leu Val Lys Ser Gln Leu
 180 185 190
 Arg Ala Arg Arg Ile Asn Arg Glu Val Ile Phe Ile Asn Cys Asp Glu
 195 200 205
 Gly Glu Pro Phe Gln Glu Asp His Ile His Leu Leu Pro Ile Thr Lys
 210 215 220
 Asn Phe Leu Asn Phe Val Phe Tyr Asn Pro Gln Glu Lys Thr Lys Gln
 225 230 235 240
 Leu Cys Leu Pro Gln Gly Thr His Ser Ile Ser Pro Lys Leu Lys Gln
 245 250 255
 Lys Leu Leu Tyr Thr Tyr Asn Leu Val Ile Ser Asp Glu Asn Phe His
 260 265 270
 Ile Lys Thr Ser His His Ala Phe Pro Pro Glu His Gly Asn Val Leu
 275 280 285
 Phe Leu Gly Ser Leu Ser Asn Thr Leu Leu Leu Ser Tyr Leu Asn Gly
 290 295 300
 Ile Asn Thr Asn Ile His Ala Ala Phe Asn Leu Ala Trp Lys Leu Leu
 305 310 315 320
 Pro Val Leu Lys Lys Ala Ala Leu Lys His Leu Val Ile Thr Lys Glu
 325 330 335
 Gln Glu Asp Gly Asn Ile Leu Pro Tyr Ile Ser Pro Thr Thr Glu Lys
 340 345 350
 Arg Ala Lys Lys Leu Pro Phe Ser Arg Phe Tyr Thr Pro Ala Leu Met
 355 360 365
 Tyr Tyr Phe Leu Lys Gly Cys Arg Lys Phe Asn Thr Thr Gly Glu Glu
 370 375 380
 Tyr Tyr Tyr Pro Pro His Gln Ala Leu Lys Tyr Arg Ser Ser Asp Ile
 385 390 395 400
 Ile Lys Met Ser Pro Gln Asp Lys Glu Ile His Gly Pro Gly Pro Gly
 405 410 415
 Met Arg Ala Ile Asp Ala Arg Leu Glu Asn Gly Ser Phe Leu Leu Asp
 420 425 430
 Pro Leu Lys Ser Ser Lys His Leu Leu Ile Phe Phe Lys Asp Ile Pro
 435 440 445
 Asp Leu Lys Glu Ala Leu Gln Glu Glu Tyr Gly Glu Trp Ile Glu Ile
 450 455 460
 Cys Asn Val Lys Glu Pro Arg Ile Leu Asn Leu Tyr His Ala Asn Pro
 465 470 475 480
 Asn Ser Leu Phe Ile Ile Arg Pro Asp Arg Tyr Ile Gly Tyr Arg Thr
 485 490 495
 His Thr Phe Lys Leu His Glu Leu Ile Ser Tyr Leu Leu Arg Ile Phe
 500 505 510
 Ala Ser Glu Lys Thr Ser
 515
 <210>173
 <211>319
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>173
 Leu Ile Lys Met Arg Lys val Ala Phe Leu Val Ser Cys Leu Phe Ser

1 5 10 15
 Val Ala Ile Gly Ala Ser Ala Ala Pro Val Arg Val Pro Gly Phe Pro
 20 25 30
 Gln Ile Pro Glu Asp Xaa Val Gln Ile Lys Thr Glu Val Cys Pro Lys
 35 40 45
 Gln Glu Val Cys Leu Ala Val Thr Ile Lys Cys Asp Asp His Asn Leu
 50 55 60
 Ile Gly Val Leu His Leu Pro Asn Thr Pro Thr Pro Glu Gly Gly Phe
 65 70 75 80
 Pro Thr Val Val Leu Phe His Gly Phe Arg Gly Thr Lys Phe Gly Gly
 85 90 95
 Leu Thr Gly Ala Tyr Arg Lys Leu Gly Arg Lys Phe Ala Ala Ala Gly
 100 105 110
 Ile Ala Thr Leu Arg Val Asp Met Ala Gly Cys Gly Asp Ser Glu Gly
 115 120 125
 Val Ala Glu Glu Val Pro Ile Glu Thr Tyr Leu Arg Asp Ala Gln Thr
 130 135 140
 Ile Leu Glu Thr Val Gln Glu His Pro Asp Leu Asn Ala Tyr Arg Leu
 145 150 155 160
 Gly Ile Ser Gly Phe Ser Leu Gly Cys His Ile Ala Phe Glu Leu Ala
 165 170 175
 Lys Ile Tyr Asn Pro Arg Asp Leu Asn Ile Lys Ala Leu Ser Val Trp
 180 185 190
 Ala Pro Ile Ala Asp Gly Gly Ile Leu Leu Lys Glu Leu Tyr Glu Asn
 195 200 205
 Phe Ser Lys His Gly Glu Gly Asp Ile Ile Ser Val Gly Lys Asp Phe
 210 215 220
 Gly Phe Gly Pro Pro Pro Ile Ile Val Cys Ser Gly Asp Val Asp Leu
 225 230 235 240
 Leu Ile Arg Ile Gln Asp His Val Thr Ala Asn Ser Leu Pro Thr Lys
 245 250 255
 Pro Tyr Ile Leu His Gln Gln Gly Ile Asp Asp Thr Leu Val Ser Arg
 260 265 270
 Thr Gln Gln Thr Leu Phe Lys Asn Thr Ala Pro Gly Arg Met Thr Phe
 275 280 285
 Ile Ser Tyr Pro Asn Thr Gly His Asn Leu Ala Thr Ala Pro Asp Leu
 290 295 300
 Asp Met Ile Leu Asp Gln Ile Val Ser His Phe Gln Arg Thr Leu
 305 310 315

<210>174

<211>507

<212>PRT

<213>Chlamydia pneumoniae

<400>174

Met Arg Tyr Asp Pro Asn Leu Ile Glu Lys Lys Trp Gln Gln Phe Trp
 1 5 10 15
 Lys Glu His Arg Ser Phe Gln Ala Asn Glu Asp Glu Asp Lys Val Lys
 20 25 30
 Tyr Tyr Val Leu Asp Met Phe Pro Tyr Pro Ser Gly Ala Gly Leu His
 35 40 45
 Val Gly His Leu Ile Gly Tyr Thr Ala Thr Asp Ile Val Ala Arg Tyr
 50 55 60
 Lys Arg Ala Arg Gly Phe Ser Val Leu His Pro Met Gly Trp Asp Ser
 65 70 75 80
 Phe Gly Leu Pro Ala Glu Gln Tyr Ala Ile Arg Thr Gly Thr His Pro
 85 90 95
 Lys Val Thr Thr Gln Lys Asn Ile Ala Asn Phe Lys Lys Gln Leu Ser
 100 105 110
 Ala Met Gly Phe Ser Tyr Asp Glu Gly Arg Glu Phe Ala Thr Ser Asp
 115 120 125
 Pro Asp Tyr Tyr His Trp Thr Gln Lys Leu Phe Leu Phe Leu Tyr Asp
 130 135 140
 Gln Gly Leu Ala Tyr Met Ala Asp Met Ala Val Asn Tyr Cys Pro Glu
 145 150 155 160

Leu Gly Thr Val Leu Ser Asn Glu Glu Val Glu Asn Gly Phe Ser Ile
 165 170 175
 Glu Gly Gly Tyr Pro Val Glu Arg Lys Met Leu Arg Gln Trp Ile Leu
 180 185 190
 Lys Ile Thr Ala Tyr Ala Asp Lys Leu Leu Glu Gly Leu Asp Ala Leu
 195 200 205
 Asp Trp Pro Glu Asn Val Lys Gln Leu Gln Lys Asn Trp Ile Gly Lys
 210 215 220
 Ser Glu Gly Ala Leu Val Thr Xaa His Leu Thr Gln Glu Gly Ser Leu
 225 230 235 240
 Glu Ala Phe Thr Thr Arg Leu Asp Thr Leu Leu Gly Val Ser Phe Leu
 245 250 255
 Val Ile Ala Pro Glu His Pro Asp Leu Asp Ser Ile Val Ser Glu Glu
 260 265 270
 Gln Arg Asp Glu Val Thr Ala Tyr Val Gln Glu Ser Leu Arg Lys Ser
 275 280 285
 Glu Arg Asp Arg Ile Ser Ser Val Lys Thr Lys Thr Gly Val Phe Thr
 290 295 300
 Gly Asn Tyr Ala Lys His Pro Ile Thr Gly Asn Leu Leu Pro Val Trp
 305 310 315 320
 Ile Ser Asp Tyr Val Val Leu Gly Tyr Gly Thr Gly Val Val Met Gly
 325 330 335
 Val Pro Ala His Asp Glu Arg Asp Arg Glu Phe Ala Glu Met Phe Ser
 340 345 350
 Leu Pro Ile His Glu Val Ile Asp Asp Asn Gly Val Cys Ile His Ser
 355 360 365
 Asn Tyr Asn Asp Phe Cys Leu Asn Gly Leu Ser Gly Gln Glu Ala Lys
 370 375 380
 Asp Tyr Val Ile Asn Tyr Leu Glu Met Arg Ser Leu Gly Arg Ala Lys
 385 390 395 400
 Thr Met Tyr Arg Leu Arg Asp Trp Leu Phe Ser Arg Gln Arg Tyr Trp
 405 410 415
 Gly Glu Pro Ile Pro Ile Ile His Phe Glu Asp Gly Thr His Arg Pro
 420 425 430
 Leu Glu Asp Asp Glu Leu Pro Leu Leu Pro Pro Asn Ile Asp Asp Tyr
 435 440 445
 Arg Pro Glu Gly Phe Gly Gln Gly Pro Leu Ala Lys Ala Gln Asp Trp
 450 455 460
 Val His Ile Tyr Asp Glu Lys Thr Gly Arg Pro Gly Cys Arg Glu Thr
 465 470 475 480
 Tyr Thr Met Pro Gln Trp Ala Gly Ser Cys Trp Tyr Tyr Leu Arg Phe
 485 490 495
 Cys Asp Ala His Asn Tyr Ser Val Ala Leu Glu
 500 505

<210>175

<211>198

<212>PRT

<213>Chlamydia pneumoniae

<400>175

Arg Arg Leu Lys Ile Gly Cys Ile Ser Thr Thr Arg Arg Gln Val Asp
 1 5 10 15
 Gln Asp Val Glu Arg Leu Ile Leu Cys His Ser Gly Gln Ala Leu Ala
 20 25 30
 Gly Ile Ile Phe Val Ser Val Met His Thr Thr Thr Gln Leu Pro Trp
 35 40 45
 Ser Lys Glu Lys Glu Ser Tyr Trp Met Pro Val Asp Leu Tyr Ile Gly
 50 55 60
 Gly Ala Glu His Ala Val Leu His Leu Leu Tyr Ser Arg Phe Trp His
 65 70 75 80
 Arg Val Phe Tyr Asp Ala Gly Leu Val Ser Thr Pro Glu Pro Phe Lys
 85 90 95
 Lys Leu Ile Asn Gln Gly Leu Val Leu Ala Ser Ser Tyr Arg Ile Pro
 100 105 110
 Gly Lys Gly Tyr Val Ser Ile Glu Asp Val Arg Glu Glu Asn Gly Thr

115 120 125
 Trp Ile Ser Thr Cys Gly Glu Ile Val Glu Val Arg Gln Glu Lys Met
 130 135 140
 Ser Lys Ser Lys Leu Asn Gly Val Asp Pro Gln Val Leu Ile Glu Glu
 145 150 155 160
 Tyr Gly Ala Asp Ala Leu Arg Met Tyr Ala Met Phe Ser Gly Pro Leu
 165 170 175
 Asp Lys Asn Lys Thr Trp Ser Asn Glu Gly Val Trp Gly Val Pro Ser
 180 185 190
 Phe Pro Lys Ser Phe Leu
 195

<210>176

<211>163

<212>PRT

<213>Chlamydia pneumoniae

<400>176

Phe Gly Xaa Ser Ser Glu Val Gln Asp Ile Glu Asp Arg Asp Gly Leu
 1 5 10 15
 Val Leu Ala His Lys Leu Val Phe Arg Ile Thr Glu His Ile Glu Lys
 20 25 30
 Met Ser Leu Asn Thr Ile Pro Ser Ser Phe Met Glu Phe Leu Asn Asp
 35 40 45
 Phe Ser Lys Leu Pro Val Tyr Ser Lys Arg Ala Leu Ser Met Ala Val
 50 55 60
 Arg Val Leu Glu Pro Ile Xaa Pro His Ile Ser Glu Glu Leu Trp Val
 65 70 75 80
 Ile Leu Gly Asn Pro Pro Gly Ile Asp Gln Ala Ala Trp Pro Gln Ile
 85 90 95
 Asp Glu Ser Tyr Leu Val Ala Gln Thr Val Thr Phe Val Val Gln Val
 100 105 110
 Asn Gly Lys Leu Arg Gly Arg Leu Glu Val Ala Lys Glu Ala Pro Lys
 115 120 125
 Glu Glu Val Leu Ser Leu Ser Arg Ser Val Val Ala Lys Tyr Leu Glu
 130 135 140
 Asn Ala Gln Ile Arg Lys Glu Ile Tyr Val Pro Asn Lys Leu Val Asn
 145 150 155 160
 Phe Val Leu

<210>177

<211>437

<212>PRT

<213>Chlamydia pneumoniae

<400>177

Met Met Leu Arg Gly Val His Arg Ile Phe Lys Cys Phe Tyr Asp Val
 1 5 10 15
 Val Leu Val Cys Ala Phe Val Ile Ala Leu Pro Lys Leu Leu Tyr Lys
 20 25 30
 Met Leu Val Tyr Gly Lys Tyr Lys Lys Ser Leu Ala Val Arg Phe Gly
 35 40 45
 Leu Lys Lys Pro His Val Pro Gly Glu Gly Pro Leu Val Trp Phe His
 50 55 60
 Gly Ala Ser Val Gly Glu Val Arg Leu Leu Leu Pro Val Leu Glu Lys
 65 70 75 80
 Phe Cys Glu Glu Phe Pro Gly Trp Arg Cys Leu Val Thr Ser Cys Thr
 85 90 95
 Glu Leu Gly Val Gln Val Ala Ser Gln Val Phe Ile Pro Met Gly Ala
 100 105 110
 Thr Val Ser Ile Leu Pro Leu Asp Phe Ser Ile Ile Ile Lys Ser Val
 115 120 125
 Val Ala Lys Leu Arg Pro Ser Leu Ala Val Phe Ser Glu Gly Asp Cys
 130 135 140
 Trp Leu Asn Phe Ile Glu Glu Ala Lys Arg Ile Gly Ala Thr Thr Leu
 145 150 155 160
 Val Ile Asn Gly Arg Ile Ser Ile Asp Ser Ser Lys Arg Phe Lys Phe

165 170 175
 Leu Lys Arg Leu Gly Lys Asn Tyr Phe Ser Pro Val Asp Gly Phe Leu
 180 185 190
 Leu Gln Asp Glu Val Gln Lys Gln Arg Phe Leu Ser Leu Gly Ile Pro
 195 200 205
 Glu His Lys Leu Gln Val Thr Gly Asn Ile Lys Thr Tyr Val Ala Ala
 210 215 220
 Gln Thr Ala Leu His Leu Glu Arg Glu Thr Trp Arg Asp Arg Leu Arg
 225 230 235 240
 Leu Pro Thr Asp Ser Lys Leu Val Ile Leu Gly Ser Met His Arg Ser
 245 250 255
 Asp Ala Gly Lys Trp Leu Pro Val Val Gln Lys Leu Ile Lys Glu Gly
 260 265 270
 Val Ser Val Leu Trp Val Pro Arg His Val Glu Lys Thr Lys Asp Val
 275 280 285
 Glu Glu Ser Leu His Arg Leu His Ile Pro Tyr Gly Leu Trp Ser Arg
 290 295 300
 Gly Ala Asn Phe Ser Tyr Val Pro Val Val Val Val Asp Glu Ile Gly
 305 310 315 320
 Leu Leu Lys Gln Leu Tyr Val Ala Gly Asp Leu Ala Phe Val Gly Gly
 325 330 335
 Thr Phe Asp Pro Lys Ile Gly Gly His Asn Leu Leu Glu Pro Leu Gln
 340 345 350
 Cys Glu Val Pro Leu Ile Phe Gly Pro His Ile Thr Ser Gln Ser Glu
 355 360 365
 Leu Ala Gln Arg Leu Leu Leu Ser Gly Ala Gly Leu Cys Leu Asp Glu
 370 375 380
 Ile Glu Pro Ile Ile Asp Thr Val Ser Phe Leu Leu Asn Asn Gln Glu
 385 390 395 400
 Val Arg Glu Ala Tyr Val Gln Lys Gly Lys Val Phe Val Lys Ala Glu
 405 410 415
 Thr Ala Ser Phe Asp Arg Thr Trp Arg Ala Leu Lys Ser Tyr Ile Pro
 420 425 430
 Leu Tyr Lys Asn Ser
 435

<210>176

<211>179

<212>PRT

<213>Chlamydia pneumoniae

<400>178

Leu Leu Leu Glu Asp Leu Asp Thr Asp Ser Ile Pro Trp Pro Lys Leu
 1 5 10 15
 Tyr Leu Ser Glu Asp Phe Asp Phe Ala Tyr Tyr Pro Glu Ser Lys Ala
 20 25 30
 Ile Ile Asp Thr Val Ala Lys Leu Glu Lys Asn Asn Pro Gly Glu Glu
 35 40 45
 Phe Cys Leu Glu Ser Lys Lys Ile Leu Ala Arg Tyr Leu Leu Glu Gln
 50 55 60
 Leu Phe Lys Leu Glu Thr Gly Leu Asn Phe Pro Thr Ser Thr Ile Asp
 65 70 75 80
 Gly Gly Arg Glu Ser Phe Leu Ile Glu Phe Ser His Glu Thr Lys Lys
 85 90 95
 Pro Thr Val Trp Ala Phe Ile Tyr Phe Tyr Tyr Tyr His Ser Asn Gly
 100 105 110
 Pro Lys Leu Glu Lys Asp Phe Lys Gln Ala Gly Cys Glu Val His Asn
 115 120 125
 Arg Leu Leu Asn Leu Gly Leu Lys Tyr Arg Pro Gln Ala Gly Ala Gln
 130 135 140
 Asn Asp Gly Arg Asn Gly Gly Pro Tyr Gly Pro Ile Gly Phe Leu Ile
 145 150 155 160
 Val Trp Glu Glu Asn Tyr Gly Ser Val Leu Lys Asp His Gly Phe Ile
 165 170 175
 Lys Asp Asn

<310>179

<211>115

<212>PRT

<213>Chlamydia pneumoniae

<400>179

Cys Cys Phe Gly Gly Glu Thr Ala Thr Arg Ile Phe Ser Met Thr Pro
 1 5 10 15
 Ser Gly Phe Ser Leu Ala Thr Glu Glu Lys Val Gln Val Ser Thr Ala
 20 25 30
 Glu Lys Val Ile Lys Ile Leu Ala Leu Ile Phe Phe Pro Ile Ile Leu
 35 40 45
 Ile Ala Leu Ala Ile Arg Tyr Phe Leu His Arg Lys Phe Asp Arg Lys
 50 55 60
 Cys Phe Val Ile Pro Gln Asp Thr Pro Lys Glu Leu Glu Leu Ile Leu
 65 70 75 80
 Ala Ala Asn Pro Gln Leu Val Glu Lys Ala Ala Arg Glu Val His Pro
 85 90 95
 Gly Phe Phe Ala Leu Pro Thr Lys Tyr Gln Ser Met Tyr Ile Gln Thr
 100 105 110
 Ser Lys Gly
 115

<210>180

<211>544

<212>PRT

<213>Chlamydia pneumoniae

<400>180

Thr Val Glu Leu Leu Ser Leu Asn Lys Ser Tyr Phe Glu Ile Gln Arg
 1 5 10 15
 Leu Arg Tyr Arg Pro Glu Ile Leu Thr Leu Leu Glu Thr Ile Arg Ser
 20 25 30
 Lys His Ile Gln Glu Thr Ser Ser Pro Ser Pro Pro Glu Leu
 35 40 45
 Gln Lys His Ile Pro Asn Leu Cys Arg Ile Pro Glu Val Ser Ile Tyr
 50 55 60
 Thr Glu Gln Glu Thr Ser Ser Lys Pro Leu Lys Ile Gly Val Leu Leu
 65 70 75 80
 Ser Gly Gly Gln Ala Pro Gly Gly His Asn Val Val Ile Gly Leu Phe
 85 90 95
 Asp Ala Leu Arg Val Phe Asn Pro Lys Thr Arg Leu Phe Gly Phe Ile
 100 105 110
 Lys Gly Pro Leu Gly Leu Thr Arg Gly Leu Tyr Lys Asp Leu Asp Ile
 115 120 125
 Ser Val Ile Tyr Asp Tyr Tyr Asn Met Gly Gly Phe Asp Met Leu Ser
 130 135 140
 Ser Ser Arg Glu Lys Ile Lys Thr Glu Glu Gln Lys Lys Asn Ile Leu
 145 150 155 160
 Asn Thr Val Lys Gln Leu Lys Leu Asp Gly Leu Leu Ile Ile Gly Gly
 165 170 175
 Asn Asn Ser Asn Thr Asp Thr Ala Met Leu Ala Glu Tyr Phe Leu Ala
 180 185 190
 His Asn Cys Lys Thr Ser Val Ile Gly Val Pro Lys Thr Ile Asp Gly
 195 200 205
 Asp Leu Lys Asn Cys Trp Ile Glu Thr Ser Leu Gly Phe His Thr Ser
 210 215 220
 Cys Arg Thr Tyr Ser Glu Met Ile Gly Asn Leu Ala Lys Asp Ala Leu
 225 230 235 240
 Ser Ala Lys Lys Tyr His His Phe Ile Arg Leu Met Gly Gln Gln Ala
 245 250 255
 Ser Tyr Thr Thr Leu Glu Cys Gly Leu Gln Thr Leu Pro Asn Ile Ala
 260 265 270
 Leu Ile Ser Glu Leu Ile Ala Thr Arg Lys Ile Ser Leu Lys Gln Leu
 275 280 285
 Ser Glu Gln Leu Ala Leu Gly Leu Val Arg Arg Tyr Lys Ser Gly Lys
 290 295 300

Asn Tyr Ser Thr Val Leu Ile Pro Glu Gly Leu Ile Glu His Ile Phe
 305 310 315 320
 Asp Thr Arg Lys Leu Ile Asp Glu Leu Asn Val Leu Leu Ala Asn Gly
 325 330 335
 Asp Ser Ser Met Lys Asn Ser Phe Gln Ala Leu Ser Arg Asp Ile Ly
 340 345 350
 Thr Phe His Leu Phe Pro Lys Asp Ile Ala Asn Gln Leu Leu Ala
 355 360 365
 Arg Asp Ser His Gly Asn Val Arg Val Ser Lys Ile Ala Thr Glu Glu
 370 375 380
 Leu Leu Ala Val Met Val Lys Lys Glu Ile Glu Lys Ile Lys Pro His
 385 390 395 400
 Met Glu Phe His Ser Val Ser His Phe Phe Gly Tyr Glu Ala Arg Ala
 405 410 415
 Gly Phe Pro Ser Asn Phe Asp Cys Asn Tyr Gly Ile Ala Leu Gly Ile
 420 425 430
 Ile Ser Ala Leu Phe Leu Val Arg Gln Lys Thr Gly Tyr Met Ile Thr
 435 440 445
 Ile Asn Asn Leu Ala Gln Ser Tyr Thr Glu Trp Gln Gly Gly Ala Thr
 450 455 460
 Pro Leu Tyr Lys Met Met His Leu Glu Asn Arg Cys Gly Thr Glu Thr
 465 470 475 480
 Pro Val Ile Lys Thr Asp Ser Val Asp Pro Lys Ser Pro Ala Val Gln
 485 490 495
 His Leu Leu Gln Ser Asp Ser Cys Leu Val Glu Asp Leu Tyr Arg
 500 505 510
 Phe Pro Gly Pro Leu Gln Tyr Phe Gly Lys Glu Glu Leu Ile Asp Gln
 515 520 525
 Arg Pro Leu Thr Leu Leu Trp Glu Asn Gln Thr His Ser Pro Leu Leu
 530 535 540
 <210>181
 <211>275
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>181
 Leu Ile Thr Gly Val Val Leu Glu Lys His Glu Gln Arg Thr Met Phe
 1 5 10 15
 Ser Leu Thr Leu Leu Asn Asn Phe Thr Thr Phe Gly Leu Leu His Thr
 20 25 30
 Pro Leu His Tyr Asn Pro Pro Tyr Pro Ile Val Ile Leu Leu His Gly
 35 40 45
 Leu Ala Ser Asp Lys Thr Gly Ser Lys Arg Ser His Val Arg Leu Ala
 50 55 60
 Gln Glu Leu Thr Arg Leu Gly Ile Ala Ala Leu Arg Val Asp Leu Leu
 65 70 75 80
 Gly His Gly Asp Cys Glu Gly Glu Leu Met Asp Phe Ser Leu Glu Asn
 85 90 95
 Tyr Lys Gln Asn Ile Arg Glu Ile Ile Glu Tyr Thr His Ser Leu Leu
 100 105 110
 His Ile Asp Gln Glu Arg Leu Ala Ile Phe Gly Ser Ser Leu Gly Gly
 115 120 125
 Thr Leu Ala Leu Gln Thr Leu Pro Phe Phe Asn Lys Ile Lys Ala Leu
 130 135 140
 Ala Val Trp Ala Pro Thr Ile Ser Gly Glu Leu Met Ala Ala Glu Ala
 145 150 155 160
 Gln Lys Asn Ala Pro Glu Val Ile Thr Met Ser Gln Lys Gly Ala Ile
 165 170 175
 Thr Tyr Ala Gly Met Thr Leu Asn Pro Asp Phe Tyr Thr Gln Phe Leu
 180 185 190
 Lys Ile Asp Ile Val Lys Glu Leu Met Pro Ser Ala Arg Asn Leu Pro
 195 200 205
 Pro Ile Leu Tyr Met Gln Gly Glu Gln Asp Leu Leu Val Ser Ile Asn
 210 215 220
 His Arg Thr Leu Phe Thr Glu Ala Phe Ala Asn Gln Asp Lys Pro Il

225 230 235 240
 Thr Ile Leu Thr Tyr Pro Asp Val Asp His Ala Phe Pro Phe Ala Glu
 245 250 255
 Ser Ser Ala Leu Ser Asp Leu Thr Gln Trp Leu Lys Arg Glu Leu Thr
 260 265 270
 Ser Gly Glu
 275
 <210>182
 <211>242
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>182
 Phe Val Tyr Thr Leu Tyr Asn Ile Gln Ser Pro Phe Arg Ile Met Lys
 1 5 10 15
 Leu Tyr Ser Ile Ser Ser Asp Val Asp Thr Pro Trp Ile Phe Gln Leu
 20 25 30
 Met Ser Lys Val Asp Ser Tyr Leu Phe Leu Gly Gly Asn Arg Ile Lys
 35 40 45
 Val Val Ser Ile Val Met Gln Glu Pro Asn Leu Ile Ile Gly Lys Val
 50 55 60
 Glu Asn Val Arg Ile Ser Thr Ile Val Lys Ile Leu Lys Ile Leu Ser
 65 70 75 80
 Phe Leu Ile Phe Pro Leu Ile Leu Ile Ala Leu Ala Leu His Tyr Phe
 85 90 95
 Leu His Ala Lys Tyr Ala Asn His Leu Leu Val Ser Xaa Ile Leu Glu
 100 105 110
 Arg Ala Pro Gln Tyr Val Pro Ile Pro Gly Arg Ser Gly Xaa Thr Ala
 115 120 125
 Ser His Tyr Lys Leu Thr Thr Leu Val Pro Val Ser Gln Lys Asn Leu
 130 135 140
 Gln Ala Met Gly Ser Asn Pro Leu Xaa Val Glu Ala Ala Leu Arg Thr
 145 150 155 160
 Thr Lys Pro Ser Phe Phe Cys Val Pro Ala Lys Tyr Arg Gln Ile Ile
 165 170 175
 Ile Ser Ser His Gly Ile Arg Phe Ser Leu Asp Leu Glu Gln Leu Ala
 180 185 190
 Asp Asp Ile Asn Leu Asp Ser Val Ser Trp Pro Thr Glu Tyr Leu Asn
 195 200 205
 Ser Thr Met Asp Phe Cys Ser Lys Ala Asp Lys Arg Val Ile Gln Asn
 210 215 220
 Val Gln Asn Leu Arg Thr Gly Thr Tyr Ile Asn Ser Val Gly Lys Arg
 225 230 235 240
 Ser Phe

<210>183

<211>186

<212>PRT

<213>Chlamydia pneumoniae

<400>183

Phe Glu Lys Ala Ile Val Tyr Cys Ile Lys Cys Lys Gln Ile Ile Lys
 1 5 10 15
 Cys Ile Ser Ile Ile His Thr Pro Thr Pro Ala Thr Pro Leu Cys Thr
 20 25 30
 Glu Gly Glu Ile Phe Pro Gly Leu Val Asp Ser Ala Ile Gln Asn Asp
 35 40 45
 Leu Glu Arg Leu Leu Thr Val Lys Lys Arg Pro Asp Ile Ile Arg Glu
 50 55 60
 Tyr Leu Arg Ala Gly Gly Ser Leu Val Thr Thr Tyr Pro Lys Glu Gly
 65 70 75 80
 Gln Arg Leu Arg Ser Pro Glu Gln Leu Arg Val Leu Asp Asp Leu Val
 85 90 95
 Gln Ser Tyr Pro Asn His Leu His Ala Ile Glu Leu Asp Cys Gly Ala
 100 105 110
 Ile Pro Gln Asp Leu Ile Gly Ala Thr Tyr Ile Ile Thr Phe Ala Asp

115 120 125
 Phe Ser Thr Tyr Ile Leu Ser Leu Arg Ser Tyr Gln Ala Asn Ser Pro
 130 135 140
 Ser Asp Asp Thr Trp Gly Ile Trp Phe Gly Ser Ile Asp Asp Pro Val
 145 150 155 160
 Gln Ala Val Ile Ser Phe Leu Lys Asp His Gly Phe Ala Leu Pro Ser
 165 170 175
 Thr Leu Ala Gln Asp Pro Leu Leu Cys Thr Asn Lys
 180 185

<210>184

<211>185

<212>PRT

<213>Chlamydia pneumoniae

<400>184

Leu Cys Phe Lys Cys Ile Tyr Ile Lys Ile Ile Phe Ser Phe Leu Lys
 1 5 10 15
 Gln Leu Met Thr Arg Ser Thr Ile Glu Ser Ser Asp Ser Leu Cys Ser
 20 25 30
 Arg Ser Phe Ser Gln Lys Leu Ser Val Gln Thr Leu Lys Asn Leu Cys
 35 40 45
 Glu Ser Arg Leu Met Lys Ile Thr Ser Leu Val Ile Ala Phe Leu Thr
 50 55 60
 Leu Ile Val Gly Gly Ala Leu Ile Ala Leu Ala Gly Gly Gly Val Leu
 65 70 75 80
 Ser Phe Pro Leu Gly Leu Ile Leu Gly Ser Val Leu Val Leu Phe Ser
 85 90 95
 Ser Ile Tyr Leu Val Ser Cys Cys Lys Phe Phe Thr Leu Lys Glu Met
 100 105 110
 Thr Met Thr Cys Ser Val Lys Ser Lys Ile Asn Ile Trp Phe Glu Lys
 115 120 125
 Gln Arg Asn Lys Asp Ile Glu Lys Ala Leu Glu Asn Pro Asp Leu Xaa
 130 135 140
 Gly Glu Asn Lys Arg Asn Val Gly Asn Arg Ser Ala Arg Asn Gln Leu
 145 150 155 160
 Glu Met Ile Leu His Gly Thr Asp Gly Ile Ile Leu Lys Arg Tyr Met
 165 170 175
 Lys Gly Ala Lys Met Tyr Phe Tyr Leu
 180 185

<210>185

<211>200

<212>PRT

<213>Chlamydia pneumoniae

<400>185

Asn Val Leu Leu Phe Met Asn Trp Val Pro Lys Thr Ile Asp His Val
 1 5 10 15
 Asp Pro Glu Ser Glu Ile Asp Ile Arg Lys Val Val Ser Cys Tyr Lys
 20 25 30
 Leu Ile Lys Glu Cys Gln Pro Glu Phe Arg Ser Leu Ile Ser Glu Leu
 35 40 45
 Leu Gly Val Ile Arg Cys Gly Leu Arg Leu Leu Lys Arg Ser Lys Tyr
 50 55 60
 Gln Glu Gln Ala Arg Thr Val Ser Asp Glu Asp Ala Pro Leu Phe Cys
 65 70 75 80
 Leu Thr Arg Ser Tyr Tyr Gln Asp Gly Tyr Leu Thr Pro Leu Arg Ala
 85 90 95
 Gly Pro Arg Asp Leu Ile Asn His Tyr Ile His Leu Arg Arg Arg Glu
 100 105 110
 Asn Pro Lys His Phe Phe Ser Pro Lys His Pro Cys Tyr Tyr Ala Arg
 115 120 125
 Leu Ala Phe Asn Glu Ser Val Cys Val Tyr Arg Glu Leu Phe Asp Ile
 130 135 140
 Glu Arg Leu Thr Lys Met Tyr Val Glu Gly Asp Tyr Ser Lys Glu Gln
 145 150 155 160
 Glu Lys Asn Leu Gln Ala Ile Leu Ser Phe Val Lys Thr Leu Asp Glu

165 170 175
 Gly Lys Asp Phe Leu Ile Glu His Lys Asp Thr Asp Leu Ile Gly Arg
 180 185 190
 Gly Phe Thr Asp Val Phe Cys Thr
 195 200
 <210>186
 <211>111
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>186
 Asn Leu Trp Ser His Phe Pro Arg Gly Phe Phe Met Leu Pro Phe Cys
 1 5 10 15
 Pro Thr Ile Leu Leu Ala Lys Pro Phe Leu Asn Ser Glu Asn Tyr Gly
 20 25 30
 Leu Glu Arg Leu Ala Ala Thr Val Asp Ser Tyr Phe Asp Leu Gly Gln
 35 40 45
 Ser Gln Ile Val Phe Leu Ser Lys Gln Asp Gln Gly Ile Thr Val Glu
 50 55 60
 Glu Leu Ser Ala Lys Asp Arg Lys Phe Lys Pro Gly Ser Met Asn Cys
 65 70 75 80
 Thr Leu Tyr Thr Glu Asp Pro Ile Leu Pro Ala His Asn Ser Phe Ser
 85 90 95
 Asn Cys Ser Asp Ile Gln Met Arg Thr Pro Ile Ser Pro Ile His
 100 105 110
 <210>187
 <211>276
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>187
 Ser Phe His Ile Glu Phe Thr Ile Gly Glu Asn Asn Met Lys Asn Val
 1 5 10 15
 Gly Ser Glu Cys Ser Gln Pro Leu Val Met Glu Leu Asn Thr Gln Pro
 20 25 30
 Leu Arg Asn Leu Cys Glu Ser Arg Leu Val Lys Ile Thr Ser Phe Val
 35 40 45
 Ile Ala Leu Leu Ala Leu Val Gly Gly Ile Thr Leu Thr Ala Leu Ala
 50 55 60
 Gly Ala Gly Ile Leu Ser Phe Leu Pro Trp Leu Val Leu Gly Ile Val
 65 70 75 80
 Leu Val Val Leu Cys Ala Leu Phe Leu Leu Phe Ser Tyr Lys Phe Cys
 85 90 95
 Pro Ile Lys Glu Leu Gly Val Val Tyr Asn Thr Asp Ser Gln Ile His
 100 105 110
 Gln Trp Phe Gln Lys Gln Arg Asn Lys Asp Leu Glu Lys Ala Thr Glu
 115 120 125
 Asn Pro Glu Leu Phe Gly Glu Asn Arg Ala Glu Asp Asn Asn Arg Ser
 130 135 140
 Ala Arg Ser Gln Val Lys Glu Thr Leu Arg Asp Cys Asp Gly Asn Val
 145 150 155 160
 Leu Lys Lys Ile Tyr Glu Arg Asn Leu Asp Val Leu Leu Phe Met Asn
 165 170 175
 Trp Val Pro Lys Thr Met Asp Asp Val Asp Pro Val Ser Glu Asp Ser
 180 185 190
 Ile Arg Thr Val Ile Ser Cys Tyr Lys Leu Ile Lys Ala Cys Lys Pro
 195 200 205
 Glu Phe Arg Ser Leu Ile Ser Glu Leu Leu Arg Ala Met Gln Ser Gly
 210 215 220
 Leu Gly Leu Leu Ser Arg Cys Ser Arg Tyr Gln Glu Arg Ala Lys Thr
 225 230 235 240
 Val Ser His Lys Asp Ala Pro Leu Phe Cys Pro Thr His Ser Tyr Tyr
 245 250 255
 Arg Asp Gly Tyr Leu Thr Pro Leu Arg Ala Gly Pro Arg Tyr Ile Ile
 260 265 270
 Asn Arg Ala Ile

275

<210>188

<211>358

<212>PRT

<213>Chlamydia pneumoniae

<400>188

Asn Val Arg Lys Asn His Ile Ile Arg Gly Glu Lys Tyr Asn Thr Cys
 1 5 10 15
 Thr Val Ile Ala Phe Val Leu Ser Met Ser Tyr Asp Thr Leu Phe Lys
 20 25 30
 Asn Leu Glu Lys Glu Asp Ser Val His Lys Ile Cys Asn Glu Ile Phe
 35 40 45
 Ala Leu Val Pro Arg Leu Asn Thr Ile Ala Cys Thr Glu Ala Ile Ile
 50 55 60
 Lys Asn Leu Pro Lys Ala Asp Ile His Val His Leu Pro Gly Thr Ile
 65 70 75 80
 Thr Pro Gln Leu Ala Trp Ile Leu Gly Val Lys Asn Gly Phe Leu Lys
 85 90 95
 Trp Ser Tyr Asn Ser Trp Thr Asn His Arg Leu Leu Ser Pro Lys Asn
 100 105 110
 Pro His Lys Gln Tyr Ser Asn Ile Phe Arg Asn Phe Gln Asp Ile Cys
 115 120 125
 His Glu Lys Asp Pro Asp Leu Ser Val Leu Gln Tyr Asn Ile Leu Asn
 130 135 140
 Tyr Asp Phe Asn Ser Phe Asp Arg Val Met Ala Thr Val Gln Gly His
 145 150 155 160
 Arg Phe Pro Pro Gly Gly Ile Gln Asn Glu Glu Asp Leu Leu Leu Ile
 165 170 175
 Phe Asn Asn Tyr Leu Gln Gln Cys Leu Asp Asp Thr Ile Val Tyr Thr
 180 185 190
 Glu Val Gln Gln Asn Ile Arg Leu Ala His Val Leu Tyr Pro Ser Leu
 195 200 205
 Pro Glu Lys His Ala Arg Met Lys Phe Tyr Gln Ile Leu Tyr Arg Ala
 210 215 220
 Ser Gln Thr Phe Ser Lys His Gly Ile Thr Leu Arg Phe Leu Asn Cys
 225 230 235 240
 Phe Asn Lys Thr Phe Ala Pro Gln Ile Asn Thr Gln Glu Pro Ala Gln
 245 250 255
 Glu Ala Val Gln Trp Leu Gln Glu Val Asp Ser Thr Phe Pro Gly Leu
 260 265 270
 Phe Val Gly Ile Gln Ser Ala Gly Ser Glu Ser Ala Pro Gly Ala Cys
 275 280 285
 Pro Lys Arg Leu Ala Ser Gly Tyr Arg Asn Ala Tyr Asp Ser Gly Phe
 290 295 300
 Gly Cys Ala Ala His Ala Gly Glu Gly Ile Glu Thr Arg Thr Ile Phe
 305 310 315 320
 Ser Ser Ala Lys Val Asn Pro Glu Gly Leu Ile Glu Ile Thr Arg Val
 325 330 335
 Thr Phe Ser Ser Leu Lys Arg Lys Gln Pro Ser Ser Leu Pro Ile Arg
 340 345 350
 Val Thr Cys Gln Leu Gly
 355

<210>189

<211>429

<212>PRT

<213>Chlamydia pneumoniae

<400>189

Leu Gln Ser Ala Arg Arg His Leu Asn Thr Ile Phe Ile Leu Asp Phe
 1 5 10 15
 Gly Ser Gln Tyr Thr Tyr Val Leu Ala Lys Gln Val Arg Lys Leu Phe
 20 25 30
 Val Tyr Cys Glu Val Leu Pro Trp Asn Ile Ser Val Gln Cys Leu Lys
 35 40 45
 Glu Arg Ala Pro Leu Gly Ile Ile Leu Ser Gly Gly Pro His Ser Val

50	55	60
Tyr Glu Asn Lys Ala Pro His Leu Asp Pro Gln Ile Tyr Lys Leu Gly		
65	70	75
Ile Pro Ile Leu Ala Ile Cys Tyr Gly Met Gln Leu Met Ala Arg Asp		
85	90	95
Phe Gly Gly Thr Val Ser Pro Gly Val Gly Glu Phe Gly Tyr Thr Pro		
100	105	110
Ile His Leu Tyr Pro Cys Glu Leu Phe Lys His Ile Val Asp Cys Glu		
115	120	125
Ser Leu Asp Thr Glu Ile Arg Met Ser His Arg Asp His Val Thr Thr		
130	135	140
Ile Pro Glu Gly Phe Asn Val Ile Ala Ser Thr Ser Gln Cys Ser Ile		
145	150	155
Ser Gly Ile Glu Asn Thr Lys Gln Arg Leu Tyr Gly Leu Gln Phe His		
165	170	175
Pro Glu Val Ser Asp Ser Thr Pro Thr Gly Asn Lys Ile Leu Glu Thr		
180	185	190
Phe Val Gln Glu Ile Cys Ser Ala Pro Thr Leu Trp Asn Pro Leu Tyr		
195	200	205
Ile Gln Gln Asp Leu Val Ser Lys Ile Gln Asp Thr Val Ile Glu Val		
210	215	220
Phe Asp Glu Val Ala Gln Ser Leu Asp Val Gln Trp Leu Ala Gln Gly		
225	230	235
Thr Ile Tyr Ser Asp Val Ile Glu Ser Ser Arg Ser Gly His Ala Ser		
245	250	255
Glu Val Ile Lys Ser His His Asn Val Gly Gly Leu Pro Lys Asn Leu		
260	265	270
Lys Leu Lys Leu Val Glu Pro Leu Arg Tyr Leu Phe Lys Asp Glu Val		
275	280	285
Arg Ile Leu Gly Glu Ala Leu Gly Leu Ser Ser Tyr Leu Leu Asp Arg		
290	295	300
His Pro Phe Pro Gly Pro Gly Leu Thr Ile Arg Val Ile Gly Glu Ile		
305	310	315
Leu Pro Glu Tyr Leu Ala Ile Leu Arg Arg Ala Asp Leu Ile Phe Ile		
325	330	335
Glu Glu Leu Arg Lys Ala Lys Leu Tyr Asp Lys Ile Ser Gln Ala Phe		
340	345	350
Ala Leu Phe Leu Pro Ile Lys Ser Val Ser Val Lys Gly Asp Cys Arg		
355	360	365
Ser Tyr Gly Tyr Thr Ile Ala Leu Arg Ala Val Glu Ser Thr Asp Phe		
370	375	380
Met Thr Gly Arg Trp Ala Tyr Leu Pro Cys Asp Val Leu Ser Ser Cys		
385	390	395
Ser Ser Arg Ile Ile Asn Glu Ile Pro Glu Val Ser Arg Val Val Tyr		
405	410	415
Asp Ile Ser Asp Lys Pro Pro Ala Thr Ile Glu Trp Glu		
420	425	

<210>190

<211>266

<212>PRT

<213>Chlamydia pneumoniae

<400>190

Ala Pro Ile Gly Ala Ala Ile Gly Ile Gly Pro Leu Gly Ile Ser Arg	
1	5
Ala His His Leu Val Glu Ala Gly Ala Asn Val Leu Val Ile Asp Thr	
20	25
Ala His Ala His Ser Lys Gly Val Phe Gln Thr Val Leu Glu Ile Lys	
35	40
Ser Gln Phe Pro Gln Ile Ser Leu Val Val Gly Asn Leu Val Thr Ala	
50	55
Glu Ala Ala Val Ser Leu Ala Glu Ile Gly Val Asp Ala Val Lys Val	
65	70
Gly Ile Gly Pro Gly Ser Ile Cys Thr Thr Arg Ile Val Ser Gly Val	
85	90

Gly Tyr Pro Gln Ile Thr Ala Ile Thr Asn Val Ala Lys Ala Leu Lys
 100 105 110
 Asn Ser Ala Val Thr Val Ile Ala Asp Gly Arg Ile Arg Tyr Ser Gly
 115 120 125
 Asp Val Val Lys Ala Leu Ala Ala Gly Ala Asp Cys Val Met Leu Gly
 130 135 140
 Ser Leu Leu Ala Gly Thr Asp Glu Ala Pro Gly Asp Ile Val Ser Ile
 145 150 155
 Asp Glu Lys Leu Phe Lys Arg Tyr Arg Gly Met Gly Ser Leu Gly Ala
 165 170 175
 Met Lys Gln Gly Ser Ala Asp Arg Tyr Phe Gln Thr Cln Gly Gln Lys
 180 185 190
 Lys Leu Val Pro Gly Gly Val Glu Gly Leu Val Ala Tyr Lys Gly Ser
 195 200 205
 Val His Asp Val Leu Tyr Gln Ile Leu Gly Gly Ile Arg Ser Gly Met
 210 215 220
 Gly Tyr Val Gly Ala Glu Thr Leu Lys Asp Leu Lys Thr Lys Ala Ser
 225 230 235 240
 Phe Val Arg Ile Thr Glu Ser Gly Arg Ala Glu Ser His Ile His Asn
 245 250 255
 Ile Tyr Lys Val Gln Pro Thr Leu Asn Tyr
 260 265

<210>191

<211>170

<212>PRT

<213>Chlamydia pneumoniae

<400>191

Lys Ile Phe Ile Trp Phe Val Glu Lys Ile Val Ile Leu Ser Met Ile
 1 5 10 15
 Met Thr Thr Ile Ser Asn Ser Pro Ser Pro Ala Leu Asn Pro Glu Leu
 20 25 30
 Ser Leu Ile Pro Pro Pro Thr Leu Val Ser Ser Gly Thr Gln Thr Ser
 35 40 45
 Leu Ala Tyr Thr Ile Pro Ala Gln Gly Arg Arg Ser Thr Leu Arg Ile
 50 55 60
 Ile Leu Asp Ile Phe Ile Ile Ile Leu Gly Leu Ala Thr Ile Ile Ser
 65 70 75 80
 Thr Phe Ile Val Ile Phe Phe Leu Asn Gly Leu Asn Leu Leu Ser Thr
 85 90 95
 Pro Ser Ile Ile Ser Ser Ser Cys Leu Ile Ile Val Gly Leu Leu Phe
 100 105 110
 Leu Ile Met Gly Leu Tyr Phe Met Ile Ser Ser Leu Asp Glu Gly Leu
 115 120 125
 Val Gly Leu Leu Gln Lys Glu Leu Ser Gln Ala Glu Glu Arg Glu Glu
 130 135 140
 Glu Tyr Ile Gln Glu Ile Glu Ala Leu Arg Gly Ala Pro Arg Ala Glu
 145 150 155 160
 Ser Pro Thr Glu Ser Pro Ser Thr Trp Leu
 165 170

<210>192

<211>140

<212>PRT

<213>Chlamydia pneumoniae

<400>192

Leu Leu Leu Ala Cys Phe Gln Phe Leu Leu Arg Arg Arg Asp Met Glu
 1 5 10 15
 Gln Pro Asn Cys Val Ile Gln Asp Thr Thr Thr Val Leu Tyr Ala Leu
 20 25 30
 Asn Ser Phe Asp Pro Arg Leu Ser Asp Asp Thr His Arg Leu Gly Lys
 35 40 45
 Gln Ser Pro Leu Glu Ala Glu Asn Ala Leu Gly Glu Phe Ile Glu Gly
 50 55 60
 Leu Asp Thr Asn Ser Phe Pro Leu Glu Glu Val Ala Ile Pro Ile Leu
 65 70 75 80

Pro Gly Tyr His Pro Lys Phe Tyr Leu Ser Phe Ile Asp Arg Asp Asp
 85 90 95
 Gln Gly Val His Tyr Glu Val Leu Asp Gly Val Phe Leu Lys Thr Val
 100 105 110
 Ala Ala Cys Ile Ile Glu Asn Ser Phe Leu Thr Asp Ser Met Ser Pro
 115 120 125
 Glu Leu Leu Ser Glu Val Lys Glu Ala Leu Lys Arg
 130 135 140

<210>193

<211>416

<212>PPT

<213>Chlamydia pneumoniae

<400>193

Asn Asp Asp Asp Pro Met Asp Glu Ser Asp Gly Glu Glu Ala Ser Lys
 1 5 10 15
 Asp Ser Ala Phe Ser Ala Ser Phe Ser Tyr Glu Phe Val Lys Ser Ser
 20 25 30
 Thr Arg Glu Ser Lys Asn Thr Val Thr His Ser Thr Ala Ser Arg Thr
 35 40 45
 Leu Tyr Ile Leu Arg Gln Asp Cys Ser Tyr Asp Pro Arg Ala Leu Lys
 50 55 60
 Val Asp Asp Glu Phe Arg Tyr Trp Val Glu Lys Arg Leu Asp Ala Lys
 65 70 75 80
 Asn Pro Asp Ser Leu Asn Ala Phe Val Lys Glu Val Gly Thr His Tyr
 85 90 95
 Val Ala Ser Val Thr Tyr Gly Gly Ile Gly Phe Gln Val Leu Lys Met
 100 105 110
 Ser Tyr Leu Gln Val Glu Glu Leu Glu Lys Glu Lys Ile Ser Ile Ser
 115 120 125
 Val Ala Ala Ala Ser Ser Leu Leu Lys Ser Lys Thr Ser Asn Ala Thr
 130 135 140
 Glu Lys Gly Tyr Ser Ser Tyr Gln Ser Glu Ser Ser Ala Gln Thr Val
 145 150 155 160
 Phe Leu Gly Gly Thr Val Leu Pro Asp Leu Gln Gln Asp Lys Leu Asp
 165 170 175
 Phe Lys Asp Trp Ser Glu Ser Ile Pro Asn Glu Pro Ile Pro Leu Ala
 180 185 190
 Ile Ser Val Ser Ser Ile Thr Asp Leu Ile Ile Pro Glu Leu Phe Pro
 195 200 205
 Ser Glu Asp Ala Gln Val Leu Ser Gln Lys Lys Ser Ala Leu Gly Gln
 210 215 220
 Val Ile Leu Asn Tyr Leu Glu Ser His Lys Pro Lys Glu Glu Gly Pro
 225 230 235 240
 Lys Pro Val Gln Ile Thr Ser Gly Phe Asn Ser Ser Ser Val Phe
 245 250 255
 Thr Leu Gln Ala Ala Lys Ala Pro Lys Thr Val Ser Phe Pro Tyr Ile
 260 265 270
 Asp Tyr Trp Ser Thr Ile Pro Tyr Leu Phe Pro Thr Leu Lys Glu Thr
 275 280 285
 Ser Gly Ala Gln Pro Leu Ser Phe Tyr Leu Arg Phe Asp Asp Ile Phe
 290 295 300
 Glu Gln Gln Asn Leu Val His Asn Thr Ser Tyr Ile Leu Ala Ser Thr
 305 310 315 320
 Ser Val Arg Leu Gly Tyr Phe Gly Asp Ser Tyr Arg Asp Tyr Asp Ala
 325 330 335
 Leu Ser Phe Tyr Gly Ser Trp Pro Gln Ala Tyr Phe Asp Trp Ala Gly
 340 345 350
 Tyr Lys Asp Arg Cys Thr Trp Thr Leu Glu Lys Leu Asn Thr Thr Gly
 355 360 365
 Asp Leu Phe Ile Arg Ser Gly Asp Glu Ile Arg Leu Lys His Asn Thr
 370 375 380
 Ser Gly Lys Tyr Leu Ala Thr Thr Ser Met Ser Asp Gly Tyr Gln Thr
 385 390 395 400
 Leu Thr Cys Thr Thr Gln Thr Ser Asp Ser Val Phe Ile Ile Thr Val

<210>194

<211>303

<212>PRT

<213>Chlamydia pneumoniae

<400>194

Val Gly Gln Lys Arg Ala Asn Xaa Ser Lys Phe Ile Phe Leu Ile Ser
 1 5 10 15
 Glu Glu Ser Met Lys Gln Pro Met Ser Leu Ile Phe Ser Ser Val Cys
 20 25 30
 Leu Gly Leu Gly Leu Gly Ser Leu Ser Ser Cys Asn Gln Lys Pro Ser
 35 40 45
 Trp Asn Tyr His Asn Thr Ser Thr Ser Glu Glu Phe Phe Val His Gly
 50 55 60
 Asn Lys Ser Val Ser Gln Leu Pro His Tyr Pro Ser Ala Phe Arg Thr
 65 70 75 80
 Thr Gln Ile Phe Ser Glu Glu His Asn Asp Pro Tyr Val Val Ala Lys
 85 90 95
 Thr Asp Glu Glu Ser Arg Lys Ile Trp Arg Glu Ile His Lys Asn Leu
 100 105 110
 Lys Ile Lys Gly Ser Tyr Ile Pro Ile Ser Thr Tyr Gly Ser Leu Met
 115 120 125
 His Pro Lys Ser Ala Ala Leu Thr Leu Lys Thr Tyr Arg Pro His Pro
 130 135 140
 Ile Trp Ile Asn Gly Tyr Glu Arg Ser Phe Asn Ile Asp Thr Gly Lys
 145 150 155 160
 Tyr Leu Lys Asn Gly Ser Arg Arg Arg Thr Ser His Asp Gly Pro Lys
 165 170 175
 Asn Arg Ala Val Leu Asn Leu Ile Lys Ser Ser Gly Arg Arg Cys Asn
 180 185 190
 Ala Ile Gly Leu Glu Met Thr Glu Glu Asp Phe Val Ile Ala Arg Arg
 195 200 205
 Arg Glu Gly Val Tyr Ser Leu Tyr Pro Val Glu Val Cys Ser Tyr Pro
 210 215 220
 Gln Gly Asn Pro Phe Val Ile Ala Tyr Ala Trp Ile Ala Asp Glu Ser
 225 230 235 240
 Ala Cys Ser Lys Glu Val Leu Pro Val Lys Gly Tyr Tyr Ser Leu Val
 245 250 255
 Trp Glu Ser Val Ser Ser Ser Asp Ser Leu Asn Ala Phe Gly Asp Ser
 260 265 270
 Phe Ala Glu Asp Tyr Leu Arg Ser Thr Phe Leu Ala Asn Gly Thr Ser
 275 280 285
 Ile Leu Cys Val His Glu Ser Tyr Lys Lys Val Pro Pro Gln Pro
 290 295 300

<210>195

<211>88

<212>PRT

<213>Chlamydia pneumoniae

<400>195

Val Lys Glu Tyr Leu Asp Phe Leu Val Gln Arg Asn Val Glu Arg Asp
 1 5 10 15
 Pro Gln Thr Lys Arg His Cys Thr Val Ser Gln Lys Phe Gly Gly Glu
 20 25 30
 Ser Ile Asp Ala Lys Thr Thr Thr Gly Gln Leu Phe His Ile Ala Gly
 35 40 45
 Lys Thr Glu Pro Gly His Gly Lys Leu Cys Leu Gly Glu Ser Ile Leu
 50 55 60
 Lys Gln Leu Leu Ala Leu Gly Ile Ile Thr Gly Tyr Glu Asn Arg Glu
 65 70 75 80
 Arg Glu Val Trp Val Tyr Leu Asp
 85

<210>196

<211>203

<212>PRT

<213>Chlamydia pneumoniae

<400>196

Thr Ser Leu His Lys Ile Leu Asp Cys Lys Tyr Lys Pro Val Phe Ile
 1 5 10 15
 Gln Asn Thr Val Ala Ser Glu Thr Tyr Pro Ser Gln Ile Leu His Ala
 20 25 30
 Gln Arg Glu Val Arg Asp Ala Tyr Phe Asn Gln Ala Asp Cys His Pro
 35 40 45
 Ala Arg Ala Asn Gln Ile Leu Glu Ala Lys Lys Ile Cys Leu Leu Asp
 50 55 60
 Val Tyr His Thr Asn His Tyr Ser Val Phe Thr Phe Cys Val Asp Asn
 65 70 75 80
 Tyr Pro Asn Leu Arg Phe Thr Phe Val Ser Ser Lys Asn Asn Glu Met
 85 90 95
 Asn Gly Leu Ser Asn Pro Leu Asp Asn Val Leu Val Glu Ala Met Val
 100 105 110
 Arg Arg Thr His Ala Arg Asn Leu Ala Ala Cys Lys Ile Arg Asn
 115 120 125
 Ile Glu Val Pro Arg Val Val Gly Leu Asp Leu Arg Ser Gly Ile Leu
 130 135 140
 Ile Ser Lys Leu Glu Leu Lys Gln Pro Gln Phe Gln Ser Leu Thr Glu
 145 150 155 160
 Asp Phe Val Asn His Ser Thr Asn Gln Glu Glu Ala Arg Val His Gln
 165 170 175
 Lys His Val Leu Leu Ile Ser Leu Ile Leu Leu Cys Lys Gln Ala Ala
 180 185 190
 Leu Glu Ser Phe Gln Glu Lys Lys Arg Ser Ser
 195 200

<210>197

<211>454

<212>PRT

<213>Chlamydia pneumoniae

<400>197

Met Lys Lys Val Leu Ile Ala Asn Arg Gly Glu Ile Ala Val Arg Ile
 1 5 10 15
 Ile Arg Ala Cys His Asp Leu Gly Leu Ser Thr Val Ala Val Tyr Ser
 20 25 30
 Leu Ala Asp Gln Glu Ala Leu His Val Leu Leu Ala Asp Glu Ala Ile
 35 40 45
 Cys Ile Gly Glu Pro Gln Ala Ala Lys Ser Tyr Leu Lys Ile Ser Asn
 50 55 60
 Ile Leu Ala Ala Cys Glu Ile Thr Gly Ala Asp Ala Val His Pro Gly
 65 70 75 80
 Tyr Gly Phe Leu Ser Glu Asn Ala Asn Phe Ala Ser Ile Cys Glu Ser
 85 90 95
 Cys Gly Leu Thr Phe Ile Gly Pro Ser Ser Glu Ser Ile Ala Met Met
 100 105 110
 Gly Asp Lys Ile Ala Ala Lys Ser Leu Ala Lys Lys Ile Lys Cys Pro
 115 120 125
 Val Ile Pro Gly Ser Glu Gly Ile Ile Glu Asp Glu Ser Glu Gly Leu
 130 135 140
 Lys Ile Ala Glu Lys Ile Gly Phe Pro Ile Val Ile Lys Ala Val Ala
 145 150 155 160
 Gly Gly Gly Gly Arg Gly Ile Arg Ile Val Lys Glu Lys Asp Glu Phe
 165 170 175
 Tyr Arg Ala Phe Ser Ala Ala Arg Ala Glu Ala Glu Ala Gly Phe Asn
 180 185 190
 Asn Pro Asn Val Tyr Ile Glu Lys Phe Ile Glu Asn Pro Arg His Leu
 195 200 205
 Glu Ile Gln Val Ile Gly Asp Thr His Gly Asn Tyr Val His Leu Gly
 210 215 220
 Glu Arg Asp Cys Thr Il Cln Arg Arg Arg Gln Lys Leu Ile Glu Glu
 225 230 235 240
 Thr Pro Ser Pro Ile Leu Asn Ala Glu Ile Arg Val Lys Val Gly Lys

245 250 255
 Val Ala Val Asp Leu Ala Arg Ser Ala Gly Tyr Phe Ser Val Gly Thr
 260 265 270
 Val Glu Phe Leu Leu Asp Lys Asp Lys Lys Phe Tyr Phe Met Glu Met
 275 280 285
 Asn Thr Arg Ile Gln Val Glu His Thr Ile Thr Glu Glu Val Thr Gly
 290 295 300
 Ile Asp Leu Val Lys Glu Gln Ile His Val Ala Met Gly Asn Lys Leu
 305 310 315 320
 Pro Trp Lys Gln Lys Asn Ile Glu Phe Ser Gly His Ile Ile Gln Cys
 325 330 335
 Arg Ile Asn Ala Glu Asp Pro Thr Asn Asn Phe Ser Pro Ser Pro Gly
 340 345 350
 Arg Leu Asp Tyr Tyr Leu Pro Pro Ala Gly Pro Ser Ile Arg Val Asp
 355 360 365
 Gly Ala Cys Tyr Ser Gly Tyr Ala Ile Pro Pro Tyr Tyr Asp Ser Met
 370 375 380
 Ile Ala Lys Val Ile Ala Lys Gly Lys Asn Arg Glu Glu Ala Ile Ala
 385 390 395 400
 Ile Met Lys Arg Ala Leu Lys Glu Phe His Ile Gly Gly Val Gln Ser
 405 410 415
 Thr Ile Pro Phe His Gln Phe Met Leu Asp Asn Pro Lys Phe Leu Glu
 420 425 430
 Ser Asn Tyr Asp Ile Asn Tyr Ile Asp Asn Leu Leu Ala Gln Gly Asn
 435 440 445
 Ser Phe Phe Lys Glu Phe
 450
 <210>198
 <211>167
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>198
 Met Asp Leu Lys Gln Ile Glu Lys Leu Met Ile Ala Met Gly Arg Asn
 1 5 10 15
 Gly Met Lys Arg Phe Ala Ile Lys Arg Glu Gly Leu Glu Leu Glu Leu
 20 25 30
 Glu Arg Asp Thr Arg Glu Gly Asn Arg Gln Glu Pro Val Phe Tyr Asp
 35 40 45
 Ser Arg Leu Phe Ser Gly Phe Ser Gln Glu Arg Pro Ile Pro Thr Asp
 50 55 60
 Pro Lys Lys Asp Thr Ile Lys Glu Thr Thr Thr Glu Asn Ser Glu Thr
 65 70 75 80
 Ser Thr Thr Thr Ser Ser Gly Asp Phe Ile Ser Ser Pro Leu Val Gly
 85 90 95
 Thr Phe Tyr Gly Ser Pro Ala Pro Asp Ser Pro Ser Phe Val Lys Pro
 100 105 110
 Gly Asp Ile Val Ser Glu Asp Thr Ile Val Cys Ile Val Glu Ala Met
 115 120 125
 Lys Val Met Asn Glu Val Lys Ala Gly Met Ser Gly Arg Val Leu Glu
 130 135 140
 Val Leu Ile Thr Asn Gly Asp Pro Val Gln Phe Gly Ser Lys Leu Phe
 145 150 155 160
 Arg Ile Ala Lys Asp Ala Ser
 165
 <210>199
 <211>185
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>199
 Met Val Leu Ser Ser Ser Gln Leu Ser Val Gly Met Phe Ile Ser Thr Lys
 1 5 10 15
 Asp Gly Leu Tyr Lys Val Thr Ser Val Ser Lys Val Ala Gly Pro Lys
 20 25 30
 Gly Glu Ser Phe Ile Lys Val Ala Leu Gln Ala Ala Asp Ser Asp Val

Pro	Ile	Lys	Asp	Lys	Ile	Leu	Met	Ser	Ser	Pro	Val	Asn	Asn	Thr	Pro
1				5					10					15	
Ser	Ala	Pro	Asn	Ile	Pro	Ile	Pro	Ala	Pro	Thr	Thr	Pro	Gly	Ile	Pro
			20					25					30		
Thr	Thr	Lys	Pro	Arg	Ser	Ser	Phe	Ile	Glu	Lys	Val	Ile	Ile	Val	Ala

35 40 45
 Lys Tyr Ile Leu Phe Ala Ile Ala Ala Thr Ser Gly Ala Leu Gly Thr
 50 55 60
 Ile Leu Gly Leu Ser Gly Ala Leu Thr Pro Gly Ile Gly Ile Ala Leu
 65 70 75 80
 Leu Val Ile Phe Phe Val Ser Met Val Leu Leu Gly Leu Ile Leu Lys
 85 90 95
 Asp Ser Ile Ser Gly Gly Glu Glu Arg Arg Leu Arg Glu Glu Val Ser
 100 105 110
 Arg Phe Thr Ser Glu Asn Gln Arg Leu Thr Val Ile Thr Thr Thr Leu
 115 120 125
 Glu Thr Glu Val Lys Asp Leu Lys Ala Ala Lys Asp Gln Leu Thr Leu
 130 135 140
 Glu Ile Glu Ala Phe Arg Asn Glu Asn Gly Asn Leu Lys Thr Thr Ala
 145 150 155 160
 Glu Asp Leu Glu Glu Gln Val Ser Lys Leu Ser Glu Gln Leu Glu Ala
 165 170 175
 Leu Glu Arg Ile Asn Gln Leu Ile Gln Ala Asn Ala Gly Asp Ala Gln
 180 185 190
 Glu Ile Ser Ser Glu Leu Lys Lys Leu Ile Ser Gly Trp Asp Ser Lys
 195 200 205
 Val Val Glu Gln Ile Asn Thr Ser Ile Gln Ala Leu Lys Val Leu Leu
 210 215 220
 Gly Gln Glu Trp Val Gln Glu Ala Gln Thr His Val Lys Ala Met Gln
 225 230 235 240
 Glu Gln Ile Gln Ala Leu Gln Ala Glu Ile Leu Gly Met His Asn Gln
 245 250 255
 Ser Thr Ala Leu Gln Lys Ser Val Glu Asn Leu Leu Val Gln Asp Gln
 260 265 270
 Ala Leu Thr Arg Val Val Gly Glu Leu Leu Glu Ser Glu Asn Lys Leu
 275 280 285
 Ser Gln Ala Cys Ser Ala Leu Arg Gln Glu Ile Glu Lys Leu Ala Gln
 290 295 300
 His Glu Thr Ser Leu Gln Gln Arg Ile Asp Ala Met Leu Ala Gln Glu
 305 310 315 320
 Gln Asn Leu Ala Glu Gln Val Thr Ala Leu Glu Lys Met Lys Gln Glu
 325 330 335
 Ala Gln Lys Ala Glu Ser Glu Phe Ile Ala Cys Val Arg Asp Arg Thr
 340 345 350
 Phe Gly Arg Arg Glu Thr Pro Pro Pro Thr Thr Pro Val Val Glu Gly
 355 360 365
 Asp Glu Ser Gln Glu Glu Asp Glu Gly Gly Thr Pro Pro Val Ser Gln
 370 375 380
 Pro Ser Ser Pro Val Asp Arg Ala Thr Gly Asp Gly Gln
 385 390 395
 <210>202
 <211>118
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>202
 Phe Ser Leu Val Asn Arg Glu Thr Ser Ser Leu Ser Leu Arg Ser Ser
 1 5 10 15
 Pro Pro Leu Ile Glu Ser Leu Arg Ile Lys Pro Lys Ser Thr Ile Glu
 20 25 30
 Thr Lys Lys Ile Thr Arg Arg Ala Ile Pro Ile Pro Gly Val Ser Ala
 35 40 45
 Pro Asp Arg Pro Arg Ile Val Pro Ser Ala Pro Asp Val Ala Ala Ile
 50 55 60
 Ala Asn Ser Met Tyr Leu Ala Thr Met Ile Thr Phe Ser Met Lys Leu
 65 70 75 80
 Glu Arg Gly Phe Val Val Gly Ile Pro Gly Val Val Gly Ala Gly Ile
 85 90 95
 Gly Met Phe Gly Ala Glu Gly Val Leu Phe Thr Gly Asp Asp Ile Arg
 100 105 110

Ile Leu Ser Leu Ile Gly
115

<210>203

<211>217

<212>PRT

<213>Chlamydia pneumoniae

<400>203

Met His Ser Lys Phe Leu Ser Arg Arg Lys Lys Asn Ser Ser His Lys
1 5 10 15
Glu Glu Thr Ser Trp Asp Cys Ile Ala Ser Ser Tyr Asn Lys Ile Val
20 25 30
Gln Asp Lys Gly His Tyr Tyr His Arg Glu Thr Ile Leu Pro Gln Leu
35 40 45
Leu Pro Ser Leu Thr Leu Gly Ser Lys Ser Ser Val Leu Asp Ile Gly
50 55 60
Cys Gly Gln Gly Phe Leu Glu Arg Ala Leu Pro Lys Glu Cys Arg Tyr
65 70 75 80
Leu Gly Ile Asp Ile Ser Ser Arg Leu Ile Ala Leu Ala Lys Lys Met
85 90 95
Arg Ser Val Asn Ser His Gln Phe Lys Val Ala Asp Leu Ser Lys Arg
100 105 110
Leu Glu Phe Val Glu Pro Thr Leu Phe Ser His Ala Val Ala Ile Leu
115 120 125
Ser Leu Gln Asn Met Glu Phe Pro Gly Glu Ala Ile Arg Asn Thr Ala
130 135 140
Thr Leu Leu Glu Pro Leu Gly Gln Phe Phe Ile Val Leu Asn His Pro
145 150 155 160
Cys Phe Arg Ile Pro Arg Ala Ser Ser Trp His Tyr Asp Glu Asn Lys
165 170 175
Lys Ser Tyr Leu Ser Ser Tyr Arg Ser Leu Ser Leu Pro Asn Glu Asn
180 185 190
Pro Asn His Gly Ser Pro Arg Thr Lys Arg Phe Ala Phe Tyr Pro Leu
195 200 205
Leu Ser Leu Ser Ser Lys Leu Leu Val
210 215

<210>204

<211>417

<212>PRT

<213>Chlamydia pneumoniae

<400>204

Lys Thr Xaa Asn Ser Cys Ile Met Phe Arg Lys Leu Phe Pro Phe Ser
1 5 10 15
Lys Lys Lys Thr Gly Gln Lys Gln Arg Leu Arg Asn Asn Gly Leu Leu
20 25 30
Gln Ala Ile Ile Gln Ser Ile Lys Val Leu Leu His Asn Glu Ala Ser
35 40 45
Lys Glu Ala Cys Val Leu Ser Tyr Tyr Gly Leu Leu Thr Cys Val Pro
50 55 60
Ile Leu Val Phe Phe Leu Arg Leu Ser Gln His Leu Phe Thr Asn Leu
65 70 75 80
Asn Trp Lys Glu Trp Leu Ile Ile Lys Phe Pro Asp Tyr Lys Lys Pro
85 90 95
Xle Val Ala Ile Val Glu Ala Ala Tyr His Ala Thr Glu Ser Asn Ile
100 105 110
Gly Leu Val Leu Val Gly Ser Phe Phe Val Phe Cys Trp Ala Gly Il
115 120 125
Leu Met Leu Leu Ser Leu Glu Asp Gly Leu Asn Lys Ile Phe Arg Thr
130 135 140
Ser Trp Thr Pro Ile Ser Leu Lys Arg Leu Val Ser Tyr Phe Val Ile
145 150 155 160
Thr Leu Val Ser Pro Met Ile Phe Ile Ile Val Cys Gly Ser Trp Ile
165 170 175
Tyr Ile Thr Gln Ile Met Pro Ile Gln Tyr Ala Lys Leu Phe Ser Leu
180 185 190

Ser His Ser Met Thr Ala Leu Tyr Phe Ile Ser Arg Phe Val Pro Tyr
 195 200 205
 Leu Leu Leu Tyr Leu Ala Leu Phe Cys Cys Tyr Ala Phe Leu Pro Arg
 210 215 220
 Val Ala Ile Gln Lys Thr Ser Ala Leu Ile Ser Thr Leu Ile Ile Gly
 225 230 235 240
 Ser Val Trp Ile Val Phe Gln Lys Ala Phe Ser Leu Gln Val Ser
 245 250 255
 Ile Phe Asn Tyr Ser Phe Thr Tyr Gly Ala Leu Val Ala Leu Pro Ser
 260 265 270
 Phe Leu Leu Leu Tyr Ile Tyr Thr Met Ile Tyr Leu Phe Gly Gly
 275 280 285
 Ala Leu Thr Phe Ile Ile Gln Asn Arg Gly Cys Thr Phe Ile Phe Leu
 290 295 300
 Gly Asp Lys Ile Leu Pro Ser Cys Tyr Leu Gln Leu Ile Thr Ser Thr
 305 310 315 320
 Tyr Ile Leu Ala Leu Thr Thr Arg Gln Phe Asn Glu Gly Leu Ser Pro
 325 330 335
 Leu Thr Ala Gln Phe Ile Ala Lys Gln Ser Lys Val Pro Ile Gly Glu
 340 345 350
 Val Ser Gln Cys Leu Asp Val Leu Glu Lys Glu Gly Phe Leu Phe Pro
 355 360 365
 Tyr Asn Asn Gly Tyr Gln Pro Val Phe Asn Phe Ser Glu Leu Thr Ile
 370 375 380
 Lys Asp Ile Ala Asp Lys Leu Leu His Arg Glu Ile Phe Lys Lys Phe
 385 390 395 400
 Asn Pro Asp Leu Gly Ile Thr Phe Ile Glu Asn Ser Phe Gln Asn Ile
 405 410 415
 Phe Asn Gln Ala Ser Lys Asn Lys Glu Asn Leu Thr Leu Ser Glu Ile
 420 425 430
 Ala Arg Arg Ile Lys
 435

<210>205

<211>313

<212>PRT

<213>Chlamydia pneumoniae

<400>205

Ala Asn Gln Met Lys Arg Arg Ser Trp Leu Lys Ile Leu Gly Ile Cys
 1 5 10 15
 Leu Gly Ser Ser Ile Val Leu Gly Phe Leu Ile Phe Leu Pro Gln Leu
 20 25 30
 Leu Ser Thr Glu Ser Gly Lys Tyr Leu Val Phe Ser Leu Ile His Lys
 35 40 45
 Glu Ser Gly Leu Ser Cys Ser Ala Glu Glu Leu Lys Ile Ser Trp Phe
 50 55 60
 Gly Arg Gln Thr Ala Arg Lys Ile Lys Leu Thr Gly Glu Ala Lys Asp
 65 70 75 80
 Glu Val Xaa Ser Ala Glu Lys Phe Glu Leu Asp Gly Ser Leu Leu Arg
 85 90 95
 Leu Leu Ile Tyr Lys Lys Pro Lys Gly Ile Thr Leu Ser Gly Trp Ser
 100 105 110
 Leu Lys Ile Asn Glu Pro Ala Ser Ile Asp His Pro Ser Val Ser His
 115 120 125
 Leu Asp Pro Gly Ser Leu Leu Thr Tyr Leu Asn Asp Cys Lys Ile Ile
 130 135 140
 Ser Glu His Gly Phe Ile Thr Met Lys Thr Val Ser Gly Ser Ser Leu
 145 150 155 160
 Ser Val Ser Gly Xaa Tyr Leu Glu Xaa Ser Ser Glu Lys Phe Met Thr
 165 170 175
 Lys Cys Val Val Ser Glu Asp Gln Gln Ser Gly Asn Ile Phe Ile Glu
 180 185 190
 Ser Val Leu Ser Pro Asp Val Ser Ile Ser Ala Gln Phe Ser Ser Val
 195 200 205
 Pro Val Ala Phe Phe Lys Ile Phe Ile Ala Ser Pro Phe Trp Asp His

210 215 220
 Leu Leu Ser Tyr Glu Asp Ile Ile Asn Leu Ser Ala Glu Ala Thr His
 225 230 235 240
 Thr Asn Asp Gly Lys Ile Ser Met Thr Ala Ser Gly Glu Gly Asn Gln
 245 250 255
 Ile Gln Met Lys Leu Gln Gly His Ile His Lys Ser Thr Phe Tyr Ile
 260 265 270
 Val Glu Gly Ser Ser Ser Phe Ile Glu Leu Lys Pro Glu Leu Ala Ser
 275 280 285
 Ala Leu Cys Asn Gln Ile Ile Pro Leu Ser Thr Pro Ile Thr Ser Lys
 290 295 300
 Gln Ile Xaa Cys Tyr Gly Leu Leu Cys
 305 310

<210>206

<211>275

<212>PRT

<213>Chlamydia pneumoniae

<400>206

Asn Leu Asn Leu Ser Ser Pro Gln Leu Phe Ala Thr Arg Ser Phe Arg
 1 5 10 15
 Cys Pro His Pro Leu Leu Val Ser Lys Ser Xaa Ala Thr Val Ser Tyr
 20 25 30
 Ala Lys Ile Pro Leu Asp Ile Thr Lys Trp Lys His Ile Glu Ile Thr
 35 40 45
 Ser Gln Ala Gln Leu Pro Glu Val Ala Ile His Pro Lys Asp Pro Asn
 50 55 60
 Leu Ala Leu Gln Leu Arg Asp Thr Lys Leu Gly Ile Lys Lys Thr Glu
 65 70 75 80
 Lys Xaa Ser Asp Ile Arg Tyr Ser Ser Ser Thr Val Leu Gly Gly Ala
 85 90 95
 Ser Pro Ser His Leu Asn Gly Leu Ile Ser Ile Asp Asn Lys Lys His
 100 105 110
 Leu Thr Lys Phe Arg Leu Gln Gln Ala Gln Leu Pro His Thr Tyr Leu
 115 120 125
 Arg Ala Ile Phe Pro Gln Pro Phe Val Ile Asn Val Pro Leu Asp Val
 130 135 140
 Ala Tyr Tyr Ser Leu Asn Ile Glu Gly Thr Tyr Lys Asn Ala His Leu
 145 150 155 160
 Glu Ala Asp Ala Ile Leu Asp Asn Pro Leu Leu Lys Leu Ser Cys Ser
 165 170 175
 Met Ser Gly Ala Trp Lys Asn Phe Leu Phe Lys Gly Gln Gly Thr Tyr
 180 185 190
 His Phe Asn Lys Lys Trp Gln Glu Ile Leu Ser Pro His Phe Ser Tyr
 195 200 205
 Ala Glu Ala Arg Phe Ser Gly Lys Ala Gln Ile Thr Asp Thr Asn Leu
 210 215 220
 Phe Phe Pro Lys Phe Ser Gly Lys Ile Thr Ala Arg Glu Asn Glu Leu
 225 230 235 240
 Leu Ile His Ala Lys Phe Gly Ser Pro Asn Glu Pro Ile Lys Pro Glu
 245 250 255
 Thr Thr Ser Ile Leu Ile His Gly Gln Phe Cys Ser Leu Pro Thr Gln
 260 265 270
 Pro Ser Phe
 275

<210>207

<211>231

<212>PRT

<213>Chlamydia pneumoniae

<400>207

Asn Leu Lys Leu Pro Leu Tyr Ser Ser Thr Asp Asn Phe Val Leu Cys
 1 5 10 15
 Gln Leu Ser Leu Val Ser Asn His Leu Ala Pro Phe His Leu Lys Lys
 20 25 30
 Leu Thr Phe Ser Phe His Thr Asp Gly Gly Lys Phe Val Thr Lys Gly

35 40 45
 Asn Leu Gln Ala Leu Ile Glu Asn Pro Asp Tyr Pro Asp Leu Asn Asn
 50 55 60
 Thr Arg Ile Leu Ile Pro Asp Leu Leu Leu Ser Leu Asp Glu Ser Ser
 65 70 75 80
 Thr Ser Pro Ser Ser Lys Asp Leu Lys Ile Gln Gly Ser Gly Glu Ile
 85 90 95
 Phe Ser Leu Pro Leu Asp Ser Ile Thr Lys Thr Tyr Gly Lys Gln Val
 100 105 110
 Arg Leu Ser Pro Tyr Phe Gly Ser Ser Gly Asp Leu Asn Phe Val Val
 115 120 125
 Asn Tyr Asn Pro Lys Asp Gln Asn Lys Leu Thr Leu Leu Ser Xaa Phe
 130 135 140
 Lys Ser Glu Ala Leu Leu Gly Glu Leu Lys Leu Val Met Asp Phe Ser
 145 150 155 160
 Met Lys Leu Ser Ser Gly Thr Gln Gly Thr Leu Gln Trp Glu Val Ser
 165 170 175
 Pro Glu Arg Tyr Ala Ser Phe Phe Lys Asn Ala Ser Cys Ser Pro Thr
 180 185 190
 Cys Leu Leu His Arg Thr Ala Asn Val Arg Leu Asp Ile Ser Lys Leu
 195 200 205
 Ser Cys Pro Glu Glu Thr Lys Gly Leu Ser Cys Leu Thr Leu Leu Ala
 210 215 220
 Ala Glu Asp Leu Lys Val His
 225 230
 <210>208
 <211>415
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>208
 Asn Cys Lys Cys Thr Leu Arg His Leu Lys Thr Leu Leu Ser Arg Gly
 1 5 10 15
 Asn Gln Arg Phe Ile Leu Ser His Ala Ser Cys Arg Arg Gly Leu Glu
 20 25 30
 Gly Ser Leu Glu Ala Thr Pro Leu Ile Phe Tyr Asp Asn Val Ser Lys
 35 40 45
 Glu Thr Phe Ile Ile Asn Asp Phe Xaa Gly Ser Leu Arg Ala Asn Asn
 50 55 60
 Leu Asp Ala Lys Ile Glu Tyr Asp Leu Lys Gly Ser Cys Leu Ala Pro
 65 70 75 80
 Arg Gln Asp Ser Lys Thr Leu Ala Glu Phe Ser Leu Glu Gly Gln Val
 85 90 95
 Asp His Leu Phe Ser Pro Glu Ser Arg Glu Phe Lys Gln Thr Ala Asn
 100 105 110
 Trp Ile His Ile Pro Ser Ser Phe Ile Ala Gly Ile Ile Pro Met Ser
 115 120 125
 Pro Gly Leu Lys Ala Gln Ile Ser Ser Leu Ala Gly Pro Arg Ile Asn
 130 135 140
 Val Ser Ile Lys Asn Ala Phe Arg Phe Gly Glu Gly Pro Val Asp Ile
 145 150 155 160
 Met Val Asp Ser Glu Asn Leu Gln Ala Gln Ile Pro Leu Ile Leu Asn
 165 170 175
 Glu Lys Ser Ile Leu Leu Arg Glu Asn Leu Thr Ala His Leu Ser Ile
 180 185 190
 Asn Glu Asp Val Asn Lys Ala Phe Leu Gln Glu Phe Asn Pro Leu Leu
 195 200 205
 Ala Gly Gly Ala Tyr Ser Gln Tyr Pro Val Thr Leu Glu Ile Asp Lys
 210 215 220
 Gln Asn Phe Tyr Leu Pro Ile Arg Pro Tyr Ser Phe Glu Glu Phe Arg
 225 230 235 240
 Ile Gln Ser Ala Thr Leu Asp Met Gly Lys Ile Ser Ile Ala Asn Thr
 245 250 255
 Gly Thr Met Tyr Ala Leu Phe Gln Phe Leu Asp Ile Thr Asp Gln Lys
 260 265 270

Gln Phe Val Glu Ser Trp Phe Thr Pro Ile Phe Phe Ser Val Gln Lys
 275 280 285
 Gly Ser Ile Ile Cys Lys Arg Leu Asp Ala Leu Ile Asp Arg Arg Ile
 290 295 300
 Arg Leu Ala Leu Trp Gly Lys Thr Asp Ile Ala His Asp Arg Leu Phe
 305 310 315 320
 Met Thr Leu Gly Ile Asp Pro Glu Val Ile Lys Lys Tyr Phe His Asn
 325 330 335
 Thr Ser Leu Lys Thr Lys Asn Phe Phe Leu Ile Lys Ile Arg Gly Ser
 340 345 350
 Ile Ser Ser Pro Glu Val Asp Trp Ser Ser Ala Tyr Ala Arg Ile Ala
 355 360 365
 Leu Leu Lys Ser Tyr Ser Leu Gly Asn Pro Phe Ser Ser Leu Ala Asp
 370 375 380
 Lys Leu Phe Ser Ser Leu Gly Asp Ser Thr Pro Pro Pro Thr Val His
 385 390 395 400
 Pro Phe Pro Trp Glu Lys Ser Asn Phe Asp Ser Ile Glu Asn Lys
 405 410 415

<310>209

<311>458

<212>PRT

<213>Chlamydia pneumoniae

<400>209

Leu Leu Gly Ile Lys Leu Met Arg Lys Arg His Ser Phe Asp Ser Thr
 1 5 10 15
 Ser Thr Lys Lys Glu Ala Val Ser Lys Ala Ile Gln Lys Ile Ile Lys
 20 25 30
 Ile Met Glu Thr Thr Asp Pro Ser Leu Asn Val Glu Thr Pro Asn Ala
 35 40 45
 Glu Ile Glu Ser Ile Leu Gln Glu Ile Lys Glu Ile Lys Gln Lys Leu
 50 55 60
 Ser Lys Gln Ala Glu Asp Leu Gly Leu Leu Glu Lys Tyr Cys Ser Gln
 65 70 75 80
 Glu Thr Leu Ser Asn Leu Glu Asn Thr Asn Ala Ser Leu Lys Leu Ser
 85 90 95
 Ile Gly Ser Val Ile Glu Glu Leu Ala Ser Leu Lys Gln Leu Val Glu
 100 105 110
 Glu Ser Ile Glu Glu Ser Leu Gly Gln Gln Asp Gln Leu Ile Gln Ser
 115 120 125
 Val Leu Ile Glu Ile Ser Asp Lys Phe Leu Ser Ser Ile Gly Glu Thr
 130 135 140
 Leu Ser Gly Asn Leu Asp Met Asn Gln Asn Val Ile Gln Gly Leu Leu
 145 150 155 160
 Ile Lys Glu Asn Pro Glu Lys Ser Glu Ala Ala Ser Val Gly Tyr Val
 165 170 175
 Gln Thr Leu Leu Glu Pro Leu Ser Lys Arg Ile Gly Glu Thr His Lys
 180 185 190
 Lys Val Ala Thr His Asp Val Asn Ile Ser Ser Leu Gln Phe His Met
 195 200 205
 Met Ser Val Ala Gly Gly Arg Phe Arg Gly His Ile Asp Met Asn Gly
 210 215 220
 Tyr Arg Val Leu Gly Leu Gly Glu Pro Lys Asn Gly Glu Asp Ala Val
 225 230 235 240
 Ser Lys Asp Tyr Leu Glu Arg Tyr Val Ser Ser Gln Leu Thr Ile Asp
 245 250 255
 Lys Val Glu Asp Lys Pro Ile Thr Lys Pro Asn Lys Gly Lys Leu Leu
 260 265 270
 Tyr Ser Gln Gly Thr Ser Pro Lys Leu Glu Gly Pro Leu Pro Leu Gly
 275 280 285
 Leu Leu Thr Ser Gly Ile Ser Gly Phe Thr Trp Lys Ser Ala Ser Lys
 290 295 300
 Ser Asn Asp Gly Ser Phe Pro Phe Ser Ala Leu Arg His Lys Glu Thr
 305 310 315 320
 Glu Ser Asp Thr Asp Cys Phe Gln Ile Thr Ser Thr Thr Leu Ser Gly

325 330 335
 Asn Gln Ala Gly Thr Tyr Thr Trp Ser Leu Ser Leu Lys Val Leu Val
 340 345 350
 Pro Ser Ile Phe Cln Ile Glu Lys Pro Glu Val Gln Leu Ser Leu Val
 355 360 365
 Tyr Ser Tyr Glu Asp Trp Leu Pro Ile Asp Asn Ile Phe Asn Met Ser
 370 375 380
 Gln Pro Arg Thr Ile Pro Leu Ala Leu Leu Gly Cln Thr Met Leu Ala
 385 390 395 400
 Gly Gln Lys Tyr Asp Ile Leu Glu Leu Ala Ala His Gln Thr Asn Gln
 405 410 415
 Thr Leu Met Ile Ser Pro Asn Cys Ser Arg Phe Ser Leu Gln Leu Lys
 420 425 430
 Gln Thr Asn Gln Phe Glu Asn Ser Pro Val Asp Phe Tyr Ile Val His
 435 440 445
 Ala Ala His Ser Cys His Trp Ser Gly Phe
 450 455

<210>210

<211>226

<212>PRT

<213>Chlamydia pneumoniae

<400>210

Met Thr Ile Arg Val Arg Asn Leu Ala Tyr Ser Val Asn Lys Lys Lys
 1 5 10 15
 Ile Leu Asp Gly Val Thr Phe Ser Leu Glu Arg Gly His Ile Thr Leu
 20 25 30
 Phe Val Gly Lys Ser Gly Ser Gly Lys Thr Met Ile Leu Arg Ala Leu
 35 40 45
 Ala Gly Leu Val Gln Pro Thr Cln Gly Asp Ile Trp Ile Glu Gly Glu
 50 55 60
 Ala Pro Ala Leu Val Phe Cln Cln Pro Glu Leu Phe Ser His Met Thr
 65 70 75 80
 Val Leu Gly Asn Cys Thr His Pro Gln Ile His Ile Lys Gly Arg Ser
 85 90 95
 Thr Glu Glu Ala Arg Glu Lys Ala Phe Glu Leu Leu His Leu Leu Asp
 100 105 110
 Ile Glu Glu Val Ala Lys Asn Tyr Pro Asp Gln Leu Ser Gly Gly Gln
 115 120 125
 Lys Gln Arg Val Ala Ile Val Arg Ser Leu Cys Met Asp Lys His Thr
 130 135 140
 Leu Leu Phe Asp Glu Pro Thr Ser Ala Leu Asp Pro Phe Ala Thr Ala
 145 150 155 160
 Ser Phe Arg His Leu Leu Glu Thr Leu Arg Asp Gln Glu Leu Thr Val
 165 170 175
 Gly Leu Thr Thr His Asp Met Gln Phe Val His Ser Cys Leu Asp Arg
 180 185 190
 Ile Tyr Leu Ile Asp Gln Gly Thr Val Ala Gly Val Tyr Asp Lys Arg
 195 200 205
 Asp Gly Glu Leu Asp Ser Gly His Pro Leu Ser Lys Tyr Ile His Ser
 210 215 220
 Ala Gln
 225

<210>211

<211>230

<212>PRT

<213>Chlamydia pneumoniae

<400>211

Glu Val Gly Val Asp His Trp Leu Ala Ile Ala Arg Leu Leu Leu Arg
 1 5 10 15
 Gly Cys Gly Tyr Thr Leu Cys Val Ser Gly Ile Gly Ile Leu Cys Gly
 20 25 30
 Ser Ile Leu Gly Leu Leu Ile Gly Thr Val Thr Ser Leu Tyr Phe Pro
 35 40 45
 Ser Lys Leu Thr Lys Leu Leu Ala Asn Ser Tyr Val Thr Val Ile Arg

50 55 60
 Gly Thr Pro Leu Phe Ile Gln Ile Leu Ile Ile Tyr Phe Gly Leu Pro
 65 70 75 80
 Glu Val Leu Pro Ile Glu Pro Thr Pro Leu Val Ala Gly Ile Ile Ala
 85 90 95
 Leu Ser Met Asn Ser Ala Ala Tyr Leu Ala Glu Asn Ile Arg Gly Gly
 100 105 110
 Ile Asn Ser Leu Ser Ile Gly Gln Tip Glu Ser Ala Met Val Leu Gly
 115 120 125
 Tyr Lys Lys Tyr Gln Ile Phe Val Tyr Ile Ile Tyr Pro Gln Val Phe
 130 135 140
 Lys Asn Ile Leu Pro Ser Leu Thr Asn Glu Phe Val Ser Leu Ile Lys
 145 150 155 160
 Glu Ser Ser Ile Leu Met Val Val Gly Val Pro Glu Leu Thr Lys Val
 165 170 175
 Thr Lys Asp Ile Val Ser Arg Glu Leu Asn Pro Met Glu Met Tyr Leu
 180 185 190
 Ile Cys Ala Gly Leu Tyr Phe Leu Met Thr Thr Ser Phe Ser Cys Ile
 195 200 205
 Ser Arg Leu Ser Glu Lys Arg Arg Ser Tyr Asp Asn
 210 215 220

<210>212

<211>147

<212>PRT

<213>Chlamydia pneumoniae

<400>212

Met Lys Lys Lys Val Thr Ile Asp Glu Ala Leu Lys Glu Ile Leu Arg
 1 5 10 15
 Leu Glu Gly Ala Ala Thr Gln Glu Glu Leu Cys Ala Lys Leu Leu Ala
 20 25 30
 Gln Gly Phe Ala Thr Thr Gln Ser Ser Val Ser Arg Tip Leu Arg Lys
 35 40 45
 Ile Gln Ala Val Lys Val Ala Gly Glu Arg Gly Ala Arg Tyr Ser Leu
 50 55 60
 Pro Ser Ser Thr Glu Lys Thr Thr Thr Arg His Leu Val Leu Ser Ile
 65 70 75 80
 Arg His Asn Ala Ser Leu Ile Val Ile Arg Thr Val Pro Gly Ser Ala
 85 90 95
 Ser Trp Ile Ala Ala Leu Leu Asp Gln Gly Leu Lys Asp Glu Ile Leu
 100 105 110
 Gly Thr Leu Ala Gly Asp Asp Thr Ile Phe Val Thr Pro Ile Asp Glu
 115 120 125
 Gly Arg Leu Pro Leu Leu Met Val Ser Ile Ala Asn Leu Leu Gln Val
 130 135 140
 Phe Leu Asp
 145

<210>213

<211>344

<212>PRT

<213>Chlamydia pneumoniae

<400>213

Met Leu Thr Leu Gly Leu Glu Ser Ser Cys Asp Glu Thr Ala Cys Ala
 1 5 10 15
 Ile Val Asn Glu Asp Lys Gln Ile Leu Ala Asn Ile Ile Ala Ser Gln
 20 25 30
 Asp Ile His Ala Ser Tyr Gly Gly Val Val Pro Glu Leu Ala Ser Arg
 35 40 45
 Ala His Leu His Ile Phe Pro Gln Val Ile Asn Lys Ala Leu Gln Gln
 50 55 60
 Ala Asn Leu Leu Ile Glu Asp Met Asp Leu Ile Ala Val Thr Gln Thr
 65 70 75 80
 Pro Gly Leu Ile Gly Ser Leu Ser Val Gly Val His Phe Gly Lys Gly
 85 90 95
 Ile Ala Ile Gly Ala Lys Lys Ser Leu Ile Gly Val Asn His Val Glu

100 105 110
 Ala His Leu Tyr Ala Ala Tyr Met Ala Ala Gln Asn Val Cln Phe Pro
 115 120 125
 Ala Leu Gly Leu Val Val Ser Gly Ala His Thr Ala Ala Phe Phe Ile
 130 135 140
 Glu Asn Pro Thr Ser Tyr Lys Leu Ile Gly Lys Thr Arg Asp Asp Ala
 145 150 155 160
 Ile Gly Glu Thr Phe Asp Lys Val Gly Arg Phe Leu Gly Leu Pro Tyr
 165 170 175
 Pro Ala Gly Pro Leu Ile Glu Lys Leu Ala Leu Glu Gly Ser Glu Asp
 180 185 190
 Ser Tyr Pro Phe Ser Pro Ala Lys Val Pro Asn Tyr Asp Phe Ser Phe
 195 200 205
 Ser Gly Leu Lys Thr Ala Val Leu Tyr Ala Ile Lys Gly Asn Asn Ser
 210 215 220
 Ser Pro Arg Ser Pro Ala Pro Glu Ile Ser Leu Glu Lys Cln Arg Asp
 225 230 235 240
 Ile Ala Ala Ser Phe Gln Lys Ala Ala Cys Thr Thr Ile Ala Gln Lys
 245 250 255
 Leu Pro Thr Ile Ile Lys Glu Phe Ser Cys Arg Ser Ile Leu Ile Gly
 260 265 270
 Gly Gly Val Ala Ile Asn Glu Tyr Phe Arg Ser Ala Ile Cln Thr Ala
 275 280 285
 Cys Asn Leu Pro Val Tyr Phe Pro Pro Ala Lys Leu Cys Ser Asp Asn
 290 295 300
 Ala Ala Met Ile Ala Gly Leu Gly Gly Glu Asn Phe Gln Lys Asn Ser
 305 310 315 320
 Ser Ile Pro Glu Ile Arg Ile Cys Ala Arg Tyr Cln Trp Glu Ser Val
 325 330 335
 Ser Pro Phe Ser Leu Ala Ser Pro
 340

<210>214

<211>514

<212>PRT

<213>Chlamydia pneumoniae

<400>214

Met Arg Lys Ile Ser Val Gly Ile Cys Ile Thr Ile Leu Leu Ser Leu
 1 5 10 15
 Ser Val Val Leu Gln Gly Cys Lys Glu Ser Ser His Ser Ser Thr Ser
 20 35 30
 Arg Gly Glu Leu Ala Ile Asn Ile Arg Asp Glu Pro Arg Ser Leu Asp
 35 40 45
 Pro Arg Gln Val Arg Leu Leu Ser Glu Ile Ser Leu Val Lys His Ile
 50 55 60
 Tyr Glu Gly Leu Val Gln Glu Asn Asn Leu Ser Gly Asn Ile Glu Pro
 65 70 75 80
 Ala Leu Ala Glu Asp Tyr Ser Leu Ser Ser Asp Gly Leu Thr Tyr Thr
 85 90 95
 Phe Lys Leu Lys Ser Ala Phe Trp Ser Asn Gly Asp Pro Leu Thr Ala
 100 105 110
 Glu Asp Phe Ile Glu Ser Trp Lys Gln Val Ala Thr Gln Glu Val Ser
 115 120 125
 Gly Ile Tyr Ala Phe Ala Leu Asn Pro Ile Lys Asn Val Arg Lys Ile
 130 135 140
 Gln Glu Gly His Leu Ser Ile Asp His Phe Gly Val His Ser Pro Asn
 145 150 155 160
 Glu Ser Thr Leu Val Val Thr Leu Glu Ser Pro Thr Ser His Phe Leu
 165 170 175
 Lys Leu Leu Ala Leu Pro Val Phe Phe Pro Val His Lys Ser Gln Arg
 180 185 190
 Thr Leu Gln Ser Lys Ser Leu Pro Ile Ala Ser Gly Ala Phe Tyr Pro
 195 200 205
 Lys Asn Ile Lys Gln Lys Gln Trp Ile Lys Leu Ser Lys Asn Pro His
 210 215 220

Tyr Tyr Asn Gln Ser Gln Val Glu Thr Lys Thr Ile Thr Ile His Phe
 225 230 235 240
 Ile Pro Asp Ala Asn Thr Ala Ala Lys Leu Phe Asn Gln Gly Lys Leu
 245 250 255
 Asn Trp Gln Gly Pro Pro Trp Gly Glu Arg Ile Pro Gln Glu Thr Leu
 260 265 270
 Ser Asn Leu Gln Ser Lys Gly His Leu His Ser Phe Asp Val Ala Gly
 275 280 285
 Thr Ser Trp Leu Thr Phe Asn Ile Asn Lys Phe Pro Leu Asn Asn Met
 290 295 300
 Lys Leu Arg Glu Ala Leu Ala Ser Ala Leu Asp Lys Glu Ala Leu Val
 305 310 315 320
 Ser Thr Ile Phe Leu Gly Arg Ala Lys Thr Ala Asp His Leu Leu Pro
 325 330 335
 Thr Asn Ile His Ser Tyr Pro Glu His Gln Lys Gln Glu Met Ala Gln
 340 345 350
 Arg Gln Ala Tyr Ala Lys Lys Leu Phe Lys Glu Ala Leu Glu Glu Leu
 355 360 365
 Gln Ile Thr Ala Lys Asp Leu Glu His Leu Asn Leu Ile Phe Pro Val
 370 375 380
 Ser Ser Ser Ala Ser Ser Leu Leu Val Gln Leu Ile Arg Glu Gln Trp
 385 390 395 400
 Lys Glu Ser Leu Gly Phe Ala Ile Pro Ile Val Gly Lys Glu Phe Ala
 405 410 415
 Leu Leu Gln Ala Asp Leu Ser Ser Gly Asn Phe Ser Leu Ala Thr Gly
 420 425 430
 Gly Trp Phe Ala Asp Phe Ala Asp Pro Met Ala Phe Leu Thr Ile Phe
 435 440 445
 Ala Tyr Pro Ser Gly Val Pro Pro Tyr Ala Ile Asn His Lys Asp Phe
 450 455 460
 Leu Glu Ile Leu Gln Asn Ile Glu Gln Glu Gln Asp His Gln Lys Arg
 465 470 475 480
 Ser Glu Leu Val Ser Gln Ala Ser Leu Tyr Leu Glu Thr Phe His Ile
 485 490 495
 Ile Glu Pro Ile Tyr His Asp Ala Phe Gln Phe Ala Met Asn Lys Lys
 500 505 510
 Leu Ser

<210>215

<211>494

<212>PRT

<213>Chlamydia pneumoniae

<400>215

Lys Glu Met Pro Arg Ser Leu Asp Pro Gly Lys Thr Arg Leu Ile Ala
 1 5 10 15
 Asp Gln Thr Leu Met Arg His Leu Tyr Glu Gly Leu Val Glu Glu His
 20 25 30
 Ser Gln Asn Gly Glu Ile Lys Pro Ala Leu Ala Glu Ser Tyr Thr Ile
 35 40 45
 Ser Glu Asp Gly Thr Arg Tyr Thr Phe Lys Ile Lys Asn Ile Leu Trp
 50 55 60
 Ser Asn Gly Asp Pro Leu Thr Ala Gln Asp Phe Val Ser Ser Trp Lys
 65 70 75 80
 Glu Ile Leu Lys Glu Asp Ala Ser Ser Val Tyr Leu Tyr Ala Phe Leu
 85 90 95
 Pro Ile Lys Asn Ala Arg Ala Ile Phe Asp Asp Thr Glu Ser Pro Glu
 100 105 110
 Asn Leu Gly Val Arg Ala Leu Asp Lys Arg His Leu Glu Ile Gln Leu
 115 120 125
 Glu Thr Pro Cys Ala His Phe Leu His Phe Leu Thr Leu Pro Ile Phe
 130 135 140
 Phe Pro Val His Glu Thr Leu Arg Asn Tyr Ser Thr Ser Phe Glu Glu
 145 150 155 160
 Met Pro Ile Thr Cys Gly Ala Phe Arg Pro Val Ser Leu Glu Lys Gly

Leu	Lys	Phe	Asp	Ser	Lys	Phe	Ile	Lys	Val	Ile	Phe	Lys	Met	Phe	Ser
1				5					10					15	
Arg	Trp	Ile	Thr	Leu	Phe	Leu	Leu	Phe	Ile	Ser	Leu	Thr	Gly	Cys	Ser
			20					25					30		
Ser	Tyr	Ser	Ser	Lys	His	Lys	Gln	Ser	Leu	Ile	Ile	Pro	Ile	His	Asp
			35				40					45			
Asp	Pro	Val	Ala	Phe	Ser	Pro	Glu	Gln	Ala	Lys	Arg	Ala	Met	Asp	Leu
			50				55				60				
Ser	Ile	Ala	Gln	Leu	Leu	Phe	Asp	Gly	Leu	Thr	Arg	Glu	Thr	His	Arg
			65			70				75				80	
Glu	Ser	Asn	Asp	Leu	Glu	Leu	Ala	Ile	Ala	Ser	Arg	Tyr	Thr	Val	Ser
			85						90					95	
Glu	Asp	Phe	Cys	Ser	Tyr	Thr	Phe	Phe	Ile	Lys	Asp	Ser	Ala	Leu	Trp
			100					105					110		
Ser	Asp	Gly	Thr	Pro	Ile	Thr	Ser	Glu	Asp	Ile	Arg	Asn	Ala	Trp	Glu
			115				120					125			
Tyr	Ala	Gln	Glu	Asn	Ser	Pro	His	Ile	Gln	Ile	Phe	Gln	Gly	Leu	Asn
			130			135					140				

Phe Ser Thr Pro Ser Ser Asn Ala Ile Thr Ile His Leu Asp Ser Pro
 145 150 155 160
 Asn Pro Asp Phe Pro Lys Leu Leu Ala Phe Pro Ala Phe Ala Ile Phe
 165 170 175
 Lys Pro Glu Asn Pro Lys Leu Phe Ser Gly Pro Tyr Thr Leu Val Glu
 180 185 190
 Tyr Phe Pro Gly His Asn Ile His Leu Lys Lys Asn Pro Asn Tyr Tyr
 195 200 205
 Asp Tyr His Cys Val Ser Ile Asn Ser Ile Lys Leu Leu Ile Ile Pro
 210 215 220
 Asp Ile Tyr Thr Ala Ile His Leu Leu Asn Arg Gly Lys Val Asp Trp
 225 230 235 240
 Val Gly Gln Pro Trp His Gln Gly Ile Pro Trp Glu Leu His Lys Gln
 245 250 255
 Ser Gln Tyr His Tyr Tyr Thr Tyr Pro Val Glu Gly Ala Phe Trp Leu
 260 265 270
 Cys Leu Asn Thr Lys Ser Pro His Leu Asn Asp Leu Gln Asn Arg His
 275 280 285
 Arg Leu Ala Thr Cys Ile Asp Lys Arg Ser Ile Ile Glu Glu Ala Leu
 290 295 300
 Gln Gly Thr Gln Gln Pro Ala Glu Thr Leu Ser Arg Gly Ala Pro Gln
 305 310 315 320
 Pro Asn Gln Tyr Lys Lys Gln Lys Pro Leu Thr Pro Gln Glu Lys Leu
 325 330 335
 Val Leu Thr Tyr Pro Ser Asp Ile Leu Arg Cys Gln Arg Ile Ala Glu
 340 345 350
 Ile Leu Lys Glu Gln Trp Lys Ala Ala Gly Ile Asp Leu Ile Leu Glu
 355 360 365
 Gly Leu Glu Tyr His Leu Phe Val Asn Lys Arg Lys Val Gln Asp Tyr
 370 375 380
 Ala Ile Ala Thr Gln Thr Gly Val Ala Tyr Tyr Pro Gly Ala Asn Leu
 385 390 395 400
 Ile Ser Glu Glu Asp Lys Leu Leu Gln Asn Phe Glu Ile Ile Pro Ile
 405 410 415
 Tyr Tyr Leu Ser Tyr Asp Tyr Leu Thr Gln Asp Phe Ile Glu Gly Val
 420 425 430
 Ile Tyr Asn Ala Ser Gly Ala Val Asp Leu Lys Tyr Thr Tyr Phe Pro
 435 440 445

<210>217

<211>534

<212>PRT

<213>Chlamydia pneumoniae

<400>217

Gln Ile Glu Tyr Tyr Ile Met Lys Met His Arg Leu Lys Pro Thr Leu
 1 5 10 15
 Lys Ser Leu Ile Pro Asn Leu Leu Phe Leu Leu Leu Thr Leu Ser Ser
 20 25 30
 Cys Ser Lys Gln Lys Gln Glu Pro Leu Gly Lys His Leu Val Ile Ala
 35 40 45
 Met Ser His Asp Leu Ala Asp Leu Asp Pro Arg Asn Ala Tyr Leu Ser
 50 55 60
 Arg Asp Ala Ser Leu Ala Lys Ala Leu Tyr Glu Gly Leu Thr Arg Glu
 65 70 75 80
 Thr Asp Gln Gly Ile Ala Leu Ala Leu Ala Glu Ser Tyr Thr Leu Ser
 85 90 95
 Lys Asp His Lys Val Tyr Thr Phe Lys Leu Arg Pro Ser Val Trp Ser
 100 105 110
 Asp Gly Thr Pro Leu Thr Ala Tyr Asp Phe Glu Lys Ser Ile Lys Gln
 115 120 125
 Leu Tyr Phe Glu Glu Phe Ser Pro Ser Ile His Thr Leu Leu Gly Val
 130 135 140
 Ile Lys Asn Ser Ser Ala Ile His Asn Ala Gln Lys Ser Leu Glu Thr
 145 150 155 160
 Leu Gly Ile Gln Ala Lys Asp Asp Leu Thr Leu Val Ile Thr Leu Glu

165 170 175
 Gln Pro Phe Pro Tyr Phe Leu Thr Leu Ile Ala Arg Pro Val Phe Ser
 180 185 190
 Pro Val His His Thr Leu Arg Glu Ser Tyr Lys Lys Gly Thr Pro Pro
 195 200 205
 Ser Thr Tyr Ile Ser Asn Gly Pro Phe Val Leu Lys Lys His Xaa His
 210 215 220
 Gln Asn Tyr Leu Ile Leu Glu Lys Asn Pro His Tyr Tyr Asp His Glu
 225 230 235 240
 Ser Val Lys Leu Asp Arg Val Thr Leu Lys Ile Ile Pro Asp Ala Ser
 245 250 255
 Thr Ala Thr Lys Leu Phe Lys Ser Lys Ser Ile Asp Trp Ile Gly Ser
 260 265 270
 Pro Trp Ser Ala Pro Ile Ser Asn Glu Asp Gln Lys Val Leu Ser Gln
 275 280 285
 Glu Lys Ile Leu Thr Tyr Ser Val Ser Ser Thr Thr Leu Leu Ile Tyr
 290 295 300
 Asn Leu Gln Lys Pro Leu Ile Gln Asn Lys Ala Leu Arg Lys Ala Ile
 305 310 315 320
 Ala His Ala Ile Asp Arg Lys Ser Ile Leu Arg Leu Val Pro Ser Gly
 325 330 335
 Gln Glu Ala Val Thr Leu Val Pro Pro Asn Leu Ser Gln Leu Asn Leu
 340 345 350
 Gln Lys Glu Ile Ser Thr Glu Glu Arg Gln Thr Lys Ala Arg Ala Tyr
 355 360 365
 Phe Gln Glu Ala Lys Glu Thr Leu Ser Glu Lys Glu Leu Ala Glu Leu
 370 375 380
 Ser Ile Leu Tyr Pro Ile Asp Ser Ser Asn Ser Ser Ile Ile Ala Gln
 385 390 395 400
 Glu Ile Gln Arg Gln Leu Lys Asp Thr Leu Gly Leu Lys Ile Lys Ile
 405 410 415
 Gln Gly Met Glu Tyr His Cys Phe Leu Lys Lys Arg Arg Gln Gly Asp
 420 425 430
 Phe Phe Ile Ala Thr Gly Gly Trp Ile Ala Glu Tyr Val Ser Pro Val
 435 440 445
 Ala Phe Leu Ser Ile Leu Gly Asn Pro Arg Asp Leu Thr Gln Trp Arg
 450 455 460
 Asn Ser Asp Tyr Glu Lys Thr Leu Glu Lys Leu Tyr Leu Pro His Ala
 465 470 475 480
 Tyr Lys Glu Asn Leu Lys Arg Ala Glu Met Ile Ile Glu Glu Glu Thr
 485 490 495
 Pro Ile Ile Pro Leu Tyr His Gly Lys Tyr Ile Tyr Ala Ile His Pro
 500 505 510
 Lys Ile Gln Asn Thr Phe Gly Ser Leu Leu Gly His Thr Asp Leu Lys
 515 520 525
 Asn Ile Asp Ile Leu Ser
 530

<210>218

<211>296

<212>PRT

<213>Chlamydia pneumoniae

<400>218

Leu Ser Leu Val Phe Ser Tyr Ile Lys Asn Arg Ile Leu Phe Asn Leu
 1 5 10 15
 Leu Ser Leu Trp Ile Val Leu Thr Leu Thr Phe Leu Val Met Lys Thr
 20 25 30
 Ile Pro Gly Asp Pro Phe Asn Asp Glu Gly Cys Asn Val Leu Ser Glu
 35 40 45
 Glu Val Leu Gln Thr Leu Lys Ser Arg Tyr Gly Leu Asp Lys Pro Leu
 50 55 60
 Tyr Gln Gln Tyr Thr Gln Tyr Leu His Ser Ile Ala Lys Leu Asp Phe
 65 70 75 80
 Gly Asn Ser Leu Val Tyr Lys Asp Arg Lys Val Thr Asn Ile Ile Ser
 85 90 95

Thr Ala Phe Pro Ile Ser Ala Ile Leu Gly Leu Gln Ser Leu Phe Leu
 100 105 110
 Ser Ile Gly Gly Gly Ile Ala Leu Gly Thr Ile Ala Ala Leu Lys Lys
 115 120 125
 Lys Lys Gln Arg Arg Tyr Ile Leu Gly Ala Ser Ile Leu Gln Ile Ser
 130 135 140
 Ile Pro Ala Phe Ile Phe Ala Thr Leu Leu Gln Tyr Val Phe Ala Val
 145 150 155 160
 Lys Ile Pro Leu Leu Pro Ile Ala Cys Trp Gly Ser Phe Thr His Thr
 165 170 175
 Ile Leu Pro Thr Leu Ala Leu Ala Val Thr Pro Met Ala Phe Ile Ile
 180 185 190
 Gln Leu Thr Tyr Ser Ser Val Ser Ala Ala Leu Asn Lys Asp Tyr Val
 195 200 205
 Leu Leu Ala Tyr Ala Lys Gly Leu Ser Pro Leu Lys Val Val Ile Lys
 210 215 220
 His Ile Leu Pro Tyr Ala Ile Phe Pro Thr Ile Ser Tyr Ser Ala Phe
 225 230 235 240
 Leu Thr Thr Thr Val Ile Thr Gly Thr Phe Ala Ile Glu Asn Ile Phe
 245 250 255
 Cys Ile Pro Gly Leu Gly Lys Trp Phe Ile Cys Ser Ile Lys Gln Arg
 260 265 270
 Asp Tyr Pro Val Ala Leu Gly Leu Ser Val Phe Tyr Gly Thr Tyr Leu
 275 280 285
 Cys Ser Leu Leu Tyr Phe Leu Thr
 290 295
 <210>219
 <211>284
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>219
 Met Asp Asn Tyr Leu Leu Asn Ile Lys Asp Leu Thr Ile Thr Ser Thr
 1 5 10 15
 Asn Pro Lys Arg Thr Leu Ile Glu Asn Leu Ser Leu Gln Leu Lys Glu
 20 25 30
 Asn Arg Asn Leu Ala Leu Val Gly Glu Ser Gly Ser Gly Lys Thr Thr
 35 40 45
 Ile Thr Lys Ala Ile Leu Gly Phe Leu Pro Glu Asn Cys Leu Ile Lys
 50 55 60
 Thr Gly Ser Ile Leu Phe Glu Asp Ile Asp Ile Thr Lys Leu Ser Pro
 65 70 75 80
 Lys Glu Leu His Lys Ile Arg Gly Gln Lys Ile Ala Thr Ile Leu Gln
 85 90 95
 Asn Ala Met Gly Ser Leu Thr Pro Ser Met Arg Ile Gly Met Gln Ile
 100 105 110
 Ile Glu Thr Leu Arg Gln His His Lys Met Asn Lys Glu Glu Ala Tyr
 115 120 125
 Asn Lys Ala Met Gln Leu Leu Thr Asp Val Cys Ile Pro Asn Pro Lys
 130 135 140
 Tyr Ser Phe Ser Gln Tyr Pro Phe Glu Leu Ser Gly Gly Met Arg Gln
 145 150 155 160
 Arg Val Val Ile Ala Ile Ala Leu Ala Ser Gln Pro Lys Leu Ile Leu
 165 170 175
 Ala Asp Glu Pro Thr Thr Ala Leu Asp Ser Met Ser Gln Ala Gln Val
 180 185 190
 Leu Arg Ile Leu Arg Asn Ile Gln Gln Gln Lys Gln Ala Thr Ile Leu
 195 200 205
 Leu Val Thr His Asn Leu Ser Leu Val Lys Glu Leu Cys Asn Asp Ile
 210 215 220
 Cys Ile Ile Lys Asp Gly Lys Leu Ile Glu Thr Gly Thr Val Glu Glu
 225 230 235 240
 Ile Phe Leu Ser Pro Lys His Pro Tyr Thr Leu Lys Leu Leu Asn Ala
 245 250 255
 Val Ser Lys Ile Pro Ile Lys Lys Thr Ser Ser Pro Ile Leu Lys Asn

260 265 270
 Lys Phe Gln Pro Leu Met Ser Met Gln Gly Gly Leu
 275 280
 <210>220
 <211>293
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>220
 Val Pro Thr Ser Asn Glu Tyr Ala Arg Trp Phe Met Thr Thr Leu Leu
 1 5 10 15
 Ser Ile Lys Asp Leu Ser Leu Thr Ile Arg Gly Lys Lys Ile Leu Asn
 20 25 30
 His Ile Asn Leu Asn Leu Ile Lys Gly Ser Tyr Leu Thr Ile Val Gly
 35 40 45
 Pro Ser Gly Ser Gly Lys Ser Ser Leu Ala Leu Thr Ile Leu Asp Leu
 50 55 60
 Leu Lys Pro Thr Thr Gly Thr Ile Thr Phe His Met Asp Pro Lys Ile
 65 70 75 80
 Pro Arg Ala Arg Lys Val Gln Val Ile Trp Gln Asp Ile Asp Ser Ser
 85 90 95
 Leu Asn Pro Cys Met Ser Ile Lys Gly Ile Ile Ser Glu Pro Leu Asn
 100 105 110
 Ile Ile Gly Thr Tyr Ser Lys Ala Glu Gln Asn Lys Glu Ile Tyr Asn
 115 120 125
 Val Leu Asp Leu Val Asn Leu Pro Lys Ser Val Leu His Leu Lys Pro
 130 135 140
 Tyr Lys Leu Ser Gly Gly Gln Lys Gln Arg Ile Ala Ile Ala Lys Ala
 145 150 155 160
 Leu Val Ser Lys Pro Glu Leu Leu Ile Cys Asp Glu Pro Leu Ser Ser
 165 170 175
 Leu Asp Thr Leu Asn Gln Ser Leu Ile Leu Asp Leu Phe Gln Thr Ile
 180 185 190
 Lys Lys Glu Tyr Gln Asn Thr Leu Leu Phe Ile Thr His Asp Met Ser
 195 200 205
 Ala Ala Tyr Tyr Ile Ala Asp Thr Ile Ala Val Met Asp Gln Gly Ser
 210 215 220
 Leu Val Glu His Ala Cys Arg Glu Lys Ile Phe Ser Thr Pro Lys His
 225 230 235 240
 Thr Thr Thr Gln Asp Leu Leu Asp Ala Ile Pro Ile Phe Ser Leu Ile
 245 250 255
 Ser Thr Glu Met Glu Pro Ser Glu Glu Tyr Glu Leu Gln Val Ala Ser
 260 265 270
 Lys Xaa Ile Asp Leu Glu Ile Thr Asn Ser Tyr Arg Lys Ile Arg Ile
 275 280 285
 Phe Asp Val Ser Gln
 290

<210>221
 <211>279
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>221
 Ile Val Pro Leu Pro Gln Lys Asn Asn Lys Glu Thr Ser Cys Met Asn
 1 5 10 15
 Thr Tyr Thr Phe Ser Pro Thr Leu Gln Lys Ser Phe Ser Leu Phe Leu
 20 25 30
 Leu Glu Lys Leu Asp Ser Tyr Phe Phe Phe Gly Gly Thr Arg Thr Gln
 35 40 45
 Ile Leu Val Ile Thr Pro Thr Asn Ile Arg Leu Ala Ala Lys Lys Arg
 50 55 60
 Gly Cys Lys Val Ser Thr Ile Glu Lys Ile Ile Lys Ile Leu Ser Phe
 65 70 75 80
 Ile Leu Leu Pro Leu Val Ile Ile Ala Phe Ile Leu Arg Tyr Phe Leu
 85 90 95
 His Lys Lys Phe Asp Lys Gln Phe Leu Cys Ile Pro Lys Val Ile Ser

100 105 110
 Asn Glu Asp Glu Ala Leu Leu Gly Ser Arg Pro Gln Ala Val Glu Lys
 115 120 125
 Ala Val Arg Glu Ile Ser Pro Ala Phe Phe Ser Ile Pro Arg Lys Tyr
 130 135 140
 Gln Leu Ile Arg Ile Asp Thr Pro Lys Asp Asp Ala Pro Ser Ile Leu
 145 150 155 160
 Phe Pro Ile Gly Ile Glu Ile Ile Leu Lys Asp Leu Cys Ile Asp Thr
 165 170 175
 Leu Lys Gln Ser Asn Leu Phe Leu Lys Arg Glu Met Asp Phe Leu Gly
 180 185 190
 His Pro Glu Glu Lys Ala Leu Phe Asp Ser Ile Cys Ser Ile Glu Lys
 195 200 205
 Asp Gln Glu Trp Met Ser Leu Glu Ser Lys Lys Leu Leu Ile Thr His
 210 215 220
 Phe Leu Lys Tyr Leu Phe Val Ser Gly Ile Glu Gln Leu Asn Pro Gly
 225 230 235 240
 Phe Asn Pro Glu Asn Gly Arg Gly Tyr Phe Ser Glu Ile Ser Thr Ala
 245 250 255
 Lys Ile His Phe His Gln His Gly Arg Tyr Gly Pro Ile Arg Ser Ser
 260 265 270
 Gly Pro Ile Met Lys Glu Ile
 275

<210>222

<211>272

<212>PRT

<213>Chlamydia pneumoniae

<400>222

Ile Val Asp Arg Arg Ser Pro Ala Cys Tyr Asp Ser Ile Asn Ser Asp
 5 10 15
 Ala Ile Gly Val Ser Leu Leu Met Asp Ile Ser His Ile Leu Glu Asp
 20 25 30
 Leu Ala Tyr Asp Glu Gly Ile Leu Pro Arg Glu Ala Ile Glu Ala Ala
 35 40 45
 Ile Val Lys Gln Met Gln Ile Thr Pro Tyr Leu Leu His Ile Leu His
 50 55 60
 Asp Ala Thr Gln Arg Val Pro Glu Ile Val Asn Asp Gly Ser Tyr Gln
 65 70 75 80
 Gly His Leu Tyr Ala Met Tyr Leu Leu Ala Gln Phe Arg Glu Ser Arg
 85 90 95
 Ala Leu Pro Leu Ile Ile Lys Leu Phe Ala Phe Glu Asp Asp Thr Pro
 100 105 110
 His Ala Ile Ala Gly Asp Val Leu Thr Glu Asp Leu Pro Arg Ile Leu
 115 120 125
 Ala Ser Val Cys Asn Asp Asp Ser Leu Ile Lys Glu Leu Ile Glu Thr
 130 135 140
 Pro Lys Ile Asn Pro Tyr Val Lys Ala Ala Ala Ile Ser Gly Leu Val
 145 150 155 160
 Thr Leu Val Gly Ala Gly Lys Ile Pro Arg Asp Lys Val Ile Arg Xaa
 165 170 175
 Phe Ala Glu Leu Leu Asn Tyr Arg Leu Glu Lys Gln Pro Ser Phe Ala
 180 185 190
 Trp Asp Asn Leu Ile Ala Gly Ile Cys Thr Leu Tyr Pro Gly Glu Leu
 195 200 205
 Phe Tyr Pro Ile Ser Lys Ala Phe Asp Gly Gly Leu Val Asp Thr Ser
 210 215 220
 Phe Ile Ser Met Glu Asp Val Glu Asn Ile Ile His Glu Glu Thr Val
 225 230 235 240
 Glu Ser Cys Ile His Thr Leu Cys Ser Ser Thr Glu Leu Ile Asn Asp
 245 250 255
 Thr Leu Glu Glu Met Glu Lys Trp Leu Glu Asp Phe Pro Ile Glu Pro
 260 265 270

<210>223

<211>246

<212>PRT

<213>Chlamydia pneumoniae

<400>223

Val Asn Lys Lys Lys Arg Phe Leu Ser Leu Leu Phe Leu Thr Ala Val
 1 5 10 15
 Leu Leu Gly Ile Trp Phe Ser Pro His Pro Ala Ser Ile Asn Ser Asn
 20 25 30
 Ala Trp Gln Leu Phe Ala Ile Phe Thr Thr Thr Ile Met Gly Ile Ile
 35 40 45
 Phe Gln Pro Val Pro Met Gly Ala Ile Ala Ile Ile Gly Ile Ser Thr
 50 55 60
 Leu Leu Leu Thr Gln Thr Leu Thr Leu Glu Gln Gly Leu Ser Gly Phe
 65 70 75 80
 His Asn Pro Ile Ala Trp Leu Val Phe Leu Ser Phe Ser Ile Ala Lys
 85 90 95
 Gly Ile Ile Lys Thr Gly Leu Gly Glu Arg Ile Ala Tyr Phe Phe Val
 100 105 110
 Ser Ala Leu Gly Lys Ser Pro Leu Gly Leu Ser Tyr Gly Leu Val Ile
 115 120 125
 Thr Asp Phe Phe Leu Ala Pro Ala Ile Pro Ser Val Thr Ala Arg Ala
 130 135 140
 Gly Gly Ile Leu Tyr Pro Val Val Thr Ser Leu Ser Asp Ser Phe Gly
 145 150 155 160
 Ser Ser Ala Glu Lys Gly Thr Gln Asp Leu Ile Gly Ser Phe Leu Ile
 165 170 175
 Lys Val Ala Tyr Gln Ser Ser Val Ile Thr Ser Ala Met Phe Leu Thr
 180 185 190
 Ala Met Ala Gly Asn Pro Leu Val Ala Ala Leu Ala Gly His Val Gly
 195 200 205
 Val Ser Leu Ser Trp Val Leu Trp Ala Lys Ala Ala Ile Ile Pro Gly
 210 215 220
 Leu Leu Ser Leu Phe Leu Met Pro Ile Ile Leu Tyr Lys Leu Tyr Pro
 225 230 235 240
 Pro Lys Asn His Ile Leu
 245

<210>224

<211>123

<212>PRT

<213>Chlamydia pneumoniae

<400>224

Leu Ser Pro Arg Gly Leu Phe Pro Lys Ala Leu Thr Lys Lys Tyr Ala
 1 5 10 15
 Ile Arg Ser Pro Ser Pro Val Phe Met Ile Pro Phe Ala Ile Glu Lys
 20 25 30
 Glu Arg Lys Thr Asn His Ala Ile Gly Leu Trp Asn Pro Asp Asn Pro
 35 40 45
 Cys Ser Arg Val Asn Val Cys Val Ser Ser Ser Val Glu Ile Pro Ile
 50 55 60
 Met Ala Ile Ala Pro Met Gly Thr Gly Trp Lys Met Ile Pro Met Ile
 65 70 75 80
 Val Val Val Asn Ile Ala Lys Ser Cys Gln Ala Leu Glu Phe Ile Asp
 85 90 95
 Ala Gly Trp Gly Glu Asn Gln Met Pro Lys Ser Thr Ala Val Arg Lys
 100 105 110
 Arg Arg Asp Lys Lys Arg Phe Phe Leu Phe Thr
 115 120

<310>225

<211>550

<212>PRT

<213>Chlamydia pneumoniae

<400>225

Met His Pro Leu Tyr Val Asp Leu Asp Thr Ile Ile Ser Ser Tyr Ser
 1 5 10 15
 Pro Pro Leu Pro Lys Glu Phe Gln Glu Ala Ala Ser Leu Ile Ala Val

20							25				30				
Pro	Asp	Thr	Ser	His	Ser	Lys	Pro	Val	Val	Pro	Gly	Val	Lys	Thr	Leu
		35						40				45			
Phe	Pro	Gln	Thr	Tyr	His	Leu	Pro	Tyr	Leu	Lys	Phe	Val	Gln	Gly	Glu
	50					55					60				
Asn	Val	Val	His	Thr	Pro	Leu	Lys	Val	Gly	Val	Met	Phe	Ser	Gly	Gly
	65				70					75					80
Pro	Ala	Pro	Gly	Gly	His	Asn	Val	Ile	Gln	Gly	Leu	Phe	Asn	Ser	Leu
			85					90						95	
Lys	Asp	Phe	His	Pro	Asp	Ser	Ser	Leu	Val	Gly	Phe	Val	Asn	Asn	Gly
			100					105					110		
Arg	Gly	Leu	Thr	Asn	Asn	Lys	Ser	Ile	Asp	Ile	Thr	Glu	Glu	Phe	Leu
	115						120					125			
Ser	Lys	Phe	Arg	Asn	Ser	Gly	Gly	Phe	Asn	Cys	Ile	Gly	Thr	Gly	Arg
	130					135					140				
Lys	Lys	Ile	Val	Thr	Pro	Glu	Ala	Lys	Glu	Ala	Cys	Leu	Lys	Thr	Ala
	145				150					155					160
Glu	Ala	Leu	Asp	Leu	Asp	Gly	Leu	Val	Ile	Ile	Gly	Gly	Asp	Gly	Ser
			165						170					175	
Asn	Thr	Ala	Thr	Ala	Ile	Leu	Ala	Glu	Tyr	Phe	Ala	Lys	Arg	Arg	Pro
			180					185						190	
Lys	Thr	Ser	Ile	Val	Gly	Val	Pro	Lys	Thr	Ile	Asp	Gly	Asp	Leu	Gln
		195					200					205			
His	Thr	Phe	Leu	Asp	Leu	Ala	Phe	Gly	Phe	Asp	Thr	Ala	Thr	Lys	Phe
	210					215					220				
Tyr	Ser	Ser	Ile	Ile	Ser	Asn	Ile	Ser	Arg	Asp	Ala	Leu	Ser	Cys	Lys
	225					230				235					240
Ala	His	Tyr	His	Phe	Ile	Lys	Leu	Met	Gly	Arg	Ser	Ala	Ser	His	Ile
			245						250					255	
Ala	Leu	Glu	Cys	Ala	Leu	Gln	Thr	His	Pro	Asn	Ile	Ala	Leu	Ile	Gly
			260					265					270		
Glu	Glu	Ile	Ala	Glu	Lys	Asn	Leu	Pro	Leu	Lys	Thr	Ile	Ile	His	Lys
		275					280					285			
Ile	Cys	Ser	Val	Ile	Ala	Asp	Arg	Ala	Ala	Met	Glu	Lys	Tyr	Tyr	Gly
	290					295					300				
Val	Ile	Leu	Ile	Pro	Glu	Gly	Ile	Ile	Glu	Phe	Ile	Pro	Glu	Ile	Ile
	305				310					315					320
Asn	Leu	Ile	Thr	Glu	Ile	Glu	Ser	Leu	Ser	Glu	Tyr	Glu	Asp	Lys	Ile
			325						330					335	
Ser	Arg	Leu	Ser	Pro	Glu	Ser	Gln	Arg	Leu	Leu	Lys	Ser	Phe	Pro	Ala
			340					345					350		
Pro	Ile	Ile	Glu	Gln	Ile	Leu	Asn	Asp	Arg	Asp	Ala	His	Gly	Asn	Val
	355						360					365			
Tyr	Val	Ser	Lys	Ile	Ser	Val	Asp	Lys	Leu	Leu	Ile	His	Leu	Val	Ser
	370					375					380				
Asn	His	Leu	Gln	Gln	Tyr	Phe	Pro	Asn	Val	Pro	Phe	Asn	Ala	Ile	Ser
	385				390					395					400
His	Phe	Leu	Gly	Tyr	Glu	Gly	Arg	Ser	Gly	Leu	Pro	Thr	Lys	Phe	Asp
			405						410					415	
Asn	Thr	Tyr	Gly	Tyr	Ser	Leu	Gly	Tyr	Gly	Ala	Gly	Ile	Leu	Val	Arg
			420					425					430		
Asn	His	Cys	Asn	Gly	Tyr	Leu	Ser	Thr	Ile	Glu	Ser	Leu	Ala	Cys	Pro
	435							440					445		
Phe	Met	Lys	Trp	Lys	Leu	Arg	Ala	Ile	Pro	Val	Val	Lys	Met	Phe	Thr
	450					455					460				
Val	Lys	Gln	Gln	Ala	Asp	Gly	Thr	Leu	Gln	Pro	Lys	Ile	Lys	Lys	Tyr
	465				470					475					480
Leu	Val	Asp	Ile	Gly	Ser	Thr	Ala	Phe	Arg	Lys	Phe	Lys	Leu	Tyr	Arg
			485						490					495	
Lys	Ile	Trp	Ala	Leu	Glu	Asp	Ser	Tyr	Arg	Phe	Leu	Gly	Pro	Leu	Gln
		500						505					510		
Ile	Glu	Thr	Pro	Pro	Glu	Met	His	Ser	Asp	Asn	Phe	Pro	Pro	Leu	Thr
	515						520					525			
Leu	Leu	Leu	Asn	His	Asn	Phe	Trp	Gln	Arg	His	Gln	Gly	Cys	Ile	Glu

Ile Pro Asp Thr Thr Tyr

545 550

<210>226

<211>322

<212>PRT

<213>Chlamydia pneumoniae

<400>226

Tyr Gln Lys Leu Trp Glu Arg Glu Arg Glu Tyr Phe Lys Thr Ile Arg

1

5

10

15

Glu Lys Glu His Ala Thr Ile Ser Thr Met Leu Val Glu Leu Glu Ala

20

25

30

Leu Lys Arg Glu Phe Ala His Leu Lys Asp Gln Lys Pro Thr Ser Asp

35

40

45

Gln Glu Ile Thr Ser Leu Tyr Gln Cys Leu Asp His Leu Glu Phe Val

50

55

60

Leu Leu Gly Leu Gly Gln Asp Lys Phe Leu Lys Ala Thr Glu Asp Glu

65

70

75

80

Asp Val Leu Phe Gln Ser Gln Lys Ala Ile Asp Ala Trp Asn Ala Leu

85

90

95

Leu Thr Lys Ala Arg Asp Val Leu Gly Leu Gly Asp Ile Gly Ala Ile

100

105

110

Tyr Gln Thr Ile Glu Phe Leu Gly Ala Tyr Leu Ser Lys Val Asn Arg

115

120

125

Arg Ala Phe Cys Ile Ala Ser Glu Ile His Phe Leu Lys Thr Ala Ile

130

135

140

Arg Asp Leu Asn Ala Tyr Tyr Leu Leu Asp Phe Arg Trp Pro Leu Cys

145

150

155

160

Lys Ile Glu Glu Phe Val Asp Tyr Gly Asn Asp Cys Val Glu Ile Ala

165

170

175

Lys Arg Lys Leu Cys Thr Phe Glu Lys Glu Thr Lys Glu Leu Asn Glu

180

185

190

Ser Leu Leu Arg Glu Glu His Ala Met Glu Lys Cys Ser Ile Gln Asp

195

200

205

Leu Gln Arg Lys Leu Ser Asp Ile Ile Ile Glu Leu His Asp Val Ser

210

215

220

Leu Phe Cys Phe Ser Lys Thr Pro Ser Gln Glu Glu Tyr Gln Lys Asp

225

230

235

240

Cys Leu Tyr Gln Ser Arg Leu Arg Tyr Leu Leu Leu Leu Tyr Glu Tyr

245

250

255

Thr Leu Leu Cys Lys Thr Ser Thr Asp Phe Gln Glu Gln Ala Arg Ala

260

265

270

Lys Glu Glu Phe Ile Arg Glu Lys Phe Ser Leu Leu Glu Leu Glu Lys

275

280

285

Gly Ile Lys Gln Thr Lys Glu Leu Glu Phe Ala Ile Ala Lys Ser Lys

290

295

300

Leu Glu Arg Gly Cys Leu Val Met Arg Lys Tyr Glu Xaa Pro Leu Asn

305

310

315

320

Ile Val

<210>227

<211>101

<212>PRT

<213>Chlamydia pneumoniae

<400>227

Glu Cys Val Met Ser Tyr Pro Asp Ile Ser Asn Val Gln Ala Ser Ser

1

5

10

15

Ile Gln Ser Ala Leu Leu His Lys Thr Ser Asp Gln Ile Gln Gln Lys

20

25

30

Arg Cys Phe Lys Gln Ser Thr Phe Val Ile Leu Ala Val Ser Leu Val

35

40

45

Ile Ile Gly Ser Leu Phe Leu Leu Ala Gly Val Ala Ile Leu Thr Val

50

55

60

Phe Ser His Gly Val Leu Ser Leu Val Phe Gly Val Leu Gly Ile Val

65 70 75 80
 Leu Gly Leu Leu Leu Leu Ala Gly Gly Val Gly Leu Leu Val Glu Glu
 85 90 95
 Ala Lys Ser Leu Leu
 100
 <210>228
 <211>398
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>228
 Glu Leu Ser Tyr Gly Val Val Val Ser Ile Tyr Ser Glu Ile Leu Ser
 1 5 10 15
 Phe Ser Glu Leu Thr Ser Cys Lys His Ser Leu Phe Pro Phe Gly Pro
 20 25 30
 Ile Glu Thr Ala Ser Ile Arg Ile His His Val Phe Asn Val Val Ile
 35 40 45
 Val Cys Leu Ile Ile Leu Gly Thr Leu Phe Val Cys Leu Gly Met Val
 50 55 60
 Phe Leu Gly Val Phe Ser Thr Tyr Leu Leu Gly Met Ser Ser Met Ile
 65 70 75 80
 Leu Gly Leu Leu Leu Ile Ser Ile Gly Leu Ala Leu Leu Lys Phe Lys
 85 90 95
 Glu Arg Tyr Gly Leu Glu Pro Lys Glu Leu Phe Gly Val Glu Gly Gly
 100 105 110
 Phe Asp Lys Lys Leu Pro Ser Glu Ile Ile Gln Met Gln Asp Gln Ile
 115 120 125
 Ala Asp Leu Ala Arg Glu Leu Asp Leu Glu Gln Lys Lys Asp Thr Leu
 130 135 140
 Ile Arg Gly Phe Ser Ala Arg Leu Asp Val Leu Glu Gly Ser Lys Thr
 145 150 155 160
 Glu Lys Lys Gln Ile Leu Lys Ile Gly Val Pro Arg Asn Leu Ser Glu
 165 170 175
 Ile Gln Glu Arg Ala Gln Glu Gln Asn Ser Ile Leu Glu Gln Cys Lys
 180 185 190
 Glu Ala Leu Leu Phe Arg Arg Lys Ser Ala Gln Glu Ile Phe Lys Lys
 195 200 205
 Leu Tyr Asp Arg Lys Ala Ala Phe Trp Arg Ser Tyr Arg Glu Asp Leu
 210 215 220
 Trp Cys Tyr Ser Glu Ile His Val Ser Lys Lys Ala Leu Ser Asn Leu
 225 230 235 240
 Tyr Ile Gly Asp Val Phe Glu Gly Thr Ala Pro His Phe Leu Met Glu
 245 250 255
 Ala Tyr Ala Met Cys Arg Thr Ala Lys Asn Leu Arg Asn Tyr Val Lys
 260 265 270
 Val Cys Val Glu Asp Met Arg Val Asn Glu Glu Lys Lys Arg Ala Lys
 275 280 285
 Gln Leu Ser Val Ser Glu Leu Leu Cys Cys Cys Thr Glu Ile Glu Thr
 290 295 300
 Asp Leu Glu Asn Glu Thr Asn Leu Phe Thr Ser Asp Ser Glu Asp Val
 305 310 315 320
 Leu Glu Glu Tyr Gln Ile His Cys Ile Arg Val Thr Met Leu His Ala
 325 330 335
 Leu Trp Ala Ile Tyr Asn Asp Glu Val Val Ser Arg Lys Pro Ile Asp
 340 345 350
 Thr Leu Asp Arg Val Arg Ala Arg Met Ala Val Glu Asp Cys Ile Glu
 355 360 365
 Thr Phe Glu Glu Leu Gln Met Cys Val Val His Thr Lys Thr Leu Glu
 370 375 380
 Leu Glu Ile Ala Gln Leu Tyr Val Asp Ile Leu Leu Glu Ala
 385 390 395

<210>229

<211>413

<212>PRT

<213>Chlamydia pneumoniae

<400>229

Arg Met Tyr Phe Ser His Val Ser Thr Val Val Val Val Val Ala Leu Phe
1 5 10 15
Ile Leu Gly Ile Phe Phe Leu Ser Gly Ser Leu Ala Phe Leu Val His
20 25 30
Thr Ser Cys Gly Val Leu Leu Gly Ala Ala Leu Pro Ile Leu Cys Ile
35 40 45
Gly Leu Val Leu Leu Ala Val Ala Leu Ile Val Phe Leu Cys His Lys
50 55 60
His Lys Thr Arg Gln Asp Leu Asp Tyr Tyr Asp Gln Asp Leu Asp Ser
65 70 75 80
Leu Val Ile His Lys Lys Glu Ile Pro Asn Asp Ile Ser Glu Leu Arg
85 90 95
Val Thr Phe Glu Lys Leu Gln Asn Leu Phe Gln Phe His Thr Lys Asp
100 105 110
Phe Ser Asp Leu Ser Gln Glu Leu Gln Gly Lys Phe Ile Asn Cys Met
115 120 125
Glu Lys Trp Leu Thr Leu Glu Asp Glu Val Thr Lys Phe Leu Ile Val
130 135 140
Arg Asp Arg Phe Leu Glu Thr Arg Arg Asn Phe Thr Thr Phe Gly Glu
145 150 155 160
Gln Val Lys Gly Ile Gln Ser Asn Ile Phe Asp Leu His Glu Glu Lys
165 170 175
Ser Ser Leu Tyr Leu Glu Leu Tyr Arg Leu Arg Lys Asp Leu Gln Val
180 185 190
Leu Leu Asn Phe Phe Leu Leu Pro Pro Gly Ile Leu Lys Val Asp Tyr
195 200 205
Asp Glu Ile Glu Ala Ile Lys Gly Leu Phe Ile Arg Leu Thr Ser Arg
210 215 220
Leu Asp Lys Leu Asp Val Lys Ala Gln Glu Arg Lys Lys Phe Ile Asn
225 230 235 240
Glu Met Ser Arg Glu Phe Lys Glu Val Glu Lys Ala Phe Asp Ile Val
245 250 255
Asp Arg Ala Thr Lys Lys Leu Met Asp Arg Ala Lys Lys Glu Ser Pro
260 265 270
Ala Arg Leu Phe Met Gly Arg Thr Glu Ser Leu Leu Glu Met Lys Lys
275 280 285
Asn Glu Glu Ala Leu Lys Asn Gln Gly Leu Asp Pro Glu Asn Leu Ser
290 295 300
His Pro Glu Leu Phe Ser Pro Tyr Gln Gln Leu Leu Ile Leu Asn Tyr
305 310 315 320
Leu Asn Ser Glu Ile Val Leu His His Tyr Glu Phe Leu Ile Ser Gly
325 330 335
Thr Val Thr Ser Gly Leu Thr Leu Glu Glu Cys Glu Asn Arg Met Arg
340 345 350
Ala Ala Ser Thr Gly Leu Asn Ala Leu Leu Val Arg Lys Leu Gln Phe
355 360 365
Arg Gly Ala Ile Lys Ser Ala Tyr Phe Glu Lys Leu Thr Glu Ile Glu
370 375 380
Lys Glu Leu Arg Ser Leu Gln Asp Val Ile Xaa Ser Leu Glu Leu Glu
385 390 395 400
Leu Ile His Lys Ile Lys Asp Ile Val Thr Glu Glu Thr
405 410

<210>230

<211>193

<212>PRT

<213>Chlamydia pneumoniae

<400>230

Ile Cys Phe Lys Arg Arg Lys Asp Arg Thr Gly Met Leu Ser Arg Gln
1 5 10 15
Lys Glu Ser Arg Glu Thr Gly Gly Val Ser Arg Ser Tyr Arg Arg Glu
20 25 30
Leu Leu Glu Val Leu Lys Thr Arg Leu Ser Val Glu Lys Glu Ile Gln
35 40 45

Leu Phe Glu Glu Val Val Ser Ala Phe Glu Glu Lys Leu Ala Ser Leu
 50 55 60
 His Arg Thr Val Phe Ser Glu Glu Glu Leu Gln Glu Ala Leu Asp Lys
 65 70 75 80
 Ala Lys Ala Glu Leu Leu Asp Ile Gln Val Arg Lys Ser Val Val Glu
 85 90 95
 Asp Leu Ser Cys Glu Pro Thr Leu Ile Gln Tyr His Leu Leu Arg Leu
 100 105 110
 Tyr Glu Val Gln Cys Arg Ile Val Glu Gln Phe Leu Thr Gln Thr Phe
 115 120 125
 Ser Ser Glu Gln Glu Lys Val Leu Glu Glu Tyr Glu Ala Leu Lys Ala
 130 135 140
 Arg Ile Arg Lys Thr Leu Arg Val Lys Leu Asp Gln Val Arg Ala Asn
 145 150 155 160
 Val Ala Phe Val Ala Ser Thr Thr Asp Leu Leu Ser Glu Ser Glu Ser
 165 170 175
 Leu Asp Gly Asn Asp Ser Val Phe Glu Asp Ala His Asp Asp Phe Leu
 180 185 190
 Asp

<210>231

<211>267

<212>PRT

<213>Chlamydia pneumoniae

<400>231

Leu Thr Ser Ser Lys Lys Gln Val Met Ser Ser Ala Ile Ala Arg Asp
 1 5 10 15
 Cys Phe Pro Ser Pro Ser Pro Gln Pro Ser Ser Thr Leu Gly Val His
 20 25 30
 Pro Pro Lys Tyr Lys Ser Leu Ile Leu Ser Val Ser Leu Ile Val Leu
 35 40 45
 Gly Val Leu Leu Leu Cys Val Gly Met Leu Leu Leu Val Asn Ala Ile
 50 55 60
 Phe Ser Phe Ser Val Leu Thr Val Gly Leu Gly Gly Ala Gly Val Phe
 65 70 75 80
 Leu Gly Ser Leu Leu Leu Ile Leu Gly Leu Ile Phe Phe Val Ser Tyr
 85 90 95
 His Arg Lys Leu Ser Glu Ala Thr Arg Ser Leu Glu Gln Lys Ile Thr
 100 105 110
 Leu Glu Tyr Gln Pro Trp Ala Asp Leu Arg Lys Glu Leu Asn Glu Val
 115 120 125
 Gln Glu Trp Ser Asn Phe Leu Leu Asp Glu Trp Glu Asp Phe Lys Glu
 130 135 140
 Val Val Ala Gln His Lys Ser Gln Phe Ala Thr Phe Glu Gly Asp Leu
 145 150 155 160
 Leu Leu Phe Gly Arg Glu Val Glu Lys Tyr Glu Thr Ile Trp Lys Glu
 165 170 175
 Leu Asp Gly Arg Asp Val Ala Leu Leu Thr Glu Leu Lys Asn Ile Trp
 180 185 190
 Gly Pro Leu Glu Phe Leu Arg Lys Lys Gly Asp Arg Leu Gln Cys Glu
 195 200 205
 Ile Asp Lys Leu Arg Lys Glu Val Met Lys Val Gly Lys Ser Gly Leu
 210 215 220
 Lys Leu Ala Cys Glu Leu Thr Lys Phe Lys Ser Ala Leu Lys Asp Val
 225 230 235 240
 Lys Ile Glu Gln Glu Cys Tyr Arg Asp Lys Arg Lys Val Glu Lys Leu
 245 250 255
 Glu Val Phe Pro Glu Val Ile Gly Gly Asn Tyr
 260 265

<210>232

<211>150

<212>PRT

<213>Chlamydia pneumoniae

<400>232

Asn Lys Ala Arg Thr Met Asn Pro Val Thr Phe Asp Arg Ile Gln Val
 1 5 10 15
 Asp Phe Ile Pro Glu Asp Thr Ser Leu Arg Ile Asn Ser Tyr Ile Val
 20 25 30
 Ala Gly Gly Leu Leu Ile Leu Gly Val Val Leu Ser Ile Leu Ser Val
 35 40 45
 Ile Cys Leu Asp Ile Gly Leu Val Gly Leu Ser Ala Gly Ala Ala Phe
 50 55 60
 Thr Leu Gly Leu Gly Cys Leu Ile Phe Ala Leu Phe Leu Phe Ser Phe
 65 70 75 80
 Ser Leu Ile Leu Leu Leu Ser Gln Glu Lys Arg Val Pro Asp Val Leu
 85 90 95
 Ser Leu Tyr Leu Glu Lys Glu Val Pro Gln Tyr Glu Thr Pro Leu Tyr
 100 105 110
 Lys Glu Asp Leu Glu Ser Glu Arg Asp Met Ser Ala Ile Ser Glu Arg
 115 120 125
 Leu Gly Ile Ile Glu Glu Lys Leu Arg Ile Ala Glu Lys Phe Arg Tyr
 130 135 140
 Ser Asp Ser Val Phe Val
 145 150
 <310>233
 <211>375
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>233
 Gly Ser Ser Leu Ala Leu Lys Phe His Leu Ile His Gln Ser Lys Lys
 1 5 10 15
 Ser Gln Ala Arg Val Gly Gln Ile Glu Thr Ser His Gly Val Ile Asp
 20 25 30
 Thr Pro Ala Phe Val Pro Val Ala Thr His Gly Ala Leu Lys Gly Val
 35 40 45
 Ile Asp His Ser Asp Ile Pro Leu Leu Phe Cys Asn Thr Tyr His Leu
 50 55 60
 Leu Leu His Pro Gly Pro Glu Ala Val Ala Lys Leu Gly Gly Leu His
 65 70 75 80
 Gln Phe Met Gly Arg Gln Ala Pro Ile Ile Thr Asp Ser Gly Gly Phe
 85 90 95
 Gln Ile Phe Ser Leu Ala Tyr Gly Ser Val Ala Glu Glu Ile Lys Ser
 100 105 110
 Cys Gly Lys Lys Lys Gly Met Ser Ser Leu Val Lys Ile Thr Asp Glu
 115 120 125
 Gly Ala Trp Phe Lys Ser Tyr Arg Asp Gly Arg Lys Leu Phe Leu Ser
 130 135 140
 Pro Glu Leu Ser Val Gln Ala Gln Lys Asp Leu Gly Ala Asp Ile Ile
 145 150 155 160
 Ile Pro Leu Asp Glu Leu Leu Pro Phe His Thr Asp Gln Glu Tyr Phe
 165 170 175
 Leu Thr Ser Cys Ser Arg Thr Tyr Val Trp Glu Lys Arg Ser Leu Glu
 180 185 190
 Tyr His Arg Lys Asp Pro Arg His Gln Ser Met Tyr Gly Val Ile His
 195 200 205
 Gly Gly Leu Asp Pro Glu Gln Arg Arg Ile Gly Val Arg Phe Val Glu
 210 215 220
 Asp Glu Pro Phe Asp Gly Ser Ala Ile Gly Gly Ser Leu Gly Arg Asn
 225 230 235 240
 Leu Gln Glu Met Ser Glu Val Val Lys Ile Thr Thr Ser Phe Leu Ser
 245 250 255
 Lys Glu Arg Pro Val His Leu Leu Gly Ile Gly Asp Leu Pro Ser Ile
 260 265 270
 Tyr Ala Met Val Gly Phe Gly Ile Asp Ser Phe Asp Ser Ser Tyr Pro
 275 280 285
 Thr Lys Ala Ala Arg His Gly Leu Ile Leu Ser Lys Ala Gly Pro Ile
 290 295 300
 Lys Ile Gly Gln Gln Lys Tyr Ser Gln Asp Ser Ser Thr Ile Asp Pro

305 310 315 320
 Ser Cys Ser Cys Leu Thr Cys Leu Ser Gly Ile Ser Arg Ala Tyr Leu
 325 330 335
 Arg His Leu Phe Lys Val Arg Glu Pro Asn Ala Ala Ile Trp Ala Ser
 340 345 350
 Ile His Asn Leu His His Met Gln Gln Val Met Lys Glu Ile Arg Glu
 355 360 365
 Ala Ile Leu Lys Asp Glu Ile
 370 375

<210>234

<211>123

<212>PRT

<213>Chlamydia pneumoniae

<400>234

Gly Glu Lys Phe Leu Lys Pro Trp Glu Lys Leu Arg Glu Leu Asn Ala
 1 5 10 15
 Phe Glu Leu Thr Gln Pro Glu Glu Tyr Arg Asn Arg Trp Val Leu Met
 20 25 30
 Pro Cys Leu Lys Cys Arg Phe Cys Arg Thr Gln His Ala Lys Val Trp
 35 40 45
 Ser Tyr Arg Cys Val His Glu Ala Ser Leu Tyr Glu Lys Asn Cys Phe
 50 55 60
 Leu Thr Leu Thr Tyr Asp Asp Lys His Leu Pro Gln Tyr Gly Ser Leu
 65 70 75 80
 Val Lys Leu His Leu Gln Leu Phe Leu Lys Arg Leu Arg Lys Met Ile
 85 90 95
 Ser Pro His Lys Ile Arg Tyr Phe Glu Cys Gly Ala Tyr Gly Thr Lys
 100 105 110
 Leu Gln Arg Pro His Tyr His Leu Leu Ser
 115 120

<210>235

<211>128

<212>PRT

<213>Chlamydia pneumoniae

<400>235

Ser Thr Met Leu Ile Gly Arg Tyr Ser Ser Asp Asp Gln Phe Thr Glu
 1 5 10 15
 Ala Thr Lys Asn Thr Pro Thr Ile Ile Lys Leu Gly Phe Val Arg Asp
 20 25 30
 Asn Leu Glu Gly Leu Thr Asn Pro Ile Ser Glu Ile Val Ser Glu Thr
 35 40 45
 Ser Ser Ser Ile Lys Asp Ser Val Leu Arg Ser Leu Pro Ile Leu Gly
 50 55 60
 Ser Ile Leu Gly Cys Ala Arg Leu Tyr Ser Thr Leu Ser Thr Asn Asp
 65 70 75 80
 Pro Leu Asp Glu Thr Gln Glu Lys Ile Trp His Thr Ile Phe Gly Ala
 85 90 95
 Leu Glu Thr Leu Gly Leu Gly Ile Leu Ile Leu Leu Phe Lys Ile Ile
 100 105 110
 Phe Val Ile Leu His Cys Ile Phe His Leu Val Ile Gly Phe Cys Lys
 115 120 125

<210>236

<211>91

<212>PRT

<213>Chlamydia pneumoniae

<400>236

Tyr Thr Phe Lys Asn Pro Lys Lys Asn Lys Lys Met Lys Pro Asn Ser
 1 5 10 15
 Ile Ile Phe Leu Glu Asn Thr Lys His Tyr Pro Asp Ile Phe Arg Glu
 20 25 30
 Gly Phe Val Arg Asp Arg His Gly Leu Met Glu Ala Ser Asp Trp Leu
 35 40 45
 Leu Ser Thr Glu Ile Thr Ile Ile Arg Ser Ile Leu Gly Ala Ile Pro
 50 55 60

Ile Leu Gly Asn Leu Gly Ala Gly Arg Leu Tyr Val Trp Tyr
 65 70 75 80
 Thr Ser Asp Glu Asp Trp Lys Lys Gln Val Val
 85 90

<210>237

<211>100

<212>PRT

<213>Chlamydia pneumoniae

<400>237

Arg Gly Met Leu Pro Ala Trp Val Thr Pro Gly Phe Leu Thr Lys Leu
 1 5 10 15
 Ala Glu Gly Leu Lys Ile Asn Ser Gly Arg Ser Val Asn Pro Lys Gly
 20 25 30
 Leu Glu Gln Cys Ile Ala Ser Gly Gln Tyr Asn Glu Gln Ile Lys Lys
 35 40 45
 Asn Asn Leu Tyr Gly Ser Gln Val Leu Gly Gly Gln Leu Ala Thr Pro
 50 55 60
 Thr Ala Val Val Gly Asp Tyr Leu Ile Glu Asp Pro Thr Phe His Glu
 65 70 75 80
 Ile Glu Arg Ala Ile Gln His Ile Arg Gln Leu Gln Ala Val Glu Gly
 85 90 95
 Asp His Asp Asp
 100

<210>238

<211>140

<212>PRT

<213>Chlamydia pneumoniae

<400>238

Gln Ile Leu Phe Thr Ser Pro Leu Asn Lys Lys Xaa Leu Val Leu Cys
 1 5 10 15
 Thr Ala Met Phe Phe Ile Val Cys Phe Gly Phe Leu Ile His Lys Lys
 20 25 30
 His Thr Ile Leu Pro Pro Lys Ala His Ile Pro Thr Asn Ala Lys His
 35 40 45
 Phe Pro Thr Ile Gly Asn Pro Tyr Ala Pro Ile Asn Ile Thr Val Phe
 50 55 60
 Glu Glu Pro Ser Cys Ser Ala Cys Ala Glu Phe Thr Thr Glu Val Phe
 65 70 75 80
 Pro Leu Leu Lys Lys His Tyr Ile Asp Thr Gly Glu Ile Ser Phe Thr
 85 90 95
 Leu Ile Pro Val Cys Phe Ile Arg Gly Ser Lys Pro Ala Ala Gln Ala
 100 105 110
 Leu Leu Cys Ile Tyr His His Asp Ser Thr Ser Gly Arg Tyr Arg Arg
 115 120 125
 Leu Tyr Gly Ile Phe Pro Ser Tyr Phe Asp Leu Ser
 130 135 140

<210>239

<211>154

<212>PRT

<213>Chlamydia pneumoniae

<400>239

Leu Phe Thr Tyr Phe Leu Ser Tyr Cys Phe Pro Asn Gln Thr Phe Ser
 1 5 10 15
 Ser Leu Val Arg Ser Pro Thr Arg His Leu Gly Tyr Pro Phe Arg Leu
 20 25 30
 Arg Cys Arg Arg Ser Pro Thr Ile Phe Ala Asn Asp Thr Leu Ile Gly
 35 40 45
 Phe Ala Ile Leu Ala Val Val Cys Ile Ser Pro Thr Arg Pro Glu Ala
 50 55 60
 Leu Glu Val Gly Pro Thr Leu Pro Glu Gly Phe Ser Tyr Asn Pro Ser
 65 70 75 80
 Ala Gly Gly Arg Arg Ala Ala Val Leu Phe Leu Ser Leu Leu Gly Trp
 85 90 95
 Leu Glu Ala Arg Tyr Leu Thr Ala Ser Ser Leu Gly Ile Thr Ser Ser

100 105
 Gln Ser Ser Asn Phe Leu Leu Leu Tyr Ser Ser Ile Met Thr Val Tyr
 115 120 125
 Ser Leu Leu Val Val Leu Ser Leu Ala Gly Ser Glu Arg Arg Trp His
 130 135 140
 Thr Arg Pro Lys Ile Val Ile Ala Thr Ala
 145 150
 <210>240
 <211>94
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>240
 Leu Leu Ala Met Leu Cys Leu Thr Ile Glu Pro Ala Leu Ala Val Val
 1 5 10 15
 Phe Ala Tyr Asp Glu Thr Arg Ala Thr Leu Arg Tyr Ile Ser Gln Phe
 20 25 30
 Leu Gly Asp Lys Arg Ala Leu Thr Arg Ala Ser Phe Phe Gly Ser Glu
 35 40 45
 Tyr Tyr Lys His Thr Leu Ser Trp Glu Glu Arg Thr Val Arg Pro Leu
 50 55 60
 Arg Lys Ala Tyr Lys Gln Ala Phe Glu Gly Ile Ser Phe Pro Ile Asn
 65 70 75 80
 Gln Leu Leu Ala Ile Leu Val Ala Ser Phe Cys Lys Ser Gln
 85 90
 <210>241
 <211>234
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>241
 Arg Phe Lys Lys Ala Leu Ile Tyr Met Ser Ser Gln Pro Leu Val Thr
 1 5 10 15
 Thr Ser Ser Ser Leu Ser Arg Tyr Val Val Leu Thr Gly Glu Glu Lys
 20 25 30
 Val Ala Cys Tyr Lys Lys Ala Phe Asn His Ile Trp His Gly Ala Pro
 35 40 45
 Ala Ile Ile Leu Ala Ala Ala Leu Leu Met Phe Cys Ile Phe Gly Phe
 50 55 60
 Val Leu Gly Ser Ile Leu Leu Gly Ala Pro Leu Glu Gly Ala Ser Ile
 65 70 75 80
 Leu Tyr Asp Val Ile Leu Pro Trp Leu Leu Pro Ser Ile Leu Val Phe
 85 90 95
 Val Leu Leu Val Leu Pro Leu Asn Ile Tyr Ala Tyr Ser His His Lys
 100 105 110
 Gln Val Leu Ala Leu His Glu Arg Ile Thr Gln Ser Asn Tyr Lys Glu
 115 120 125
 Ile Tyr Asp His Cys Glu Lys Glu Lys Lys Thr Pro Asn Lys Lys Ala
 130 135 140
 Leu Ser Leu Tyr Ile Glu Ser Gln Val Leu Val Pro Glu Tyr Ser Lys
 145 150 155 160
 Arg Phe Ser Ser Met Ile Leu Gly Lys Thr Leu Lys Ile Ile Pro Lys
 165 170 175
 Lys Asp Ser Pro Glu Ser Leu Lys His Asp Glu Leu Ile Gln Lys Ala
 180 185 190
 Leu Glu Arg Ala Lys Glu Asn Ile Tyr Met Asn Lys Asn Gln Arg Glu
 195 200 205
 Lys Arg Asp Glu Arg Glu Ala Lys Lys Glu Ala Lys Asn Ala Ser Lys
 210 215 220
 Thr Asn Pro Leu Trp Glu Gly Leu Gly Thr
 225 230
 <210>242
 <211>235
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>242

Met Leu Gln Ala Arg Leu Cys Tyr Ser Cys Asp Gln Val Ile
1 5 10 15
Leu Lys Asp Ala Ser Phe Gln Ala Ser Pro Gly Thr Ile Thr Ile Ile
20 25 30
Leu Gly Ser Ser Gly Val Gly Lys Thr Thr Leu Phe Arg Leu Leu Ala
35 40 45
Gly Phe Leu Pro Leu Gln Glu Gly Glu Leu Leu Trp Asn Gly Ser Pro
50 55 60
Leu Asn Arg Lys Asp Val Ala Tyr Met Gln Gln Lys Glu Ala Leu Leu
65 70 75 80
Pro Trp Arg Thr Ala Leu Lys Asn Met Thr Leu Ser Thr Glu Leu Gly
85 90 95
Ile Asn Thr Ser His Asn Ala Leu Ser Asn Glu Arg Leu Glu Glu Ile
100 105 110
Ile His Asn Phe Asp Leu Gly Gln Leu Leu Asp Arg Tyr Pro Asp Glu
115 120 125
Leu Ser Gly Gly Gln Arg Gln Arg Ile Ala Leu Ala Ala Gln Cys Leu
130 135 140
Ser Leu Lys Pro Ile Leu Leu Leu Asp Glu Pro Phe Ser Ser Leu Asp
145 150 155 160
Val Leu Leu Lys Glu Gln Leu Tyr Gln Asp Ile Val Ala Leu Ala Lys
165 170 175
Lys Glu Asn Lys Thr Val Leu Leu Val Thr His Asp Phe His Asp Val
180 185 190
Ser Cys Leu Gly Asp Val Leu Tyr Val Ile Lys Asn Lys Thr Leu Thr
195 200 205
Pro Val Pro Leu Asp Pro Ser Met Arg Pro Leu Asn Asn Gly Leu Cys
210 215 220
Phe Ile Lys Asp Leu Lys Lys His Leu Tyr Thr
225 230 235

<210>243

<211>301

<212>PRT

<213>Chlamydia pneumoniae

<400>243

Lys Lys Phe Leu Met Arg Arg Phe Leu Phe Leu Ile Leu Ser Ser Leu
1 5 10 15
Pro Leu Val Ala Phe Ser Ala Asp Asn Phe Thr Ile Leu Glu Glu Lys
20 25 30
Gln Ser Pro Leu Ser Arg Val Ser Ile Phe Ala Leu Pro Gly Val
35 40 45
Thr Pro Val Ser Phe Asp Gly Asn Cys Ser Ile Pro Trp Phe Ser His
50 55 60
Ser Lys Lys Thr Leu Glu Gly Gln Arg Ile Tyr Tyr Ser Gly Asp Ser
65 70 75 80
Phe Gly Lys Tyr Phe Val Val Ser Ala Leu Trp Pro Asn Lys Val Ser
85 90 95
Ser Ala Val Val Ala Cys Asn Met Ile Leu Lys His Arg Val Asp Leu
100 105 110
Ile Leu Ile Ile Gly Ser Cys Tyr Ser Arg Ser Gln Asp Ser Arg Phe
115 120 125
Gly Ser Val Leu Val Ser Lys Gly Tyr Ile Asn Tyr Asp Ala Asp Val
130 135 140
Arg Pro Phe Phe Glu Arg Phe Glu Ile Pro Asp Ile Lys Lys Ser Val
145 150 155 160
Phe Ala Thr Ser Glu Val His Arg Glu Ala Ile Leu Arg Gly Gly Glu
165 170 175
Glu Phe Ile Ser Thr His Lys Gln Glu Ile Glu Glu Leu Leu Lys Thr
180 185 190
His Gly Tyr Leu Lys Ser Thr Thr Lys Thr Glu His Thr Leu Met Glu
195 200 205
Gly Leu Val Ala Thr Gly Glu Ser Phe Ala Met Ser Arg Asn Tyr Phe
210 215 220
Leu Ser Leu Gln Lys Leu Tyr Pro Glu Ile His Gly Phe Asp Ser Val

225 235 240
 Ser Gly Ala Val Ser Gln Val Cys Tyr Glu Tyr Ser Ile Pro Cys Leu
 245 250 255
 Gly Val Asn Ile Leu Leu Pro His Pro Leu Glu Ser Arg Ser Asn Glu
 260 265 270
 Asp Trp Lys His Leu Gln Ser Glu Ala Ser Lys Ile Tyr Met Asp Thr
 275 280 285
 Leu Leu Lys Ser Val Leu Lys Glu Leu Cys Ser Ser His
 290 295 300
 <210>244
 <211>233
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>244
 Phe Ile Met Leu Gln Ser Cys Lys Lys Ala Leu Leu Ser Ile Val Val
 1 5 10 15
 Ser Ile Leu Ala Phe His Pro Ile Pro Gly Met Gly Val Glu Ala Lys
 20 25 30
 Ser Gly Phe Leu Gly Lys Val Lys Gly Trp Phe Ser Lys Lys Glu Ile
 35 40 45
 Gln Glu Glu Ala Arg Ile Leu Pro Val Lys Asp Ser Leu Ser Trp Lys
 50 55 60
 Arg Tyr Asp Tyr Thr Ser Ser Ser Gly Phe Ser Val Glu Phe Pro Gly
 65 70 75 80
 Glu Pro Asp His Ser Gly Gln Ile Val Glu Val Pro Gln Ser Glu Ile
 85 90 95
 Thr Ile Arg Tyr Asp Thr Tyr Val Thr Glu Thr His Pro Asp Asn Thr
 100 105 110
 Val Tyr Val Val Ser Val Trp Glu Tyr Pro Glu Lys Val Asp Ile Ser
 115 120 125
 Arg Pro Glu Leu Asn Leu Gln Glu Gly Phe Ser Gly Met Met Gln Ala
 130 135 140
 Leu Pro Glu Ser Gln Val Leu Phe Met Gln Ala Arg Gln Ile Gln Gly
 145 150 155 160
 His Lys Ala Leu Glu Phe Trp Ile Val Cys Glu Asp Val Tyr Phe Arg
 165 170 175
 Gly Met Leu Ile Ser Val Asn His Thr Leu Tyr Gln Val Phe Met Val
 180 185 190
 Tyr Lys Asn Lys Asn Pro Gln Ala Leu Asp Lys Glu Tyr Glu Ala Phe
 195 200 205
 Ser Gln Ser Phe Lys Ile Thr Lys Ile Arg Glu Pro Arg Thr Ile Pro
 210 215 220
 Ser Ser Val Lys Lys Lys Val Ser Leu
 225 230
 <210>245
 <211>210
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>245
 Val Phe Val Arg Tyr Leu Leu Met Lys Pro Glu Glu Ser Glu Cys Leu
 1 5 10 15
 Cys Ile Gly Val Leu Pro Ala Arg Trp Asn Ser Ser Arg Tyr Pro Gly
 20 25 30
 Lys Pro Leu Ala Lys Ile His Gly Lys Ser Leu Ile Gln Arg Thr Tyr
 35 40 45
 Glu Asn Ala Ser Gln Ser Ser Leu Leu Asp Lys Ile Val Val Ala Thr
 50 55 60
 Asp Asp Gln His Ile Ile Asp His Val Thr Asp Phe Gly Gly Tyr Ala
 65 70 75 80
 Val Met Thr Ser Pro Thr Cys Ser Asn Gly Thr Glu Arg Thr Gly Glu
 85 90 95
 Val Ala Arg Lys Tyr Phe Pro Lys Ala Glu Ile Ile Val Asn Ile Gln
 100 105 110
 Gly Asp Glu Pro Cys Leu Asn Ser Glu Val Val Asp Ala Leu Val Gln

115 120
 Lys Leu Arg Ser Ser Pro Glu Ala Glu Leu Val Thr Pro Val Ala Leu
 130 135 140
 Thr Thr Asp Arg Glu Glu Ile Leu Thr Glu Lys Lys Val Lys Cys Val
 145 150 155 160
 Phe Asp Ser Glu Gly Arg Ala Leu Tyr Phe Ser Arg Ser Pro Ile Pro
 165 170 175
 Phe Ile Leu Lys Lys Ala Thr Pro Val Tyr Leu His Ile Gly Val Tyr
 180 185 190
 Ala Phe Lys Arg Glu Ala Leu Phe Arg Tyr Leu Thr Ala Xaa Leu Xaa
 195 200 205
 Ser Ser
 210
 <210>246
 <211>537
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>246
 Met Pro Phe Lys Cys Ile Phe Leu Thr Gly Gly Val Val Ser Ser Leu
 1 5 10 15
 Gly Lys Gly Leu Thr Ala Ala Ser Leu Ala Leu Ile Leu Glu Arg Gln
 20 25 30
 Arg Leu Asn Val Ala Met Leu Lys Leu Asp Pro Tyr Leu Asn Val Asp
 35 40 45
 Pro Gly Thr Met Asn Pro Phe Glu His Gly Glu Ile Tyr Val Thr Asp
 50 55 60
 Asp Gly Val Glu Thr Asp Leu Asp Leu Gly His Tyr His Arg Phe Ser
 65 70 75 80
 Ser Ala Ala Leu Ser Arg His Ser Ser Ala Thr Ser Gly Gln Ile Tyr
 85 90 95
 Ala Arg Val Ile Lys Arg Glu Arg Glu Gly Asp Tyr Leu Gly Ser Thr
 100 105 110
 Val Gln Val Ile Pro His Ile Thr Asn Glu Ile Ile Gln Val Ile Leu
 115 120 125
 Asp Ala Ala Lys Glu His Ser Pro Asp Val Leu Ile Val Glu Ile Gly
 130 135 140
 Gly Thr Ile Gly Asp Ile Glu Ser Leu Pro Phe Leu Glu Ala Ile Arg
 145 150 155 160
 Gln Phe Arg Tyr Asp His Ser Glu Asp Cys Leu Asn Ile His Met Thr
 165 170 175
 Tyr Val Pro Tyr Leu Glu Ala Ala Asp Glu Val Lys Ser Lys Pro Thr
 180 185 190
 Gln His Ser Val Gln Thr Leu Arg Gly Ile Gly Ile Ile Pro Asp Ala
 195 200 205
 Ile Leu Cys Arg Ser Glu Lys Pro Leu Thr Gln Glu Val Lys Ser Lys
 210 215 220
 Ile Ser Leu Phe Cys Asn Val Pro Asn Arg Ala Val Phe Asn Val Ile
 225 230 235 240
 Asp Val Lys His Thr Ile Tyr Glu Met Pro Leu Met Leu Ala Gln Glu
 245 250 255
 Lys Ile Ala Asn Phe Ile Gly Glu Lys Leu Lys Leu Ala Thr Val Pro
 260 265 270
 Glu Asn Leu Asp Asp Trp Arg Val Leu Val Asn Gln Leu Ser Gln Asp
 275 280 285
 Leu Pro Lys Val Lys Ile Gly Val Val Gly Lys Tyr Val Gln His Arg
 290 295 300
 Asp Ala Tyr Lys Ser Ile Phe Glu Ala Leu Thr His Ala Ala Leu Arg
 305 310 315 320
 Leu Gly His Ala Ala Glu Ile Ile Pro Ile Asp Ala Glu Asp Glu Asn
 325 330 335
 Leu Thr Met Glu Leu Ser Gln Cys Asp Ala Cys Leu Val Pro Gly Gly
 340 345 350
 Phe Gly Val Arg Gly Trp Glu Gly Lys Ile Ala Ala Ala Lys Phe Cys
 355 360 365

Arg Gly Gln Gly Ile Pro Tyr Phe Gly Ile Cys Leu Gly Met Gln Val
 370 375 380
 Leu Val Val Gly Tyr Ala Arg Asn Val Leu Asn Leu Asp Gln Ala Asn
 385 390 395 400
 Ser Leu Glu Met Asp Pro Asn Thr Pro His Pro Ile Val Tyr Val Met
 405 410 415
 Glu Gly Gln Asp Pro Leu Val Ala Thr Gly Gly Thr Met Arg Leu Gly
 420 425 430
 Ala Tyr Pro Cys Leu Leu Lys Pro Gly Ser Lys Ala His Lys Ala Tyr
 435 440 445
 Asn Glu Ser Ser Leu Ile Gln Glu Arg His Arg His Arg Tyr Glu Val
 450 455 460
 Asn Pro Asp Tyr Ile Gln Ser Leu Glu Asp His Gly Leu Arg Ile Val
 465 470 475 480
 Gly Thr Cys Pro Pro Gln Gly Leu Cys Glu Ile Ile Glu Val Ser Asp
 485 490 495
 His Pro Trp Met Ile Gly Val Gln Phe His Pro Glu Phe Val Ser Lys
 500 505 510
 Leu Ile Ser Pro His Pro Leu Phe Ile Ala Phe Ile Glu Ala Ala Leu
 515 520 525
 Val Tyr Ser Lys Asp Ala Ser His Val
 530 535

<210>247

<211>154

<212>PRT

<213>Chlamydia pneumoniae

<400>247

Met Gln Ala Met Ser Lys Pro Ser Ser Cys Lys Ala Tyr Leu Gly Ile
 1 5 10 15
 Asp Tyr Gly Lys Lys Arg Ile Gly Leu Ala Tyr Ala Ala Glu Pro Leu
 20 25 30
 Leu Leu Thr Leu Pro Ile Gly Asn Ile Glu Ala Gly Lys Asn Leu Lys
 35 40 45
 Leu Ser Ala Glu Ala Leu His Lys Ile Ile Leu Ser Arg Asn Ile Thr
 50 55 60
 Cys Val Val Leu Gly Asn Pro Leu Pro Met Gln Lys Gly Leu Tyr Ser
 65 70 75 80
 Ser Leu Gln Glu Gly Val Ser Leu Leu Ala Glu Glu Leu Lys Lys Leu
 85 90 95
 Ser Thr Val Glu Ile Ile Leu Trp Asp Glu Arg Leu Ser Ser Val Gln
 100 105 110
 Ala Glu Arg Met Leu Lys Gln Asp Cys Gly Leu Ser Arg Lys Asp Arg
 115 120 125
 Lys Gly Lys Thr Asp Ser Leu Ala Ala Thr Leu Ile Leu Thr Ser Phe
 130 135 140
 Leu Asp Ser Leu Pro Lys Lys Leu Thr Leu
 145 150

<210>248

<211>390

<212>PRT

<213>Chlamydia pneumoniae

<400>248

Met Thr Asn Val Val Gln Glu Thr Ile Gly Gly Leu Asn Ser Pro Arg
 1 5 10 15
 Thr Cys Pro Pro Cys Ile Leu Val Ile Phe Gly Ala Thr Gly Asp Leu
 20 25 30
 Thr Ala Arg Lys Leu Leu Pro Ala Leu Tyr His Leu Thr Lys Glu Gly
 35 40 45
 Arg Leu Ser Asp Gln Phe Val Cys Val Gly Phe Ala Arg Arg Glu Lys
 50 55 60
 Ser Asn Glu Leu Phe Arg Gln Glu Met Lys Gln Ala Val Ile Gln Phe
 65 70 75 80
 Ser Pro Ser Glu Leu Asp Ile Lys Val Trp Glu Asp Phe Gln Gln Arg
 85 90 95

Leu Phe Tyr His Arg Ser Glu Phe Asp Asn Asn Met Tyr Thr Ser
 100 105 110
 Leu Lys Asp Ser Leu Glu Asp Leu Asp Lys Thr Tyr Gly Thr Arg Gly
 115 120 125
 Asn Arg Leu Phe Tyr Leu Ser Thr Pro Pro Gln Tyr Phe Ser Arg Ile
 130 135 140
 Ile Glu Asn Leu Asn Lys His Lys Leu Phe Tyr Lys Asn Gln Asp Gln
 145 150 155 160
 Gly Lys Pro Trp Ser Arg Val Ile Ile Glu Lys Pro Phe Gly Arg Asp
 165 170 175
 Leu Asp Ser Ala Lys Gln Leu Gln Gln Cys Ile Asn Glu Asn Leu Asn
 180 185 190
 Glu Asn Ser Val Tyr His Ile Asp His Tyr Leu Gly Lys Glu Thr Val
 195 200 205
 Gln Asn Ile Leu Thr Thr Arg Phe Ala Asn Thr Ile Phe Glu Ser Cys
 210 215 220
 Trp Asn Ser Gln Tyr Ile Asp His Val Gln Ile Ser Leu Ser Glu Thr
 225 230 235 240
 Ile Gly Ile Gly Ser Arg Gly Asn Phe Phe Glu Lys Ser Gly Met Leu
 245 250 255
 Arg Asp Met Val Gln Asn His Met Met Gln Leu Leu Cys Leu Leu Thr
 260 265 270
 Met Glu Pro Pro Thr Thr Phe Asp Ala Asp Glu Ile Arg Lys Xaa Lys
 275 280 285
 Ile Lys Ile Leu Gln Arg Ile Ser Pro Phe Ser Glu Gly Ser Ser Ile
 290 295 300
 Val Arg Gly Gln Tyr Gly Pro Gly Thr Val Gln Gly Val Ser Val Leu
 305 310 315 320
 Gly Tyr Arg Glu Glu Glu Asn Val Asp Lys Asp Ser Arg Val Glu Thr
 325 330 335
 Tyr Val Ala Leu Lys Gln Ser Leu Ile Ile Pro Val Gly Leu Glu Phe
 340 345 350
 Leu Ser Ile Tyr Val Gln Glu Asn Asp Ser Pro Lys Asn Leu Gln Thr
 355 360 365
 Phe Leu Leu Phe Leu Lys Asn His Pro Thr Ile Tyr Leu Gln Pro Lys
 370 375 380
 Asn Val His Val Val Arg
 385 390

<210>249

<211>132

<212>PRT

<213>Chlamydia pneumoniae

<400>249

Gln Arg Phe Pro Ser Arg Asp Leu Arg Ser Phe Lys Thr Val Ile Asn
 1 5 10 15
 Asn Pro Arg Trp Leu Gly Val Pro Phe Tyr Leu Arg Ala Gly Lys Arg
 20 25 30
 Leu Ala Lys Lys Ser Thr Asp Ile Ser Ile Ile Phe Lys Lys Ser Pro
 35 40 45
 Tyr Asn Leu Phe Ala Ala Glu Glu Cys Ser Arg Cys Pro Ile Glu Asn
 50 55 60
 Asp Leu Leu Ile Ile Arg Ile Gln Pro Asp Glu Gly Val Ala Leu Lys
 65 70 75 80
 Phe Asn Cys Lys Val Pro Gly Thr Asn Asn Ile Val Arg Pro Val Lys
 85 90 95
 Met Asp Phe Arg Tyr Asp Ser Tyr Phe Gln Thr Thr Thr Pro Glu Ala
 100 105 110
 Tyr Glu Arg Leu Leu Cys Asp Cys Ile Ile Gly Asp Arg Thr Phe Ile
 115 120 125
 Tyr Gly Gly Gly
 130

<210>250

<211>266

<212>PRT

<213>Chlamydia pneumoniae

<400>250

Met Thr Asn Ile Gly Ile Glu Thr Met Ala Thr Leu Ile Asn Phe Asn
 1 5 10 15
 Asp Thr Asn Lys Leu Leu Leu Thr Lys Gln Pro Ser Leu Phe Ile Asp
 20 25 30
 Leu Ala Ser Lys Asp Trp Ile Ala Ser Ala Asn Gln Ala Ile Lys Gln
 35 40 45
 Arg Gly Ala Phe Tyr Val Ala Leu Ser Gly Gly Lys Thr Pro Leu Glu
 50 55 60
 Ile Tyr Lys Asp Ile Val Ile Asn Lys Asp Lys Leu Ile Asp Pro Ser
 65 70 75 80
 Lys Ile Phe Leu Phe Trp Gly Asp Glu Arg Leu Ala Pro Ile Thr Ser
 85 90 95
 Ser Glu Ser Asn Tyr Gly Gln Ala Met Ser Ile Leu Arg Asp Leu Asn
 100 105 110
 Ile Pro Asp Glu Gln Ile Phe Arg Met Glu Thr Glu Asn Pro Asp Gly
 115 120 125
 Ala Lys Lys Tyr Gln Glu Leu Ile Glu Asn Lys Ile Pro Asp Ala Ser
 130 135 140
 Phe Asp Met Ile Met Leu Gly Leu Gly Glu Asp Gly His Thr Leu Ser
 145 150 155 160
 Leu Phe Ser Asn Thr Ser Ala Leu Glu Glu Glu Asn Asp Leu Val Val
 165 170 175
 Phe Asn Ser Val Pro His Leu Glu Thr Glu Arg Met Thr Leu Thr Phe
 180 185 190
 Pro Cys Val His Lys Gly Lys His Val Val Val Tyr Val Gln Gly Glu
 195 200 205
 Asn Lys Lys Pro Ile Leu Lys Ser Val Phe Phe Ser Glu Gly Arg Glu
 210 215 220
 Glu Lys Leu Tyr Pro Ile Glu Arg Val Gly Arg Asp Arg Ser Pro Leu
 225 230 235 240
 Phe Trp Ile Ile Ser Pro Glu Ser Tyr Asp Ile Ala Asp Phe Asp Asn
 245 250 255
 Ile Ser Ser Ile Tyr Lys Met Asp Ile Leu
 260 265

<210>251

<211>194

<212>PRT

<213>Chlamydia pneumoniae

<400>251

Leu Asn Ser Phe Phe Ser Phe Asn Ser Leu Asn Ser Trp His Cys Leu
 1 5 10 15
 Ser Ile Ile Phe Cys Ser Ser Trp Ser Cys Ser Arg Asn Tyr Cys Gly
 20 25 30
 Asn Asp Gly Val Cys Ala Ala Gly Gly Gly Ala Leu Leu Ile Ser Leu
 35 40 45
 Leu Gly Leu Trp Ile Ala Ile Val Arg Lys Ala Lys His Gln Glu Ala
 50 55 60
 Cys Val Gly His Leu Thr Asn Val Val Leu His Thr Ala Val Ser Glu
 65 70 75 80
 Ala Leu Leu His Asp Pro Ser His Phe Gln Thr Asn Ala Leu Ala Arg
 85 90 95
 Asp Leu Phe Leu Thr Asp Cys Leu Ser His Tyr Gly His Leu Phe Ser
 100 105 110
 Asn Glu Glu Val Ala Gln Leu Val Gln Gly Gly Ala Pro Gly Gly Gly
 115 120 125
 Ser Arg Pro Ser Gln His Tyr Gly Gly Ser Ser Asp Tyr Gln Asn Arg
 130 135 140
 Arg Gly Gly Asn Gly Asn Phe Gly Gly Ser His Phe Gly Gly Gly Gly
 145 150 155 160
 Gly Phe Ala Gly Ser His Phe Gly Ala Gly Tyr Pro Thr Ala Pro Thr
 165 170 175
 Met Pro Ser Ala Pro Pro Phe Pro Pro Ala Tyr Asp Thr Ile

Tyr Gly

<210>252

<211>167

<212>PRT

<213>Chlamydia pneumoniae

<400>252

Xaa Ala Gln Asn Leu Gly Asn Leu Phe Asn Ser Phe Gly Ile Leu Ile
 1 5 10 15
 Met Cys Phe Ser Gln Cys Lys Ser Cys Gln Thr Pro Glu Lys Glu Thr
 20 25 30
 Ser Ala Ile Val Leu Gly Ala Thr Leu Leu Phe Phe Val Ile Ala Leu
 35 40 45
 Ile Leu Gly Pro Thr Leu Gly Ala Leu Val Tyr Cys Ala Tyr Lys Val
 50 55 60
 Tyr Thr Leu Gly Lys Met Ile Tyr Ser Leu Asn Lys Ala Lys Ala Lys
 65 70 75 80
 Val Leu Arg His Pro Ala Gln Asn Val Phe His Arg Ala Ala Gly Val
 85 90 95
 Ala Thr Ile Arg Ser Ser Glu Glu Ala Val Lys Ala Cys Lys Leu Tyr
 100 105 110
 Lys Ser Ala Met Ile Gly Ser Leu Val Val Ser Leu Ile Ala Ser Leu
 115 120 125
 Ala Leu Ile Ala Leu Thr Ala Gly Ile Val Leu Val Leu Phe Phe Val
 130 135 140
 Ala Pro Gly Ala Ala Pro Val Ile Thr Ala Ala Met Met Gly Ser Ala
 145 150 155 160
 Leu Gln Val Glu Ala Leu Cys
 165

<210>253

<211>106

<212>PRT

<213>Chlamydia pneumoniae

<400>253

Lys Leu Ala Ile Ile Arg Arg Arg Arg Arg Arg Gly Lys Arg Arg Ile
 1 5 10 15
 Arg Arg Val Tyr Arg Arg Ile Gly Arg Trp Arg Phe Ser Arg Asn His
 20 25 30
 Val Ala Ala Thr Ile Ala Pro Leu Leu Met Lys Gln Ser Leu Val Thr
 35 40 45
 Trp Arg Trp Arg Arg Leu Thr Val Gln Gly Asp Phe Ala Leu Asp Ile
 50 55 60
 Ser Ile Leu Val Ile Thr Glu Glu Leu Leu Val Ser Ser Tyr Arg Leu
 65 70 75 80
 Ser Lys His Phe Phe Ser Ser Trp Ser Asp Arg Lys Val Gly His Leu
 85 90 95
 Asn Asn Cys Val Thr His Tyr Thr Thr Gln
 100 105

<210>254

<211>390

<212>PRT

<213>Chlamydia pneumoniae

<400>254

Ile Phe Leu Val Lys Phe Met Ser Ala Met Ile Ser Leu Ser Ser Ser
 1 5 10 15
 His Glu Ala Ser Ile Ala Ser Asn Thr Gln Val Arg Asp Val Leu Val
 20 25 30
 Ser Leu Ala Met Asp Glu Phe Val Glu His Asn Thr Glu Ile Leu Pro
 35 40 45
 Ile Lys Val Phe Leu Ala Arg Gly Thr Leu Ser Ser Thr Ala Ile Ile
 50 55 60
 Asp Asp Leu Lys Asp Val Val Glu Thr Glu Gly Glu His His Phe Gln
 65 70 75 80

Val Tyr Ser Asn Ile Ser Leu Lys Met Ile Tyr Gln Arg Phe Glu
 85 90 95
 Lys Ile Phe Gly Ile Gly Cys Cys Pro Leu Leu Leu Val Thr Asp Ser
 100 105 110
 His His Thr Asp Pro Cys Gly Ala Leu Ile Thr Gly Ile Phe Ala Ala
 115 120 125
 Val Leu Phe Thr Val Leu Ala Ile Val Phe Gly Pro Thr Leu Gly Ile
 130 135 140
 Leu Cys Tyr Ser Ala Tyr Lys Ile Tyr Gln Leu Thr Lys Lys Ile Ser
 145 150 155 160
 Ser Leu Ser Arg Thr His Thr Gln Val Ile Asn Ser Val Gln Lys Ser
 165 170 175
 Asp Pro Phe Ile His Arg Ser Gly Ala Val Ala Ala Ala Ala Ser
 180 185 190
 Gln Ser Thr Ile Lys Ala Cys Lys Val Phe Arg Gln Ser Thr Leu Ile
 195 200 205
 Phe Phe Val Leu Gly Leu Ile Ile Thr Ile Ser Leu Ala Ala Leu Ile
 210 215 220
 Val Gly Leu Val Phe Ala Leu Phe Phe Leu Asp Pro Gly Ala Pro Ala
 225 230 235 240
 Val Met Thr Ala Ala Met Ile Gly Cys Cys Ala Ala Gly Gly Thr Gly
 245 250 255
 Ile Leu Leu Ser Val Ile Gly Phe Leu Leu Ala Ser Val Tyr Ser Val
 260 265 270
 Gln Lys Ser Gln Glu Gly Val His His Met His Thr Ala Leu Leu Arg
 275 280 285
 Cys Ile Val Ser Asn Thr Ile Ile Gln Met Pro Tyr Leu Pro Ile Thr
 290 295 300
 Pro Gly Thr Lys Lys Val Leu Thr Gln Ser Ile Arg Arg Tyr Gln Gln
 305 310 315 320
 Phe Phe Ser Asp Asp Glu Tyr Arg Asp Ile Glu Ser Glu Val Pro Leu
 325 330 335
 Asn Arg Gln Thr Thr Pro Pro Pro Ser Tyr Glu Thr Leu Phe His Glu
 340 345 350
 Glu Gly Ser Asp Gly Ser Ser Asn Val Ile Pro Arg Glu Ser Pro Pro
 355 360 365
 Ala Tyr Ser Thr Ile Asp Ser Ser Asn Ser Pro Phe Pro Ser Ser Ser
 370 375 380
 Pro Pro Pro Tyr Tyr Arg
 385 390

<210>255

<211>125

<212>PRT

<213>Chlamydia pneumoniae

<400>255

Thr Pro Ser Trp Leu Phe Cys Thr Leu Tyr Thr Glu Ala Ser Lys Lys
 1 5 10 15
 Pro Ile Thr Glu Arg Arg Ile Pro Val Pro Pro Ala Ala Gln His Pro
 20 25 30
 Ile Ile Ala Val Ile Thr Ala Gly Ala Pro Gly Ser Lys Lys Asn
 35 40 45
 Arg Ala Lys Thr Arg Pro Thr Ile Lys Ala Ala Lys Asp Ile Val Ile
 50 55 60
 Ile Lys Pro Ser Thr Lys Lys Ile Asn Val Asp Cys Leu Asn Thr Leu
 65 70 75 80
 Gln Ala Leu Ile Val Asp Cys Glu Ala Ala Ala Ala Thr Ala Pro
 85 90 95
 Glu Arg Cys Ile Lys Gly Ser Asp Phe Cys Thr Glu Phe Met Thr Ser
 100 105 110
 Val Trp Val Leu Asp Lys Glu Asp Ile Phe Leu Val Ser
 115 120 125

<210>256

<211>95

<212>PRT

<213>Chlamydia pneumoniae

<400>256

Arg His Leu Lys Cys Asp Pro Arg Leu Thr Leu Ser Pro Gly Lys Ala
1 5 10 15
Leu Asp Ala Leu His Asn Leu Asn Gly Asn Glu Arg Ser Arg Asn Arg
20 25 30
Thr Phe Lys Ile Asn Lys Thr Thr Leu Thr Thr Ala Gln Thr Thr Ala
35 40 45
Ile Thr Gly Tyr Asn Ile Val Ser Thr Thr Lys Gln Ala Val Phe Leu
50 55 60
Thr Gln Gly Phe Ile Ile Ile Ile Ser Leu Arg His Ser Lys Lys Asn
65 70 75 80
Arg Thr Ser His Lys Asn Asn Arg Trp Phe Leu Arg Lys Leu Ile
85 90 95

<310>257

<211>291

<212>PRT

<213>Chlamydia pneumoniae

<400>257

Thr Cys Gln Lys Glu Ile Met Lys His Tyr Leu Ser Phe Ser Pro Ser
1 5 10 15
Ala Asp Phe Phe Ser Lys Gln Gly Ala Ile Glu Thr Gln Val Leu Phe
20 25 30
Gly Glu Arg Val Leu Val Lys Gly Ser Thr Cys Tyr Ala Tyr Ser Gln
35 40 45
Leu Phe His Asn Glu Leu Leu Trp Lys Pro Tyr Pro Gly His Ser Phe
50 55 60
Arg Ser Thr Leu Val Pro Cys Thr Pro Glu Phe His Ile His Pro Asn
65 70 75 80
Val Ser Val Val Ser Val Asp Ala Phe Leu Asp Pro Trp Gly Ile Pro
85 90 95
Leu Pro Phe Gly Thr Leu Leu His Val Asn Ser Gln Asn Thr Val Ile
100 105 110
Phe Pro Lys Asp Ile Leu Asn His Met Asn Thr Ile Trp Gly Ser Gly
115 120 125
Thr Pro Gln Cys Asp Pro Arg His Leu Arg Arg Leu Asn Tyr Asn Phe
130 135 140
Phe Ala Glu Leu Leu Ile Lys Asp Ala Asp Leu Leu Leu Asn Phe Pro
145 150 155 160
Tyr Val Trp Gly Gly Arg Ser Val His Glu Ser Leu Glu Lys Pro Gly
165 170 175
Val Asp Cys Ser Gly Phe Ile Asn Ile Leu Tyr Gln Ala Gln Gly Tyr
180 185 190
Asn Val Pro Arg Asn Ala Ala Asp Gln Tyr Ala Asp Cys His Trp Ile
195 200 205
Ser Ser Phe Glu Asn Leu Pro Ser Gly Gly Leu Ile Phe Leu Tyr Pro
210 215 220
Lys Glu Glu Lys Arg Ile Ser His Val Met Leu Lys Gln Asp Ser Ser
225 230 235 240
Thr Leu Ile His Ala Ser Gly Gly Gly Lys Lys Val Glu Tyr Phe Ile
245 250 255
Leu Glu Gln Asp Gly Lys Phe Leu Asp Ser Thr Tyr Leu Phe Phe Arg
260 265 270
Asn Asn Gln Arg Gly Arg Ala Phe Phe Gly Ile Pro Arg Lys Arg Lys
275 280 285
Ala Phe Leu
290

<210>256

<211>166

<212>PRT

<213>Chlamydia pneumoniae

<400>258

Val Val Ala Lys Ser Thr Ile Gln Glu Ser Val Ala Thr Gly Arg Arg
1 5 10 15

Lys Gln Ala Val Ser Val Arg Leu Arg Pro Gly Ser Lys Ile
 20 25 30
 Asp Val Asn Gly Lys Ser Phe Glu Asp Tyr Phe Pro Leu Glu Ile Gln
 35 40 45
 Arg Thr Thr Ile Leu Ser Pro Leu Lys Lys Ile Thr Glu Asp Gln Ser
 50 55 60
 Gln Tyr Asp Leu Ile Ile Arg Val Ser Gly Gly Gly Ile Gln Gly Gln
 65 70 75 80
 Val Ile Ala Thr Arg Leu Gly Leu Ala Arg Ala Leu Leu Lys Glu Asn
 85 90 95
 Glu Glu Asn Arg Gln Asp Leu Lys Ser Cys Gly Phe Leu Leu Glu Ile
 100 105 110
 Leu Glu Gly Lys Asn Val Lys Asn Thr Asp Ile Lys Lys Leu Val Lys
 115 120 125
 Ala Ser Asn Ser Leu Ser Val Lys Ile Phe Thr Val Phe Arg Ile Val
 130 135 140
 Phe Gly Lys Ser Leu Ser Tyr Tyr Arg Lys Ala Phe Leu Phe Leu Gly
 145 150 155 160
 Ile Pro Lys Asn Ala Arg Pro Leu
 165

<210>259

<211>149

<212>PRT

<213>Chlamydia pneumoniae

<400>259

Met Glu Lys Arg Lys Asp Thr Lys Thr Thr Ile Val Lys Ser Ser Glu
 1 5 10 15
 Thr Thr Lys Ser Trp Tyr Val Val Asp Ala Ala Gly Lys Thr Leu Gly
 20 25 30
 Arg Leu Ser Ser Glu Val Ala Lys Ile Leu Arg Gly Lys His Lys Val
 35 40 45
 Thr Tyr Thr Pro His Val Ala Met Gly Asp Gly Val Ile Val Ile Asn
 50 55 60
 Ala Glu Lys Val Arg Leu Thr Gly Ala Lys Lys Gly Gln Lys Ile Tyr
 65 70 75 80
 Arg Tyr Tyr Thr Gly Tyr Ile Ser Gly Met Arg Glu Ile Pro Phe Glu
 85 90 95
 Asn Met Met Ala Arg Lys Pro Asn Tyr Ile Ile Glu His Ala Ile Lys
 100 105 110
 Gly Met Met Pro Arg Thr Arg Leu Gly Lys Lys Gln Leu Lys Ser Leu
 115 120 125
 Arg Ile Val Lys Gly Asp Ser Tyr Glu Thr Phe Glu Ser Gln Lys Pro
 130 135 140
 Ile Leu Leu Asp Ile
 145

<210>260

<211>226

<212>PRT

<213>Chlamydia pneumoniae

<400>260

Met Ser Leu Leu Ile Glu Ala Lys Asn Leu Ser Lys Thr Ile Gln Gln
 1 5 10 15
 Gln Asn Gln Asn Ile Ser Ile Leu Thr Asp Val Ser Leu Ser Leu His
 20 25 30
 Ala Gly Glu Thr Ile Ser Ile Thr Gly Ala Ser Gly Asn Gly Lys Thr
 35 40 45
 Thr Leu Leu His Leu Leu Gly Thr Leu Asp Val Pro Ser Ser Gly Ser
 50 55 60
 Leu Arg Phe Phe Asp Lys Asp Leu Lys Asn Gln Asp Leu Ala Asn Phe
 65 70 75 80
 Arg Asn Gln His Ile Gly Phe Val Phe Gln Asn Phe Tyr Leu Leu Glu
 85 90 95
 Asp Asp Thr Val Leu Lys Asn Val Leu Met Pro Ala Leu Ile Ala Arg
 100 105 110

Lys Asn Ile Ser Val Gly Ser Pro Val Tyr Thr Arg Leu Glu Leu
 115 120 125
 Leu Asp Leu Val Asn Leu Glu Asp Lys Val Arg Thr Arg Cys Ser Lys
 130 135 140
 Leu Ser Gly Gly Glu Lys Gln Arg Val Ala Ile Ala Arg Ala Leu Ile
 145 150 155 160
 Asn Glu Pro Ala Ile Leu Leu Ala Asp Glu Pro Ser Gly Asn Leu Asp
 165 170 175
 Glu Glu Thr Ser Glu Gln Ile His Asn Leu Leu Leu Glu Gln Ala Ser
 180 185 190
 Ala Leu Cys Gly Ile Leu Ile Val Thr His Asn Lys His Leu Ala Ser
 195 200 205
 Arg Cys Ser Arg Glu Gly Val Leu Ser Asn Gly Lys Leu Phe Phe His
 210 215 220
 Asn Ser
 225
 <210>261
 <211>506
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>261
 Leu Glu Val Met Lys Phe Glu Phe Ser Val Ala Leu Lys Tyr Leu Ile
 1 5 10 35
 Pro Gly Arg Gly Arg Leu Tyr Ser Ala Ile Val Ser Leu Phe Ser Val
 20 25 30
 Gly Ile Ile Ser Leu Val Val Trp Leu Ser Ile Val Phe Ile Ser Val
 35 40 45
 Ile His Gly Leu Glu Gln Arg Trp Ile Glu Asp Leu Ser Gln Leu His
 50 55 60
 Ser Pro Ile Thr Ile Leu Pro Ser Asp Thr Tyr Tyr Ser Ser Tyr Tyr
 65 70 75 80
 Tyr Gln Ile Asp Lys His Ser Ser Leu Ser Asn Tyr Thr Thr Lys Thr
 85 90 95
 Leu Gly Glu Lys Ile Ala Ser Pro Gln Val Asp Pro Tyr Asp Pro Glu
 100 105 110
 Ser Asp Tyr Leu Leu Pro Glu Thr Phe Pro Leu Lys Asp Cys Asp Leu
 115 120 125
 Gly Gly Gln Gln Lys Asp Pro Val Lys Met Thr Leu Glu Ser Leu Gly
 130 135 140
 Pro Tyr Leu Gln Ser Gln His Gly Lys Val Ile Glu Phe Glu Gln Gly
 145 150 155 160
 Val Gly Tyr Leu Asp Ile Lys Thr Ser Leu Lys Leu Gln Lys Pro Gln
 165 170 175
 Pro Arg Asn Leu Thr His Phe Leu Thr Tyr Pro Ser Lys Leu Ser Tyr
 180 185 190
 Glu Asp Lys Val Leu Pro Tyr Asp Glu Thr Asp Tyr Thr Ser Ala Glu
 195 200 205
 Leu Asn Pro Phe Asn Arg Ser Pro Ser Gly Trp Gln Gln Asp Phe His
 210 215 220
 His Leu Glu Glu Leu Tyr Arg Gly Ala Ser Ile Ile Leu Pro Ser Thr
 225 230 235 240
 Tyr Lys Asp Ser Gly Tyr Lys Val Gly Asp Thr Gly Val Phe Ser Thr
 245 250 255
 Tyr Ser Ile Glu Asn Glu Lys Glu Thr Gln Tyr Thr Val His Val Ile
 260 265 270
 Gly Phe Tyr Asn Pro Gly Leu Ser Pro Leu Gly Gly Arg Thr Val Phe
 275 280 285
 Ile Asp Pro Asp Leu Ala Arg Ser Ile Arg Ser Gln Ser Glu Gly Leu
 290 295 300
 Gly Met Ser Asn Gly Phe His Leu Phe Phe Pro Asn Thr Lys Arg Ile
 305 310 315 320
 Val Phe Val Lys Lys Gln Ile Glu Asn Il Leu Thr Ser Leu Gly Val
 325 330 335
 Asp Asp Tyr Trp Glu Ile Ser Ser Leu His Asp Tyr Asp Tyr Phe Gln

340 345
 Pro Ile Leu Asp Gln Leu Gln Ser Asp Gln Val Leu Phe Leu Phe Val
 355 360 365
 Cys Ile Leu Ile Leu Ile Val Ala Cys Ser Asn Ile Val Thr Met Ser
 370 375 380
 Met Leu Leu Val Asn Asn Lys Lys Lys Glu Ile Gly Ile Leu Lys Ala
 385 390 395 400
 Met Gly Thr Ser Ser Arg Ser Leu Lys Ile Ile Phe Ala Cys Cys Gly
 405 410 415
 Ala Phe Ser Gly Ala Cys Gly Val Val Ile Gly Thr Ile Phe Ala Ile
 420 425 430
 Ile Thr Leu Lys Asn Leu Gln Phe Ile Val Lys Ala Leu Asn Tyr Leu
 435 440 445
 Gln Gly Arg Glu Thr Phe Asn Thr Ala Phe Phe Gly Gln Asn Leu Pro
 450 455 460
 Asn Ser Val His Pro Gln Ala Ile Tyr Phe Leu Gly Leu Gly Thr Leu
 465 470 475 480
 Leu Leu Ala Ala Val Ser Gly Ala Leu Pro Ala Arg Lys Val Ala Lys
 485 490 495
 Met His Val Ser Glu Ile Leu Lys Ala Asp
 500 505

<210>262

<211>64

<212>PRT

<213>Chlamydia pneumoniae

<400>262

Phe Ser Ala Phe Thr Met Asn Cys Lys Phe Phe Asn Val Ile Ile Ala
 1 5 10 15
 Asn Ile Val Pro Ile Thr Thr Pro Gln Ala Pro Glu Asn Ala Pro Gln
 20 25 30
 Gln Ala Lys Met Ile Phe Lys Leu Arg Asp Asp Val Pro Ile Ala Leu
 35 40 45
 Arg Met Pro Ile Ser Phe Phe Leu Leu Phe Thr Arg Ser Ile Asp Ile
 50 55 60
 Val Thr Met Leu Glu Gln Ala Thr Ile Arg Ile Ser Met His Thr Lys
 65 70 75 80
 Arg Lys Arg Thr

<210>262

<211>503

<212>PRT

<213>Chlamydia pneumoniae

<400>263

Leu Pro Trp Met Ser Pro Phe Lys Lys Ile Val Asn Arg Leu Leu Cys
 1 5 10 15
 Tyr Ile Ser Phe Gln Lys Glu Ser Arg Thr Leu Pro Ile Ile Ile Arg
 20 25 30
 Glu Pro Arg Met Thr Thr Lys Ser Leu Gly Ser Phe Asn Ser Val Ile
 35 40 45
 Ser Lys Asn Lys Ile His Phe Ile Ser Leu Gly Cys Ser Arg Asn Leu
 50 55 60
 Val Asp Ser Glu Val Met Leu Gly Ile Leu Leu Lys Ala Gly Tyr Glu
 65 70 75 80
 Ser Thr Asn Glu Ile Glu Asp Ala Asp Tyr Leu Ile Leu Asn Thr Cys
 85 90 95
 Ala Phe Leu Lys Ser Ala Arg Asp Glu Ala Lys Asp Tyr Leu Asp His
 100 105 110
 Leu Ile Asp Val Lys Lys Glu Asn Ala Lys Ile Ile Val Thr Gly Cys
 115 120 125
 Met Thr Ser Asn His Lys Asp Glu Leu Lys Pro Trp Met Ser His Ile
 130 135 140
 His Tyr Leu Leu Gly Ser Gly Asp Val Glu Asn Ile Leu Ser Ala Ile
 145 150 155 160
 Glu Ser Arg Glu Ser Gly Glu Lys Ile Ser Ala Lys Ser Tyr Ile Glu

170 175
 Met Gly Glu Val Pro Arg Gln Leu Ser Thr Pro Lys His Tyr Ala Tyr
 180 185 190
 Leu Lys Val Ala Glu Gly Cys Arg Lys Arg Cys Ala Phe Cys Ile Ile
 195 200 205
 Pro Ser Ile Lys Gly Lys Leu Arg Ser Lys Pro Leu Asp Gln Ile Leu
 210 215 220
 Lys Glu Phe Arg Ile Leu Val Asn Lys Ser Val Lys Glu Ile Ile Leu
 225 230 235 240
 Ile Ala Gln Asp Leu Gly Asp Tyr Gly Lys Asp Leu Ser Thr Asp Arg
 245 250 255
 Ser Ser Gln Leu Glu Ser Leu Leu His Glu Leu Leu Lys Glu Pro Gly
 260 265 270
 Asp Tyr Trp Leu Arg Met Leu Tyr Leu Tyr Pro Asp Glu Val Ser Asp
 275 280 285
 Gly Ile Ile Asp Leu Met Gln Ser Asn Pro Lys Leu Leu Pro Tyr Val
 290 295 300
 Asp Ile Pro Leu Gln His Ile Asn Asp Arg Ile Leu Lys Gln Met Arg
 305 310 315 320
 Arg Thr Thr Ser Arg Glu Gln Ile Leu Gly Phe Leu Glu Lys Leu Arg
 325 330 335
 Ala Lys Val Pro Gln Val Tyr Ile Arg Ser Ser Val Ile Val Gly Phe
 340 345 350
 Pro Gly Glu Thr Gln Glu Glu Phe Glu Glu Leu Ala Asp Phe Ile Gly
 355 360 365
 Glu Gly Trp Ile Asp Asn Leu Gly Ile Phe Leu Tyr Ser Gln Glu Ala
 370 375 380
 Asn Thr Pro Ala Ala Glu Leu Pro Asp Gln Ile Pro Glu Lys Val Lys
 385 390 395 400
 Glu Ser Arg Leu Lys Ile Leu Ser Gln Ile Gln Lys Arg Asn Val Asp
 405 410 415
 Lys His Asn Gln Lys Leu Ile Gly Glu Lys Ile Glu Ala Val Ile Asp
 420 425 430
 Asn Tyr His Pro Glu Thr Asn Leu Leu Leu Thr Ala Arg Phe Tyr Gly
 435 440 445
 Gln Ala Pro Glu Val Asp Pro Cys Ile Ile Val Asn Glu Ala Lys Leu
 450 455 460
 Val Ser His Phe Gly Glu Arg Cys Phe Ile Glu Ile Thr Gly Thr Ala
 465 470 475 480
 Gly Tyr Asp Leu Val Gly Arg Val Val Lys Lys Ser Gln Asn Gln Ala
 485 490 495
 Leu Leu Lys Thr Ser Lys Ala
 500

<210>264

<211>179

<212>PRT

<213>Chlamydia pneumoniae

<400>264

Ala Thr Ser Thr Val Cys Ala Leu Trp Ile Leu Gln Thr Tyr Gln Ser
 1 5 10 15
 His Asp Asp Ala Ala Ser Cys Ser Phe Arg Arg Ala Cys Arg Phe Gly
 20 25 30
 Arg Tyr Trp Leu Gly Gly Val Asn Val Pro Trp Asn Lys Phe Asn Gln
 35 40 45
 Thr Ser Thr Gln Ser Thr Val Ile Asn Ser Ala Ile Tyr Ile Asp Ser
 50 55 60
 Ser Gln Thr Trp Met Met Arg Phe Gln Ala Ser Ile Pro Arg
 65 70 75 80
 Leu Phe Arg Ile Ser Ile Phe Met Thr Lys His Gly Asp Trp Ile Asp
 85 90 95
 Asn Gly Thr Gly Gly Glu Leu Leu Leu Val Ala Tyr Glu Ala Asn Gln
 100 105 110
 Asn Pro Leu Phe Pro Asp Ile Arg Ile Glu Leu Ala Met Ser Thr Cys
 115 120 125

Ser Gly Thr Ser Tyr Arg Ala Arg Pro Met Gln Trp Cys Ser
 130 135 140
 Thr Tyr Tyr Ala Val Arg Pro Gly Tyr Phe Val Leu Glu Asn Arg Ser
 145 150 155 160
 Tyr Ser Phe Arg Val Gln Ser Phe Ser Trp Asn Ile Ala Thr Leu Pro
 165 170 175
 Phe Val Asn

<210>265

<211>175

<212>FRT

<213>Chlamydia pneumoniae

<400>265

Phe Cys Gly Gly Arg Leu Met Ser Ser Ser Ile Pro Thr Thr Gln Lys
 1 5 10 15
 Ile Thr Ile Ser Ile Pro Thr Phe Val Arg Phe Asn Ile Glu Ser Ile
 20 25 30
 Asn Leu Thr Asp Glu Gln Lys Lys Thr Ala Leu Thr Ile Gly Gln Asn
 35 40 45
 Ile Ala Thr Glu Asn Thr Gln Val Leu Gly Asn Phe Val Asp Ala Asp
 50 55 60
 Gly Gly Leu Ile Cys Gln Asn Asp Leu Ser Val Gly Gly Asn Ile Asn
 65 70 75 80
 Ile Thr Pro Gln Thr Phe Asn Thr Met Val Phe Asn Gly Arg Val Asn
 85 90 95
 Leu Ser Asn Ser Pro Phe Ser Tyr Gln Asp Ser Leu Gly Asn Lys Arg
 100 105 110
 Gln Asp Tyr Ala Asn Ile Asn Thr Glu Gln Pro Gln Gln Tyr Val Pro
 115 120 125
 Tyr Gly Tyr Tyr Lys Leu Thr Arg Val Met Met Met Gln Arg Ala Ala
 130 135 140
 Leu Ser Gly Gly His Val Gly Ser Gly Asp Ile Gly Trp Gly Glu Ser
 145 150 155 160
 Met Tyr Leu Gly Ile Ser Ser Ile Lys Arg Gln His Lys Val Gln
 165 170 175

<210>266

<211>264

<212>FRT

<213>Chlamydia pneumoniae

<400>266

Ile Pro Met Lys Thr Leu Gly Val Lys Asp Gln Asn Leu Phe Ile Asp
 1 5 10 15
 Gln Ala Thr Leu Ser Val Glu Arg Asn Val Arg Ile Glu Asn Asn Leu
 20 25 30
 Glu Thr Arg Asp Leu Lys Val Leu Asp Thr Thr Thr Ser Pro Cys Glu
 35 40 45
 Phe Ile Val Lys Gly Asn Val Ser Ala Glu Gly Ser Gln Leu Asn Ala
 50 55 60
 Thr Thr Leu Ser Asp Gly Phe Asn Ile Tyr Ser Lys Thr Asp Val Ser
 65 70 75 80
 Gln Thr Pro Val Cys Asn Asn Ile Ser Asp Pro Gln Ser Ala Arg Asp
 85 90 95
 Ala Leu Thr Phe Ser Tyr Tyr Arg Lys Thr Gly Cys Gln Ala Ala Asn
 100 105 110
 Leu Tyr Thr Tyr Tyr Pro Gly Asn Gly Tyr Tyr Val Ala Pro Asn Thr
 115 120 125
 Thr Ile Glu Thr His Val Ala Ala Ile Thr Ser Lys Ser Val Ser Arg
 130 135 140
 Asn Ala Thr Pro Asp Phe Ser Arg Tyr Ala Asp Ile Glu Pro Val Val
 145 150 155 160
 Lys Leu Lys Gln Val Gly Ile Tyr Gln Val Thr Met Gln Leu Thr Arg
 165 170 175
 Trp Ser Gly Gln His Asp Gly Asp Asn Ser Ala Thr Leu Ile Leu Asn
 180 185 190

Phe Val Ser Gly Asn Asn Lys Thr Leu Leu Cys Thr 8 Asp Thr Arg
 195 200 205
 Gly Gly Tyr Ser Ser Asp Arg Thr Ser Val Ala Val Thr Ala Ile Phe
 210 215 220
 Ser Val Thr Glu Leu Val Ser Ser Pro Pro Tyr Asp Tyr Pro Trp Ile
 225 230 235 240
 Asn Leu Glu Ser Thr Ile Trp Met Asn Leu Met Ser Leu Ser Thr Cys
 245 250 255
 Gly His Leu Val Ser Ile Ser Ile
 260

<210>267

<211>285

<212>PRT

<213>Chlamydia pneumoniae

<400>267

Thr Leu Leu Lys Val Ile Met Lys Asn Asn Ile Asn Asn Asn Glu Cys
 1 5 10 15
 Tyr Phe Lys Leu Asp Ser Thr Val Asp Gly Asp Leu Leu Ala Ala Asn
 20 25 30
 Leu Lys Thr Phe Asp Thr Gln Ala Gln Gly Ile Ser Ser Thr Glu Thr
 35 40 45
 Phe Ser Val Gln Gly Asn Ala Thr Phe Lys Asp Gln Val Ser Ala Thr
 50 55 60
 Gly Leu Thr Ser Gly Thr Thr Tyr Asn Leu Asn Ala Gln Asn Phe Thr
 65 70 75 80
 Ser Ser Gln Ile Ser Ile Asp Phe Lys Asn Asn Arg Leu Ser Asn Cys
 85 90 95
 Ala Leu Pro Lys Glu Asp Cys Asp Pro Val Pro Ala Asn Tyr Val Arg
 100 105 110
 Ser Pro Glu Tyr Phe Phe Cys Ser Lys Pro Leu Ile Gly Asp Phe Asp
 115 120 125
 Phe Asn Ser Gly Glu Ser Tyr Leu Pro Leu Thr Gly Ser Glu Tyr Thr
 130 135 140
 Leu Tyr Gln Ser Arg Asn Val Asn Ser Ile Phe Arg Phe Ile Gly Trp
 145 150 155 160
 Lys Gln Ser Thr Arg Glu Leu Thr Val Gly Gly Asn Thr Ala Ile Gln
 165 170 175
 Phe Leu Ala Ala Gly Thr Tyr Ile Val Ser Phe Thr Val Gly Lys Arg
 180 185 190
 Trp Gly Trp Asn Asn Gly Trp Gly Gly Ala Ile Tyr Ile Asn Asn Gly
 195 200 205
 Leu Gly Gln Val Gln Cys Glu Ser Thr Ile Tyr Ser Gly Gly Gly Tyr
 210 215 220
 Ala Thr Ile Gly Thr Leu Gly Thr Ser Ile Tyr Arg Ala Ser Val Asp
 225 230 235 240
 Val Ala Pro Asn Pro Asn Asp Pro Asn Ala Ser Asp Arg Tyr Arg Ala
 245 250 255
 Gly Ile Phe Tyr Leu Ser Asn Gly Gly Ser Ser Ala Gly Ile Gly Asn
 260 265 270
 Tyr Ser Phe Ser Leu Leu Tyr Tyr Pro Asp Asp Arg Gly
 275 280 285

<210>268

<211>295

<212>PRT

<213>Chlamydia pneumoniae

<400>268

Phe Cys Gly Gly Arg Leu Met Ser Asn Pro Thr Pro Lys Thr Lys Ile
 1 5 10 15
 Ser Ile Pro Thr Phe Val Arg Phe Asn Ile Gln Ser Ile Asn Leu Thr
 20 25 30
 Glu Asp Gln Lys Lys Thr Thr Phe Thr Val Gly Gly Lys Val Thr Thr
 35 40 45
 Glu Asn Thr Val Val Arg Gly Asp Leu Thr Cys Thr Asp Gly Gly Leu
 50 55 60

Thr Cys Gln Ser Asp Thr Ile Gln Lys Asp Ile Asn Arg Pro
 65 70 75 80
 Thr Ser Thr Asn Ser Met Val Phe Asp Gly Arg Leu Asn Leu Ser Asn
 85 90 95
 Ser Pro Leu Ser Tyr Lys Asn Ser Gln Gly Gln Asp Ile Thr Asp Tyr
 100 105 110
 Glu Lys Met Ser Ser Gly Lys Pro Gln Glu Tyr Val Pro Phe Gly Tyr
 115 120 125
 Tyr Lys Arg Thr Gln Ile Met Met Ala Gln Arg Ala Ala His Ser Ser
 130 135 140
 Gly Tyr Val Gly Gly Gly Ser Val Pro Ser Gly Ser Tyr Val Pro Trp
 145 150 155 160
 Asn Lys Phe Asp Gln Thr Ser Thr Gln Lys Thr Ser Gly Thr Glu Ile
 165 170 175
 Tyr Ile Asp Pro Asn Asp Ser Thr Lys Leu Val Phe Glu Val Asn Asn
 180 185 190
 Lys Val Pro Lys Leu Phe Arg Ile Ser Val Ile Met Ala Lys His Gly
 195 200 205
 Ser Trp Leu Asp Asn Gly Thr Gly Ala Asp Ile Leu Leu Ala Ala Asn
 210 215 220
 Glu Tyr Glu Gln Gly Gly Arg Ile Asn Val Thr Asp Leu Ala Met
 225 230 235 240
 Thr Thr Ser Arg Gly Ser Ser Tyr Tyr Glu Thr Arg Pro Leu Gln Val
 245 250 255
 Val Cys Val Thr Tyr Tyr Ala Gln Asn Asn Gly Tyr Phe Thr Phe Gln
 260 265 270
 Asn Arg Ala Gly Gly Gly Leu Arg Val Ser Phe Phe Ser Trp Asn Ile
 275 280 285
 Val Ala Leu Pro Tyr Val Glu
 290 295

<210>269

<211>290

<212>PRT

<213>Chlamydia pneumoniae

<400>269

Gly Val Val Met Lys Arg Arg Asn Leu Gln Lys Ile Leu Pro Asn Ala
 1 5 10 15
 Ser Thr Pro Ser Thr Asn Val Ala Glu Asn Thr Gly Ile Lys Asp Gln
 20 25 30
 Asn Leu Phe Leu Asp Gln Ala Thr Leu Asn Val Asp Gly Asn Val Asp
 35 40 45
 Ile Glu Asn Phe Leu Glu Thr Arg Asp Leu Lys Val Ala Asp Thr Ile
 50 55 60
 Thr Ser Pro Cys Glu Phe Thr Val Gly Gly Gly Leu Ser Ala Glu Ser
 65 70 75 80
 Ser Gln Phe Lys Ala Thr Thr Leu Ser Lys Gly Leu Glu Ile Thr Ser
 85 90 95
 Glu Asp Gln Asp Gly Arg Val Pro Lys Phe Thr Asn Val Ser Asp Pro
 100 105 110
 Gln Ser Pro Arg Asp Ala Leu Thr Tyr Asn Tyr Tyr Arg Asn Thr Gly
 115 120 125
 Cys Gln Ala Leu Asn Leu Tyr Thr Tyr Tyr Ser Ser Ser Gln Pro Thr
 130 135 140
 Thr Val Gly Lys Pro Ile Glu Thr Val Cys Gln Asn Pro Asn Pro Glu
 145 150 155 160
 Thr Tyr Arg Ile Ser Ala Ser Ala Lys Ile Tyr Asp Ala Val Thr Arg
 165 170 175
 Phe Pro Tyr Ile Gln Phe Lys Ala Pro Gly Ile Tyr Gln Val Thr Ile
 180 185 190
 Gln Ile Arg Arg Glu Ser Gly Gln His Ser Gly Leu Asp Asn Pro Asn
 195 200 205
 Leu Tyr Leu Asn Leu Met Ile Gly Asn Asn Lys Thr Leu Leu Cys Ala
 210 215 220
 Ser Asp Thr Arg Gly Tyr Ser Gly Gly His Arg Thr Ser Ile Ala Val

<211>181

<212>PRT

<213>Chlamydia pneumoniae

<400>272

Ala Tyr Leu Asp Phe Ser Lys Arg Ser Cys Val Glu Glu Asp His Val
 1 5 10 15
 Ser Lys Lys Ile Asn Arg Asn Asp Leu Cys Pro Cys Gly Ser Asn Lys
 20 25 30
 Lys Tyr Lys Gln Cys Cys Leu Lys Glu Glu Gln Thr Ala Arg Tyr
 35 40 45
 Thr Thr Glu Gly Lys Phe Lys Phe Ser Ala Glu Val Leu Ser Ala Ser
 50 55 60
 Glu Gln Gly Glu Ala Gly Asp Asn Cys Thr Lys Leu Phe Gln Arg Leu
 65 70 75 80
 Ser Gln Ser Leu Thr Ser Glu Gln Lys Ala Ala Val Gly Lys Phe His
 85 90 95
 Gln Ile Thr Lys Asn Lys Glu Val Met Ser Lys Lys Ala Leu Lys Lys
 100 105 110
 Ala Gln Ala Lys Glu Glu Lys Leu Val Thr Glu Lys Leu Gln Gln His
 115 120 125
 Asn Phe Glu Ile Leu Asn Thr Gly Glu Asn Leu Ala Pro Pro Met Glu
 130 135 140
 Ser Thr Ala Thr Leu Asn Gln Asp Thr Asn Phe Val Cys Glu Asp Phe
 145 150 155 160
 Ile Pro Thr Gln Glu Asp Phe Arg Ile Ser Glu Asn Ser Gln Lys Pro
 165 170 175
 Pro Val Glu Glu Asp
 180

<210>273

<211>206

<212>PRT

<213>Chlamydia pneumoniae

<400>273

Met Ser Thr Leu Leu Leu Asn Pro Pro Trp Met Lys Ala Gly Lys Arg
 1 5 10 15
 Ile Glu Ser Leu Val Arg Lys Ala Leu Tyr Thr His Thr Met Leu Ala
 20 25 30
 Asn His Arg Lys Ile Val Val Ala Leu Ser Gly Gly Lys Asp Ser Leu
 35 40 45
 Thr Leu Leu Leu Met Leu Lys Ala Ile Ser Gly Arg Gly Phe Pro Asp
 50 55 60
 Leu Asp Leu His Ala Val Asn Ile Gly Gly Lys Tyr Ser Cys Gly Ala
 65 70 75 80
 Glu Val Asn Lys Pro Tyr Leu Thr Arg Ile Cys Asp Gln Leu Cys Ile
 85 90 95
 Pro Phe Arg Thr Ile Pro Ser Pro Tyr Ala Pro Glu Thr Pro Glu Cys
 100 105 110
 Tyr Pro Cys Ser Gln Ala Arg Arg Arg Leu Leu Phe Gln Ala Ala Lys
 115 120 125
 Glu Ile Gly Ala Ser Ala Ile Ala Phe Gly His His Arg Asp Asp Leu
 130 135 140
 Val Gln Thr Ala Leu Leu Asn Leu Leu His Lys Ala Glu Phe Ala Gly
 145 150 155 160
 Met Leu Pro Val Leu Asp Met Val His Phe Gly Val Thr Ile Leu Arg
 165 170 175
 Pro Leu Ile Phe Thr Pro Glu Phe Trp Ile Arg Lys Phe Ala Lys Glu
 180 185 190
 Asn Ala Ser Gln Glu Ser Leu Ala Val Val Pro Trp Phe His
 195 200 205

<210>274

<211>281

<212>PRT

<213>Chlamydia pneumoniae

<400>274

Leu Val Leu Met Asn Lys Arg Leu Lys Ile Ile Leu T Asn Asp Asp
 1 5 10 15
 Gly Ile Thr Ala Lys Gly Met Ser Cys Leu Val Ser Ala Leu Leu Glu
 20 25 30
 Ala Asn Ile Gly Asp Ile Tyr Ile Ala Ala Pro Gln Ala Glu Gln Ser
 35 40 45
 Gly Lys Ser Met Ala Ile Ser Leu Asn Gln Val Val Cys Ala Ser Pro
 50 55 60
 Tyr Ala Tyr Pro Gln Pro Val Lys Glu Ala Trp Ala Val Gly Gly Ser
 65 70 75 80
 Pro Thr Asp Cys Val Arg Leu Gly Leu Arg Thr Leu Phe Glu Ser Val
 85 90 95
 Ser Pro Asp Leu Val Ile Ser Gly Ile Asn Cys Gly Asn Asn Ile Cys
 100 105 110
 Lys Asn Ala Trp Tyr Ser Gly Thr Ile Gly Ala Ala Lys Gln Ala Leu
 115 120 125
 Val Asp Gly Ile Pro Ser Met Ala Leu Ser Gln Asp Asn His Ile Ser
 130 135 140
 Phe Phe Gln Gln Asp Lys Ala Pro Glu Ile Leu Lys Ala Leu Val Ile
 145 150 155 160
 Tyr Leu Leu Ser Gln Pro Phe Pro Cys Leu Thr Gly Leu Asn Ile Asn
 165 170 175
 Phe Pro Thr Ser Pro Gly Gly Ser Ser Trp Glu Gly Met Arg Leu Val
 180 185 190
 Pro Pro Gly Asp Glu Phe Phe Tyr Glu Glu Pro Gln Tyr Leu Gly Ser
 195 200 205
 Val Asn Lys Asn Gln Tyr Tyr Val Gly Lys Ile Ser Gly Val Arg Ile
 210 215 220
 Gly Glu His Pro Ser Glu Glu Leu Ala Cys Met Leu Glu Asn His Ile
 225 230 235 240
 Ser Val Ser Pro Ile Phe Ser Gln Asn Ser Pro Ile Gly Leu Met Thr
 245 250 255
 Leu Glu Glu Phe Gln Lys Thr Gln Glu Asn Phe Asn Ala Ser Leu Leu
 260 265 270
 Ser Ser Glu Leu Thr Thr Lys Ile Phe
 275 280

<210>275

<211>313

<212>PRT

<213>Chlamydia pneumoniae

<400>275

Leu Arg Val Arg Pro Pro Ser Leu Ala Lys Tyr Ala Phe Arg Gly Phe
 1 5 10 15
 Arg Met Ser His Gly Pro Arg Pro Thr Lys Phe Ser Phe Pro Leu Tyr
 20 25 30
 Phe Ser Lys Thr Leu Ser Trp Phe Ile Leu Gly Gly Phe Leu Ala Ala
 35 40 45
 Cys Gly Val Gln Met Val Leu Val Pro Asn Glu Leu Ile Asp Gly Gly
 50 55 60
 Ile Val Gly Leu Ser Ile Ile Ala Ser His Phe Leu Gly His Lys Ala
 65 70 75 80
 Leu Pro Phe Cys Leu Val Leu Phe Asn Leu Pro Phe Val Phe Leu Ala
 85 90 95
 Phe Lys Gln Ile Gly Lys Tyr Phe Val Ile Gln Met Leu Thr Ala Val
 100 105 110
 Ile Ile Phe Ser Cys Ser Leu Trp Leu Ile Asp Gln Leu Pro Ser Trp
 115 120 125
 Leu Gly Met Ser Pro Phe Val Phe Lys Gly Ser Glu Met Glu Thr Val
 130 135 140
 Val Leu Gly Gly Ala Ile Ile Gly Val Gly Cys Gly Leu Ile Ile Arg
 145 150 155 160
 His Gly Gly Ser Thr Asp Gly Thr Glu Ile Leu Gly Ile Ile Ile Asn
 165 170 175
 Lys Lys Lys Gly Tyr Thr Val Gly Gln Ile Ile Leu Phe Val Asn Phe

180 185 190
 Phe Ile Phe Ala Leu Ser Gly Ile Val Tyr Lys Asn Trp His Thr Ala
 195 200 205
 Phe Val Ser Phe Leu Thr Tyr Gly Ile Ala Thr Lys Val Met Asp Met
 210 215 220
 Val Ile Leu Gly Leu Glu Asp Thr Lys Ser Val Thr Ile Ile Thr Ser
 225 230 235 240
 Ser Pro Arg Lys Leu Gly His Ile Leu Met Glu Thr Leu Gly Ile Gly
 245 250 255
 Leu Thr Tyr Ile His Ala Glu Gly Gly Tyr Ser Gly Glu Pro Arg Asn
 260 265 270
 Leu Leu Tyr Val Val Val Glu Arg Leu Gln Leu Ser Gln Leu Lys Glu
 275 280 285
 Ile Val His Arg Glu Asp Pro Ser Ala Phe Ile Ala Ile Glu Asn Leu
 290 295 300
 His Glu Val Ile Asn Gly Arg Arg Thr
 305 310

<210>276

<211>192

<212>PRT

<213>Chlamydia pneumoniae

<400>276

Met Lys Arg Tyr Val Val Gly Ile Ser Gly Ala Ser Gly Val Ile Leu
 1 5 10 15
 Ala Val Lys Leu Ile Lys Glu Leu Val Asn Ala Lys His Gln Val Glu
 20 25 30
 Val Ile Ile Ser Pro Ser Gly Arg Lys Thr Leu Tyr Tyr Glu Leu Gly
 35 40 45
 Cys Gln Ser Phe Asp Ala Leu Phe Ser Glu Glu Asn Leu Glu Tyr Ile
 50 55 60
 His Thr His Ser Ile Gln Ala Ile Glu Ser Ser Leu Ala Ser Gly Ser
 65 70 75 80
 Cys Pro Val Glu Ala Thr Ile Ile Ile Pro Cys Ser Met Thr Thr Val
 85 90 95
 Ala Ala Ile Ser Ile Gly Leu Ala Asp Asn Leu Leu Arg Arg Val Ala
 100 105 110
 Asp Val Ala Leu Lys Glu Arg Arg Pro Leu Ile Leu Val Pro Arg Glu
 115 120 125
 Thr Pro Leu His Thr Ile His Leu Glu Asn Leu Leu Lys Leu Ser Lys
 130 135 140
 Ser Gly Ala Thr Ile Phe Pro Pro Met Pro Met Trp Tyr Phe Lys Pro
 145 150 155 160
 Gln Ser Val Glu Asp Leu Glu Asn Ala Leu Val Gly Lys Ile Leu Ala
 165 170 175
 Tyr Leu Asn Ile Pro Ser Asp Leu Thr Lys Gln Trp Ser Asn Pro Glu
 180 185 190

<210>277

<211>296

<212>PRT

<213>Chlamydia pneumoniae

<400>277

Val Arg Leu Asn Tyr Phe Leu Asn Leu Val Asn Phe Lys Tyr Ser Ile
 1 5 10 15
 Phe Ser Ile Leu Phe Leu Ser Ala Ser Thr Val Phe Ala Leu Ser Ile
 20 25 30
 Asn Glu Ile Ser Gln Asn Leu Ser Phe Lys Glu Gly Phe Lys Ile Ser
 35 40 45
 Val Phe Gly Ala Ile Ala Phe Val Phe Ala Arg Thr Thr Gly Ile Val
 50 55 60
 Val Asn Gln Cys Ile Asp Arg Phe Ile Asp Lys Lys Asn Thr Arg Thr
 65 70 75 80
 Ser Lys Arg Val Leu Pro Ala Asn Leu Val Ser Leu Asn Phe Ala Trp
 85 90 95
 Val Leu Ser Leu Phe Cys Ser Phe Leu Phe Leu Phe Leu Cys Lys Ile

Leu	Arg	Ile	Phe	Ser	Leu	Gly	Ile	Ala	Ser	Leu	Thr	Leu	Met	Ile	Val	100	105	110
			115														120	125
Tyr	Pro	Tyr	Met	Lys	Arg	Val	Thr	Phe	Phe	Cys	His	Trp	Gly	Leu	Gly			
			130														135	140
Leu	Val	Tyr	Thr	Val	Ala	Ile	Leu	Met	Asn	Phe	Cys	Ala	Phe	Ala	Glu			
																	150	155
Ser	Gly	Leu	Ser	Met	Arg	Leu	Cys	Phe	Leu	Ala	Leu	Leu	Trp	Gly	Gly			
																	165	170
Ser	Val	Gly	Met	Val	Ile	Ala	Ala	Asn	Asp	Ile	Ile	Tyr	Ala	Ile	Glu			
																	180	185
Asp	Thr	Glu	Phe	Asp	Arg	Glu	Glu	Gly	Leu	Arg	Ser	Val	Pro	Ala	His			
																	195	200
Tyr	Gly	Glu	Lys	Lys	Ala	Val	Glu	Ile	Ala	Lys	Val	Asn	Leu	Trp	Val			
																	210	215
Ser	Tyr	Leu	Ala	Tyr	Ile	Phe	Ser	Gly	Phe	Val	Gly	Ser	Leu	Asp	Lys			
																	225	230
Glu	Phe	Tyr	Phe	Thr	Ala	Ile	Ile	Pro	Leu	Val	Val	Ile	Leu	Lys	Val			
																	245	250
Val	Arg	Met	Tyr	Ser	Asn	Tyr	Ser	Lys	Lys	Asp	Gln	Glu	Gly	Glu	Ser			
																	260	265
Gln	Ile	Leu	Phe	Ser	Glu	Tyr	Cys	Asp	Cys	Ser	Ile	Val	Ser	Cys	Lys			
																	275	280
Tyr	Asp	Phe	Val	Leu	Glu	Phe	Glu											
																	290	295

<210>278

<211>232

<212>PRT

<213>Chlamydia pneumoniae

<400>278

Ile	Met	Ala	Leu	Asp	Glu	Ile	Asn	Asn	Gln	Asn	Asn	Pro	Ser	Gln	Glu	1	5	10	15
Ile	Ala	Ser	Ser	Thr	Ser	Gln	Thr	Ser	Lys	Ile	Asn	Gln	Asp	Arg	Lys				
																	20	25	30
Thr	Phe	Ala	Cys	Thr	Val	Thr	Leu	Leu	Val	Val	Ala	Thr	Leu	Met	Ile				
																	35	40	45
Leu	Ser	Gly	Ile	Val	Leu	Leu	Phe	Thr	Ile	Gly	Ser	Leu	Gly	Leu	Ser				
																	50	55	60
Val	Pro	Leu	Ser	Gly	Ile	Leu	Gly	Thr	Phe	Ala	Val	Thr	Val	Gly	Ala				
																	65	70	75
Val	Leu	Phe	Ile	Thr	Gly	Leu	Thr	Ile	Leu	Val	Arg	Lys	Ser	Leu	Gly				
																	85	90	95
Ile	Glu	Gln	Lys	Asn	Glu	Asp	Leu	Asn	Phe	Leu	Lys	Ile	Lys	Thr	Pro				
																	100	105	110
Thr	Pro	Pro	Ala	Arg	Pro	Leu	Met	Ser	Lys	Phe	Ser	Val	Thr	Cys	Ser				
																	115	120	125
Thr	Thr	Ser	Ile	Val	Leu	Gly	Met	Ala	Leu	Leu	Ile	Gly	Ala	Val	Val				
																	130	135	140
Ser	Val	Phe	Phe	Leu	Thr	Gly	Tyr	Leu	Gln	Leu	Gly	Leu	Cys	Ala	Gly				
																	145	150	155
Leu	Val	Gly	Leu	Gly	Thr	Ala	Leu	Phe	Val	Ala	Gly	Leu	Ala	Arg	Met				
																	165	170	175
Ser	Pro	Arg	Ser	Leu	Ala	Asp	Gln	Glu	Gly	Ser	Gly	Ser	Ala	Asp	Ser				
																	180	185	190
Gln	Ser	Asn	Ile	Val	Gly	Ile	Gly	Glu	Pro	Lys	Ala	Ala	Gln	Glu	Gln				
																	195	200	205
Lys	Trp	Tyr	Lys	Met	Ala	Val	Val	Arg	Gly	Glu	Asp	Gly	Ile	Pro	Thr				
																	210	215	220
Ala	Ile	Arg	Leu	Thr	Pro	Glu	Lys												
																	225	230	

<210>279

<211>263

<212>PRT

<213>Chlamydia pneumoniae

<400>279

Val Ser Ile Met Ser Leu Asn Lys Thr Asn Ala Leu Leu Asn Gln Pro
 1 5 10 15
 Glu Pro Ala Val Cys Leu Asn Ala Trp Asp Pro Lys Tyr Ile Asn Gln
 20 25 30
 Asp Arg Lys Thr Phe Ala Cys Thr Val Thr Leu Leu Val Ile Ala Thr
 35 40 45
 Leu Met Ile Leu Thr Thr Gly Val Ile Val Leu Leu Ala Met Gly Ser
 50 55 60
 Pro Gly Leu Ser Val Leu Val Ser Thr Ile Ile Gly Thr Ser Val Thr
 65 70 75 80
 Thr Leu Gly Thr Ala Leu Phe Ile Ile Gly Leu Val Lys Leu Ile Lys
 85 90 95
 Lys Ser Leu Ala Trp Ile Gln Tyr Gln Lys Tyr Phe Gln Glu Val Val
 100 105 110
 Lys Gln Lys Tyr Glu Pro Phe Ser Ile Pro Lys Asn Asp Asn Val His
 115 120 125
 Lys Leu Thr Ser Cys Leu Pro Ser Pro Leu Asp Ile Glu Ser Pro Ser
 130 135 140
 Pro Glu Ala Ser Thr Pro Val Ser Lys Leu Arg Ile Ala Cys Ser Gly
 145 150 155 160
 Val Ala Ile Val Leu Gly Val Thr Leu Leu Ile Gly Ala Val Val Ser
 165 170 175
 Val Phe Phe Cys Thr Gly Tyr Leu Gln Leu Ala Leu Cys Val Gly Phe
 180 185 190
 Ala Cys Leu Gly Thr Ala Leu Phe Val Gly Gly Leu Ala Gly Leu Arg
 195 200 205
 Thr His Ser Leu Ile Ala Gln Gly Ile Met Tyr Leu Tyr Leu Thr Tyr
 210 215 220
 Tyr Leu Ser Ser Ala Leu Glu Glu Arg Asn Glu Thr Val Lys Asp Gln
 225 230 235 240
 Arg Asn Glu Ile Asn Thr Tyr Leu Thr Glu Glu Cys Arg Gln Gln Lys
 245 250 255
 Arg Glu Lys Ala Leu Leu Glu
 260

<210>280

<211>115

<212>PRT

<213>Chlamydia pneumoniae

<400>280

Asp Pro Cys Ser Ser Ser Trp Leu Phe Ser Ser Val Ser Gly Ser Arg
 1 5 10 15
 Ser Gly Ala Gly Arg Asp Val Gly Leu Asp Pro Glu Val Pro Gly Leu
 20 25 30
 Leu Ala Leu Phe Cys Ser Leu Gly Cys Pro Arg Arg Gly Leu Arg Ser
 35 40 45
 Ser Ile Pro Phe Ser Thr Phe Gly Val Asp Val Pro Gly Gly Leu Ala
 50 55 60
 Cys Ala Phe Ser Gly Ser Val Phe Gly Arg Thr Asn Gly Ser Tyr Ala
 65 70 75 80
 Asn Ile Asn Ser Ser Ser Glu Gly Ile Gly Asp Lys Gly Gly Val Gly
 85 90 95
 Phe Phe Gln Phe Gly Thr Lys Asp Phe Ile His Ser Gln Val Asp Val
 100 105 110
 Leu Leu Leu
 115

<210>281

<211>331

<212>PRT

<213>Chlamydia pneumoniae

<400>281

Val Ala Phe Arg Cys Val Met Thr Ile Asp Met His Cys Asp Leu Leu
 1 5 10 15
 Ser His Pro His Phe Cys Arg Lys Asp Pro Ala Val Arg Cys Ser Pro

Ser Gly Ser Leu Asn Phe Lys Gly Val Val Cys Glu His Pro Lys Pro
 165 170 175
 Lys Asn Phe Tyr Thr Arg Leu Arg Glu Ala Leu Lys Lys Lys Thr Pro
 180 185 190
 Ser Ile Val Phe Ile Tyr Asp Ile Asn Thr Ser Asp Tyr Pro Glu Leu
 195 200 205
 Phe Pro Phe Leu Ser Pro Tyr Tyr Ile Glu
 210 215

<210>283

<211>90

<212>PRT

<213>Chlamydia pneumoniae

<400>283

Ser Ile Phe Gly Val Ile Val Pro Asp Lys Lys Ala Gln Ile Thr Phe
 1 5 10 15
 Ser Leu Pro Glu Val Met Ser Ala Ile His Gln Gly Lys Ile Val Ala
 20 25 30
 Leu Pro Thr Asp Thr Val Tyr Gly Phe Val Leu Ser Leu Tyr Ala Ser
 35 40 45
 Glu Ala Glu Glu Arg Leu Tyr Ala Leu Lys Asp Arg Glu Pro Ser Lys
 50 55 60
 Ala Phe Ala Leu Tyr Val Asn Ser Ile Glu Glu Ser Lys Thr Phe Leu
 65 70 75 80
 Val Ile Pro Tyr Leu Leu Gln Leu Arg Asn
 85 90

<210>284

<211>242

<212>PRT

<213>Chlamydia pneumoniae

<400>284

Met Thr Asp Tyr Ser Phe Phe Arg Arg Lys Ile Gly Asn Ile Glu Ala
 1 5 10 15
 Ile Glu Cys Pro Gly Asn Pro Gln Asp Pro Ile Ile Ile Leu Cys His
 20 25 30
 Gly Tyr Gly Ser Leu Ala Asp Asn Leu Thr Phe Phe Pro Ser Ile Cys
 35 40 45
 Ser Phe Ser Lys Leu Arg Pro Thr Trp Ile Phe Pro Asn Gly Ile Leu
 50 55 60
 Pro Leu Glu Asn Asp Phe Arg Gly Ser Arg Ala Cys Phe Pro Leu Asn
 65 70 75 80
 Val Leu Leu Leu Gln Glu Leu Ser Arg Leu Tyr Ala Asn Gly Val Gly
 85 90 95
 Asn Leu Gln Glu Lys Tyr Asp Glu Leu Phe Asp Val Asp Leu Glu Thr
 100 105 110
 Pro Lys Glu Ala Leu Glu Glu Leu Ile Leu Asn Leu Asn Arg Pro Tyr
 115 120 125
 Asn Glu Ile Ile Ile Gly Gly Phe Ser Gln Gly Ala Ile Leu Ala Thr
 130 135 140
 His Leu Val Leu Thr Ser Gln Asn Pro Tyr Ala Gly Ala Leu Ile Phe
 145 150 155 160
 Ala Gly Ala Arg Leu Phe Asn Gln Gly Trp Glu Glu Gly Leu Lys Gln
 165 170 175
 Cys Ala Gln Val Pro Phe Leu Gln Ser His Gly Tyr Glu Asp Glu Ile
 180 185 190
 Leu Pro Tyr His Leu Gly Ala His Leu Asn Asp Leu Leu Leu Thr Lys
 195 200 205
 Leu Asn Gly Gln Phe Val Ser Phe His Gly Gly His Glu Ile Pro Ser
 210 215 220
 Val Val Phe Gln Lys Met Gln Val Thr Val Pro Asn Trp Ile Asp Pro
 225 230 235 240
 Ala Arg Gly

<210>285

<211>274

<212>PRT

<213>Chlamydia pneumoniae

<400>285

Phe	Asn	Arg	Gln	Ser	Asp	Ala	Thr	Tyr	Ala	Thr	Trp	Val	Met	His	Leu
1				5					10					15	
Glu	Glu	Glu	Asn	Gln	Gly	Trp	Glu	Ala	Leu	Leu	Arg	Lys	Val	Tyr	His
			20					25					30		
Gln	Glu	Val	Pro	Pro	Ala	Ile	Leu	Leu	His	Gly	Phe	Thr	Leu	Pro	Val
		35				40					45				
Leu	Gln	Asp	Lys	Ala	Glu	Gln	Leu	Ala	Ser	Glu	Ile	Leu	Leu	Ser	Ser
	50				55					60					
Ser	Pro	Gly	Ser	Glu	His	Lys	Val	Ser	Gln	Lys	Ile	His	Pro	Asp	Ile
65				70					75						80
Tyr	Gln	Phe	Phe	Pro	Glu	Gly	Lys	Gly	Arg	Leu	His	Ser	Ile	Asp	Leu
			85					90						95	
Pro	Arg	Gly	Ile	Lys	Lys	Gln	Ile	Tyr	Ile	Ser	Pro	Phe	Glu	Ala	Asn
		100						105					110		
Tyr	Lys	Ile	Tyr	Ile	Ile	His	Gln	Ala	Asp	Arg	Met	Thr	Leu	Ala	Ala
	115						120					125			
Ile	Ser	Ala	Phe	Leu	Lys	Val	Phe	Glu	Glu	Pro	Pro	Lys	His	Ala	Val
130					135						140				
Ile	Ile	Leu	Thr	Thr	Ala	Lys	Val	Gln	Arg	Leu	Pro	Lys	Thr	Ile	Ile
145					150					155					160
Ser	Arg	Ser	Leu	Ser	Ile	Phe	Ile	Glu	Arg	Gly	Glu	Lys	Ile	Leu	Cys
			165					170						175	
Ser	Lys	Glu	Thr	Phe	Ser	Tyr	Leu	Phe	Arg	Tyr	Ala	Gln	Cys	Glu	Ile
		180						185					190		
Pro	Val	Thr	Glu	Val	Ser	Gln	Ile	Ile	Lys	Glu	Ser	Ser	Glu	Thr	Asp
	195						200						205		
Lys	Gln	Val	Leu	Arg	Asp	Lys	Val	Gln	Arg	Phe	Met	Glu	Val	Leu	Leu
	210					215					220				
Glu	Leu	Tyr	Arg	Asp	Arg	Tyr	Thr	Leu	Asn	Leu	Gly	Leu	Lys	Ala	Ser
225				230						235					240
Ala	Leu	Asn	Tyr	Pro	Glu	His	Val	Lys	Glu	Ile	Leu	Gln	Leu	Pro	Leu
			245					250						255	
Leu	Pro	Leu	Asp	Lys	Val	Leu	Leu	Ile	Val	Glu	Ser	Ala	Trp	Ser	Val
		260						265					270		
Ile	Glu														

<210>286

<211>209

<212>PRT

<213>Chlamydia pneumoniae

<400>286

Gly	Ser	Ile	Val	Phe	Ile	Val	Ile	Glu	Gly	Gly	Glu	Gly	Ser	Gly	Lys
1				5					10					15	
Ser	Ser	Leu	Ala	Lys	Ala	Leu	Gly	Asp	Gln	Leu	Val	Ala	Gln	Asp	Arg
		20						25					30		
Lys	Val	Leu	Leu	Thr	Arg	Glu	Pro	Gly	Gly	Cys	Leu	Ile	Gly	Glu	Arg
	35					40					45				
Leu	Arg	Asp	Leu	Ile	Leu	Glu	Pro	Pro	His	Leu	Glu	Leu	Ser	Arg	Cys
	50					55					60				
Cys	Glu	Leu	Phe	Leu	Phe	Leu	Gly	Ser	Arg	Ala	Gln	His	Ile	Gln	Glu
65				70					75						80
Val	Ile	Ile	Pro	Ala	Leu	Arg	Asp	Gly	Tyr	Ile	Val	Ile	Cys	Glu	Arg
			85					90					95		
Phe	His	Asp	Ser	Thr	Ile	Val	Tyr	Gln	Gly	Ile	Ala	Glu	Gly	Leu	Gly
		100						105					110		
Ala	Asp	Phe	Val	Ala	Asp	Leu	Cys	Ser	Lys	Val	Val	Gly	Pro	Thr	Pro
	115					120						125			
Phe	Leu	Pro	Asn	Phe	Val	Leu	Leu	Leu	Asp	Ile	Pro	Ala	Asp	Ile	Gly
	130				135						140				
Leu	Gln	Arg	Lys	His	Arg	Gln	Lys	Val	Phe	Asp	Lys	Phe	Glu	Lys	Lys
145				150					155						160

Pro Leu Ser Tyr His Leu Arg Ile Arg Glu Gly Phe Leu Ser Leu Ala
 165 170 175
 Ser Ala Asp Pro Ser Arg Tyr Leu Val Leu Asp Ala Arg Glu Ser Leu
 180 185 190
 Ala Ser Leu Ile Asp Lys Val Met Leu His Thr Gln Leu Gly Leu Cys
 195 200 205
 Thr

<210>287

<211>894

<212>PRT

<213>Chlamydia pneumoniae

<400>287

Met Phe Asn Lys Asp Glu Ile Ile Val Pro Lys Asn Leu Glu Glu Glu
 1 5 10 15
 Met Lys Glu Ser Tyr Leu Arg Tyr Ser Met Ser Val Ile Ile Ser Arg
 20 25 30
 Ala Leu Pro Asp Ile Arg Asp Gly Leu Lys Pro Ser Gln Arg Arg Val
 35 40 45
 Leu Tyr Ala Met Lys Gln Leu Ser Leu Ser Pro Gly Ala Lys His Arg
 50 55 60
 Lys Cys Ala Lys Ile Cys Gly Asp Thr Ser Gly Asp Tyr His Pro His
 65 70 75 80
 Gly Glu Ser Val Ile Tyr Pro Thr Leu Val Arg Met Ala Gln Asn Trp
 85 90 95
 Ala Met Arg Tyr Pro Leu Val Asp Gly Gln Gly Asn Phe Gly Ser Ile
 100 105 110
 Asp Gly Asp Pro Pro Ala Ala Met Arg Tyr Thr Glu Ala Arg Leu Thr
 115 120 125
 His Ser Ala Met Tyr Leu Met Glu Asp Leu Asp Lys Asp Thr Val Asp
 130 135 140
 Ile Val Pro Asn Tyr Asp Glu Thr Lys His Glu Pro Val Val Phe Pro
 145 150 155 160
 Ser Lys Phe Pro Asn Leu Leu Cys Asn Gly Ser Ser Gly Ile Ala Val
 165 170 175
 Gly Met Ala Thr Asn Ile Pro Pro His Asn Leu Gly Glu Leu Ile Glu
 180 185 190
 Ala Thr Leu Leu Leu Leu Ala Asn Pro Gln Ala Ser Val Asp Glu Ile
 195 200 205
 Leu Gln Val Met Pro Gly Pro Asp Phe Pro Thr Gly Gly Ile Ile Cys
 210 215 220
 Gly Ser Glu Gly Ile Arg Ser Thr Tyr Thr Thr Gly Arg Gly Lys Ile
 225 230 235 240
 Lys Val Arg Ala Arg Leu His Val Glu Glu Asn Glu Asp Lys His Arg
 245 250 255
 Glu Ser Ile Ile Ile Thr Glu Met Pro Tyr Asn Val Asn Lys Ser Arg
 260 265 270
 Leu Ile Glu Gln Ile Ala Asn Leu Val Asn Glu Lys Thr Leu Ala Gly
 275 280 285
 Ile Ser Asp Val Arg Asp Glu Ser Asp Lys Asp Gly Ile Arg Val Val
 290 295 300
 Leu Glu Ile Lys Lys Gly Glu Ser Ser Glu Ile Ile Ile Asn Arg Leu
 305 310 315 320
 Tyr Lys Phe Thr Asp Val Gln Val Thr Phe Gly Ala Asn Met Leu Ala
 325 330 335
 Leu Asp Lys Asn Leu Pro Arg Thr Met Ser Ile His Arg Met Ile Ser
 340 345 350
 Ala Trp Ile Arg His Arg Lys Glu Val Ile Arg Arg Arg Thr Arg Tyr
 355 360 365
 Glu Leu Asn Lys Ala Glu Thr Arg Ala His Val Leu Glu Gly Tyr Leu
 370 375 380
 Lys Ala Leu Ser Cys Leu Asp Ala Leu Val Lys Thr Ile Arg Glu Ser
 385 390 395 400
 Gly Asn Lys Glu His Ala Lys Glu Arg Ile Ile Glu Ser Phe Gly Phe

Thr	Glu	Pro	Gln	Ala	Leu	Ala	Ile	Leu	Glu	Leu	Arg	Leu	Tyr	Gln	Leu	415
			420						425					430		
Thr	Gly	Leu	Glu	Ala	Glu	Lys	Ile	Gln	Lys	Glu	Tyr	Glu	Glu	Leu	Leu	445
		435					440							445		
Asn	Lys	Ile	Ala	Tyr	Tyr	Lys	Gln	Val	Leu	Ser	Asp	Glu	Gly	Leu	Val	460
		450				455								460		
Lys	Asp	Ile	Ile	Arg	Asn	Glu	Leu	Gln	Asp	Leu	Leu	Lys	His	His	Lys	480
		465			470				475						480	
Val	Ala	Arg	Arg	Thr	Thr	Ile	Glu	Phe	Asp	Ala	Asp	Asp	Ile	Arg	Asp	495
				485					490						495	
Ile	Glu	Asp	Ile	Ile	Thr	Asn	Glu	Ser	Val	Ile	Ile	Thr	Ile	Ser	Gly	510
			500						505					510		
Asp	Asp	Tyr	Val	Lys	Arg	Met	Pro	Val	Lys	Val	Phe	Lys	Glu	Gln	Arg	525
		515					520							525		
Arg	Gly	Gly	His	Gly	Val	Thr	Gly	Phe	Asp	Met	Lys	Lys	Gly	Ala	Gly	540
		530					535				540					
Phe	Leu	Lys	Ala	Val	Tyr	Ser	Ala	Phe	Thr	Lys	Asp	Tyr	Leu	Leu	Ile	560
					550					555					560	
Phe	Thr	Asn	Phe	Gly	Gln	Cys	Tyr	Trp	Leu	Lys	Val	Trp	Gln	Leu	Pro	575
				565					570					575		
Glu	Gly	Glu	Arg	Arg	Ala	Lys	Gly	Lys	Pro	Ile	Ile	Asn	Phe	Leu	Glu	590
			580						585					590		
Gly	Ile	Arg	Pro	Gly	Glu	Glu	Leu	Ala	Ala	Ile	Leu	Asn	Ile	Lys	Asn	605
		595					600							605		
Phe	Asp	Asn	Ala	Gly	Phe	Leu	Phe	Leu	Ala	Thr	Lys	Arg	Gly	Val	Val	620
		610				615								620		
Lys	Lys	Val	Ser	Leu	Asp	Ala	Phe	Ser	Asn	Pro	Arg	Lys	Lys	Gly	Ile	640
					630					635					640	
Arg	Ala	Leu	Glu	Ile	Asp	Glu	Gly	Asp	Glu	Leu	Ile	Ala	Ala	Cys	His	655
				645					650					655		
Ile	Val	Ser	Asp	Glu	Glu	Lys	Val	Met	Leu	Phe	Thr	His	Leu	Gly	Met	670
			660					665						670		
Ala	Val	Arg	Phe	Pro	His	Glu	Lys	Val	Arg	Pro	Met	Gly	Arg	Thr	Ala	685
		675					680							685		
Arg	Gly	Val	Arg	Gly	Val	Ser	Leu	Lys	Asn	Glu	Glu	Asp	Lys	Val	Val	700
		690				695								700		
Ser	Cys	Gln	Ile	Val	Thr	Glu	Asn	Gln	Ser	Val	Leu	Ile	Val	Cys	Asp	720
				710						715				720		
Gln	Gly	Phe	Gly	Lys	Arg	Ser	Leu	Val	Glu	Asp	Phe	Arg	Glu	Thr	Asn	735
				725					730					735		
Arg	Gly	Gly	Val	Gly	Val	Arg	Ser	Ile	Leu	Ile	Asn	Glu	Arg	Asn	Gly	750
			740					745						750		
Asn	Val	Leu	Gly	Ala	Ile	Pro	Val	Thr	Asp	His	Asp	Ser	Ile	Leu	Leu	765
		755					760							765		
Met	Ser	Ser	Gln	Gly	Gln	Ala	Ile	Arg	Ile	Asn	Met	Gln	Asp	Val	Arg	780
		770				775								780		
Val	Met	Gly	Arg	Ser	Thr	Gln	Gly	Val	Arg	Leu	Val	His	Leu	Lys	Glu	800
					790					795				800		
Gly	Asp	Ala	Leu	Val	Ser	Met	Glu	Lys	Leu	Ser	Ser	Asn	Glu	Asn	Asp	815
				805					810					815		
Asp	Glu	Val	Leu	Ser	Gly	Ser	Glu	Glu	Glu	Cys	Ser	Asp	Thr	Val	Ser	830
			820					825						830		
Leu	Arg															

<210>288

<211>789

<212>PRT

<213>Chlamydia pneumoniae

<400>288

Lys	Gly	Tyr	Lys	Leu	Phe	Val	Ser	Ala	Pro	Gly	Cys	Thr	Leu	Glu	Ile	
1			5						10					15		

Arg	Glu	Ser	Arg	Val	Phe	Ile	His	Leu	Val	Tyr	Glu	Val	Val	Asp	Asn	
			20					25						30		

Ser Ile Asp Glu Ala Met Ala Gly Tyr Cys Ser Arg Ile Val Arg
 35 40 45
 Ile Leu Glu Asp Gly Gly Ile Val Ile Val Asp Asn Gly Arg Gly Ile
 50 55 60
 Pro Ile Glu Val His Glu Arg Glu Ser Ala Lys Gln Gly Arg Glu Val
 65 70 75 80
 Ser Ala Leu Glu Val Val Leu Thr Val Leu His Ala Gly Gly Lys Phe
 85 90 95
 Asp Lys Asp Ser Tyr Lys Val Ser Gly Gly Leu His Gly Val Gly Val
 100 105 110
 Ser Cys Val Asn Ala Leu Ser Glu Lys Leu Val Ala Thr Val Phe Lys
 115 120 125
 Asp Lys Lys Cys Tyr Gln Met Glu Phe Ser Arg Gly Ile Pro Val Thr
 130 135 140
 Pro Leu Gln Tyr Val Ser Val Ser Asp Arg Gln Gly Thr Glu Ile Val
 145 150 155 160
 Phe Tyr Pro Asp Pro Lys Ile Phe Ser Thr Cys Thr Phe Asp Arg Ser
 165 170 175
 Ile Leu Met Lys Arg Leu Arg Glu Leu Ala Phe Leu Asn Arg Gly Ile
 180 185 190
 Thr Ile Val Phe Glu Asp Asp Arg Asp Val Ser Phe Asp Lys Val Thr
 195 200 205
 Phe Phe Tyr Glu Gly Gly Ile Gln Ser Phe Val Ser Tyr Leu Asn Gln
 210 215 220
 Asn Lys Glu Ser Leu Phe Ser Glu Pro Ile Tyr Ile Cys Gly Thr Arg
 225 230 235 240
 Val Gly Asp Asp Gly Glu Ile Glu Phe Glu Ala Ala Leu Gln Tyr Asn
 245 250 255
 Ser Gly Tyr Ser Glu Leu Val Tyr Ser Tyr Ala Asn Asn Ile Pro Thr
 260 265 270
 Arg Gln Gly Gly Thr His Leu Thr Gly Phe Ser Thr Ala Leu Thr Arg
 275 280 285
 Val Ile Asn Thr Tyr Ile Lys Ala His Asn Leu Ala Lys Asn Asn Lys
 290 295 300
 Leu Ala Leu Thr Gly Glu Asp Ile Arg Glu Gly Leu Thr Ala Val Ile
 305 310 315 320
 Ser Val Lys Val Pro Asn Pro Gln Phe Glu Gly Gln Thr Lys Gln Lys
 325 330 335
 Leu Gly Asn Ser Asp Val Ser Ser Val Ala Gln Gln Val Val Gly Glu
 340 345 350
 Ala Leu Thr Ile Phe Phe Glu Glu Asn Pro Gln Ile Ala Arg Met Ile
 355 360 365
 Val Asp Lys Val Phe Val Ala Ala Gln Ala Arg Glu Ala Ala Lys Lys
 370 375 380
 Ala Arg Glu Leu Thr Leu Arg Lys Ser Ala Leu Asp Ser Ala Arg Leu
 385 390 395 400
 Pro Gly Lys Leu Ile Asp Cys Leu Glu Lys Asp Pro Glu Lys Cys Glu
 405 410 415
 Met Tyr Ile Val Glu Gly Asp Ser Ala Gly Gly Ser Ala Lys Gln Gly
 420 425 430
 Arg Asp Arg Arg Phe Gln Ala Ile Leu Pro Ile Arg Gly Lys Ile Leu
 435 440 445
 Asn Val Glu Lys Ala Arg Leu Gln Lys Ile Phe Gln Asn Gln Glu Ile
 450 455 460
 Gly Thr Ile Ile Ala Ala Leu Gly Cys Gly Ile Gly Ala Asp Asn Phe
 465 470 475 480
 Asn Leu Ser Lys Leu Arg Tyr Arg Arg Ile Ile Ile Met Thr Asp Ala
 485 490 495
 Asp Val Asp Gly Ser His Ile Arg Thr Leu Leu Leu Thr Phe Phe Tyr
 500 505 510
 Arg His Met Thr Ala Leu Ile Glu Asn Glu Cys Val Tyr Ile Ala Gln
 515 520 525
 Pro Pro Leu Tyr Lys Val Ser Lys Lys Lys Asp Phe Arg Tyr Ile Leu
 530 535 540

Ser Glu Lys Glu Asp Ser Tyr Leu Leu Met Leu Thr Asn Glu
 545 550 555 560
 Ser Ser Ile Leu Phe Lys Ser Thr Glu Arg Glu Leu Arg Gly Glu Ala
 565 570 575
 Leu Glu Ser Phe Ile Asn Val Ile Leu Asp Val Glu Ser Phe Ile Asn
 580 585 590
 Thr Leu Glu Lys Lys Ala Ile Pro Phe Ser Glu Phe Leu Glu Met Tyr
 595 600 605
 Lys Glu Gly Ile Gly Tyr Pro Leu Tyr Tyr Leu Ala Pro Ala Thr Gly
 610 615 620
 Met Glu Gly Gly Arg Tyr Leu Tyr Ser Asp Glu Glu Lys Glu Glu Ala
 625 630 635 640
 Leu Ala Gln Glu Glu Thr His Lys Phe Lys Ile Ile Glu Leu Tyr Lys
 645 650 655
 Val Ala Val Phe Val Asp Ile Gln Asn Gln Leu Lys Glu Tyr Gly Leu
 660 665 670
 Asp Ile Ser Ser Tyr Leu Ile Pro Gln Lys Asn Glu Ile Val Ile Gly
 675 680 685
 Asn Glu Asp Ser Pro Ser Cys Asn Tyr Ser Cys Tyr Thr Leu Glu Glu
 690 695 700
 Val Ile Asn Tyr Leu Lys Asn Leu Gly Arg Lys Gly Ile Glu Ile Gln
 705 710 715 720
 Arg Tyr Lys Gly Leu Gly Glu Met Asn Ala Asp Gln Leu Trp Asp Thr
 725 730 735
 Thr Met Asn Pro Glu Gln Arg Thr Leu Ile His Val Ser Leu Lys Asp
 740 745 750
 Ala Val Glu Ala Asp His Ile Phe Thr Met Leu Met Gly Glu Glu Val
 755 760 765
 Pro Pro Arg Arg Glu Phe Ile Glu Ser His Ala Leu Ser Ile Arg Ile
 770 775 780
 Asn Asn Leu Asp Ile
 785

<210>289

<211>116

<212>PRT

<213>Chlamydia pneumoniae

<400>289

Asp Met Phe Leu Lys Arg Lys Lys Arg Gly Gly Ser Gln Val Gln Asn
 1 5 10 15
 Lys Gly Thr Ala Ser Pro Ile Lys His Ala Lys His Tyr Leu His Asn
 20 25 30
 Tyr Leu Gln Glu Leu Gln Lys Ile Met Ala Ala Arg Pro His Asp Ala
 35 40 45
 Ile Asp Ala Trp Asn Gln Val Phe Arg Asp Lys Tyr Lys Gly Met Ser
 50 55 60
 Gln Ala Ile Gly Phe Arg Asp His Ile Leu Leu Val Lys Val Tyr Asn
 65 70 75 80
 Ser Ser Leu Tyr Ala Leu Leu Lys Gln Thr Pro Gln Asn Asp Leu Ile
 85 90 95
 Met Ser Leu Tyr Gln Val Ala Ser His Val Gln Ile Arg Glu Ile Gln
 100 105 110
 Phe Leu Leu Gly
 115

<210>290

<211>200

<212>PRT

<213>Chlamydia pneumoniae

<400>290

Asn Ile Ser Ile Phe Tyr Pro Lys Tyr Phe Ile Glu Gly Lys Glu Val
 1 5 10 15
 Leu Ile Lys Asn Leu Pro Pro Leu Ile Phe Tyr Gly Val Ile Leu Met
 20 25 30
 Ile Ile Asn Val Arg Ala Pro Ala Phe Gly Ile Thr Ser Val Gln Gln
 35 40 45

Phe Ser Thr Asn Phe Gln Ala Ala Ile Pro Ile Leu Asn Val Ile
 50 55 60
 Gly Cys Ser Arg Ile Ser Ser Thr Tyr Ala Glu Asp Ile Glu Glu Val
 65 70 75 80
 Ala Gln Glu Lys Leu Glu Lys Ser Thr His Ser Lys Ser Ser Thr Ser
 85 90 95
 Val Asn Leu Trp Ala His Arg Val Arg Gly Val Val Glu Ile Leu Gly
 100 105 110
 Gly Gly Ile Val Ile Leu Ala Leu Glu Ile Thr Ala Leu Val Leu Gln
 115 120 125
 Val Ile Ile Lys Leu Ile Lys Cys Leu Ile Asp Val Leu Cys Val Cys
 130 135 140
 Leu Phe Gly Leu Gly Val Cys Val Val Ala Ile Ile Gly Ala Ile Ala
 145 150 155 160
 Phe Cys Val Val Val Val Val Lys Tyr Leu Gly Phe Cys Ser Gln Gly
 165 170 175
 Glu Glu Leu Glu Pro Ile Glu Val Lys Thr Leu Ile Ser Pro Asp Lys
 180 185 190
 Pro Tyr Pro Thr Val Val Tyr Val
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<210>291

<211>275

<212>PRT

<213>Chlamydia pneumoniae

<400>291

Arg Asp Ser Met Lys Lys Lys Leu Ser Leu Leu Val Gly Leu Ile Phe
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 Val Leu Ser Ser Cys His Lys Gln Asp Ala Gln Asn Lys Ile Arg Ile
 20 25 30
 Val Ala Ser Pro Thr Pro His Ala Glu Leu Leu Glu Ser Leu Gln Glu
 35 40 45
 Glu Ala Lys Asp Leu Gly Ile Lys Leu Lys Ile Leu Pro Val Asp Asp
 50 55 60
 Tyr Arg Ile Pro Asn Arg Leu Leu Leu Asp Lys Gln Val Asp Ala Asn
 65 70 75 80
 Tyr Phe Gln His Gln Ala Phe Leu Asp Asp Glu Cys Glu Arg Tyr Asp
 85 90 95
 Cys Lys Gly Glu Leu Val Val Ile Ala Lys Val His Leu Glu Pro Gln
 100 105 110
 Ala Ile Tyr Ser Lys Lys His Ser Ser Leu Glu Arg Leu Lys Ser Gln
 115 120 125
 Lys Lys Leu Thr Ile Ala Ile Pro Val Asp Arg Thr Asn Ala Gln Arg
 130 135 140
 Ala Leu His Leu Leu Glu Cys Gly Leu Ile Val Cys Lys Gly Pro
 145 150 155 160
 Ala Asn Leu Asn Met Thr Ala Lys Asp Val Cys Gly Lys Glu Asn Arg
 165 170 175
 Ser Ile Asn Ile Leu Glu Val Ser Ala Pro Leu Leu Val Gly Ser Leu
 180 185 190
 Pro Asp Val Asp Ala Ala Val Ile Pro Gly Asn Phe Ala Ile Ala Ala
 195 200 205
 Asn Leu Ser Pro Lys Lys Asp Ser Leu Cys Leu Glu Asp Leu Ser Val
 210 215 220
 Ser Lys Tyr Thr Asn Leu Val Val Ile Arg Ser Glu Asp Val Gly Ser
 225 230 235 240
 Pro Lys Met Ile Lys Leu Gln Lys Leu Phe Gln Ser Pro Ser Val Gln
 245 250 255
 His Phe Phe Asp Thr Lys Tyr His Gly Asn Ile Leu Thr Met Thr Gln
 260 265 270
 Asp Asn Gly
 275

<210>293

<211>221

<212>PRT

<213>Chlamydia pneumoniae

<400>292

Met Gln Ser Asp Leu Ile Gln Ile Leu Leu Lys Glu Thr Val Asn Thr
1 5 10 15
Leu Tyr Met Val Ser Thr Ala Phe Phe Phe Ser Cys Ala Ile Gly Gly
20 25 30
Met Leu Gly Leu Gly Leu Phe Cys Thr Ser Pro Lys Ser Leu Asn Pro
35 40 45
Lys Lys Ser Leu Tyr Ala Thr Ile Ser Met Ile Leu Ser Phe Leu Thr
50 55 60
Ala Ile Pro Phe Ala Ile Leu Ile Val Ile Leu Phe Pro Ile Thr Arg
65 70 75 80
Trp Ile Val Gly Thr Ser Leu Gly Pro Thr Ala Ser Ile Val Pro Leu
85 90 95
Thr Ile Gly Ala Ile Pro Phe Val Val Thr Ile Val Val Asp Ala Phe
100 105 110
Arg Asn Ser Ala Leu Asn Tyr Leu Glu Ser Ala Val Ala Leu Gly Ile
115 120 125
Pro Lys Arg Asn Ile Leu Phe Gly Ile Leu Leu Pro Glu Ser Tyr Pro
130 135 140
Gln Leu Ile Phe Ser Leu Lys Ser Leu Val Val His Leu Ile Ser Cys
145 150 155 160
Ser Thr Leu Ala Gly Phe Val Gly Gly Gly Gly Leu Gly Gln Leu Leu
165 170 175
Leu Gln Tyr Gly Tyr Tyr Arg Phe Glu Trp Ser Val Thr Thr Ser Val
180 185 190
Leu Val Ile Thr Leu Val Leu Ile Glu Ser Val Arg Ile Leu Gly Asp
195 200 205
Phe Trp Gly Arg Arg Val Leu Lys Tyr Arg Gly Ile Leu
210 215 220

<210>293

<211>341

<212>PRT

<213>Chlamydia pneumoniae

<400>293

Val Ser Glu Gln His Ser Pro Ile Ile Ser Val Gln Asp Val Ser Lys
1 5 10 15
Lys Leu Gly Asp His Ile Leu Leu Ser Lys Val Ser Phe Ser Val Tyr
20 25 30
Pro Gly Glu Val Phe Gly Ile Val Gly His Ser Gly Ser Gly Lys Thr
35 40 45
Thr Leu Leu Arg Cys Leu Asp Phe Leu Asp Met Pro Thr Ser Gly Ser
50 55 60
Ile Ser Val Ala Gly Phe Asp Asn Ser Leu Pro Thr Gln Lys Phe Ser
65 70 75 80
Arg Arg Asn Phe Ser Lys Lys Val Ala Tyr Ile Ser Gln Asn Tyr Gly
85 90 95
Leu Phe Ser Ser Lys Thr Val Phe Glu Asn Ile Ala Tyr Pro Leu Arg
100 105 110
Ile His His Ser Glu Met Ser Lys Ser Glu Val Glu Glu Gln Val Tyr
115 120 125
Asp Thr Leu Asn Phe Leu Asn Leu Tyr His Arg His Asp Ala Tyr Pro
130 135 140
Gly Asn Leu Ser Gly Gly Gln Lys Gln Glu Val Ala Ile Ala Arg Ala
145 150 155 160
Ile Val Cys Gln Pro Glu Val Val Leu Cys Asp Glu Ile Thr Ser Ala
165 170 175
Leu Asp Pro Lys Ser Thr Glu Asn Ile Ile Glu Arg Leu Leu Gln Leu
180 185 190
Asn Gln Glu Arg Gly Ile Thr Leu Val Leu Val Ser His Glu Ile Asp
195 200 205
Val Val Lys Lys Ile Cys Ser His Val Leu Val Met His Gln Gly Ala
210 215 220
Val Glu Glu Leu Gly Thr Thr Glu Glu Leu Phe Leu Asn Ser Glu Asn

225 235 240
 Ser Ile Thr Asn Glu Leu Phe His Glu Asp Ile Asn Ile Ala Ala Leu
 245 250 255
 Ser Ser Cys Tyr Phe Ala Glu Asp Arg Glu Glu Val Leu Arg Leu Asn
 260 265 270
 Phe Ser Lys Glu Leu Ala Ile Gln Gly Ile Ile Ser Lys Val Ile Gln
 275 280 285
 Thr Gly Leu Val Ser Ile Asn Ile Leu Ser Gly Asn Ile Asn Leu Phe
 290 295 300
 Arg Lys Ser Pro Met Gly Phe Leu Ile Ile Val Leu Glu Gly Glu Val
 305 310 315 320
 Glu Gln Arg Lys Lys Ala Lys Glu Leu Leu Ile Glu Leu Gly Val Val
 325 330 335
 Ile Lys Glu Phe Tyr
 340
 <210>294
 <211>357
 <212>ERT
 <213>Chlamydia pneumoniae
 <400>294
 Ile Ser Leu Arg Arg His Thr Leu Met Leu Asn Ile His Asp Ile Leu
 1 5 10 15
 Gly Asn Asp Asp Glu Asn Leu Leu Ser Tyr Gln Cys Lys His Ile Thr
 20 25 30
 Lys Asp Lys Leu Thr Leu Pro Ser His Asp Phe Val Asp Lys Val Phe
 35 40 45
 Gly Leu Ser Asp Arg Asn Asn Arg Val Leu Arg Ser Leu Gln Thr Met
 50 55 60
 Phe Ser His Gly Arg Leu Ala Asn Ser Gly Tyr Leu Ser Ile Leu Pro
 65 70 75 80
 Val Asp Gln Gly Ile Glu His Ser Ala Gly Ala Ser Phe Ala Ile Asn
 85 90 95
 Pro Ile Tyr Phe Asp Pro Glu Asn Ile Val Lys Leu Ala Ile Glu Ser
 100 105 110
 Gly Cys Ser Ala Val Ala Ser Thr Tyr Gly Thr Leu Ser Leu Leu Ser
 115 120 125
 Arg Lys Tyr Ala His Lys Ile Pro Phe Met Leu Lys Leu Asn His Asn
 130 135 140
 Glu Leu Leu Ser Tyr Pro Thr Lys Tyr His Gln Ile Phe Phe Thr Gln
 145 150 155 160
 Val Glu Ala Ala Tyr Ser Met Gly Ala Val Ala Val Gly Ala Thr Val
 165 170 175
 Tyr Phe Gly Ser Glu Thr Ser Asn Glu Glu Ile Val Ala Val Ser Asn
 180 185 190
 Ala Phe Ala Lys Ala Arg Ser Leu Gly Leu Ala Thr Val Leu Trp Cys
 195 200 205
 Tyr Leu Arg Asn Pro Ala Phe Val Ala Asn Gly Val Asp Tyr His Thr
 210 215 220
 Ala Ala Asp Leu Thr Gly Gln Ala Asp His Leu Gly Ala Thr Leu Gly
 225 230 235 240
 Ala Asp Ile Val Lys Gln Lys Leu Pro Thr Cys Gln Gly Gly Phe Lys
 245 250 255
 Ala Ile Asn Phe Gly Lys Thr Asp Glu Arg Val Tyr Ser Glu Leu Ser
 260 265 270
 Ser Asn His Pro Ile Asp Leu Cys Arg Tyr Gln Val Leu Asn Ser Tyr
 275 280 285
 Cys Gly Lys Val Gly Leu Ile Asn Ser Gly Gly Pro Ser Gly Lys Asn
 290 295 300
 Asp Phe Thr Glu Ala Ala Arg Thr Ala Val Ile Asn Lys Arg Ala Gly
 305 310 315 320
 Gly Met Gly Leu Ile Leu Gly Arg Lys Ala Phe Gln Arg Pro Leu Ser
 325 330 335
 Glu Gly Ile Gln Leu Leu Asn Leu Val Gln Asp Ile Tyr Leu Asp Pro
 340 345 350

Asn Ile Thr Ile A
355

<210>295

<211>468

<212>PRT

<213>Chlamydia pneumoniae

<400>395

Met	His	Ser	His	Ser	Lys	Pro	Thr	Lys	Pro	Leu	Gly	Thr	Phe	Thr	Val
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Gly	Met	Leu	Ser	Leu	Ala	Val	Val	Ile	Ser	Leu	Arg	Asn	Leu	Pro	Leu
		20						25					30		
Thr	Ala	Lys	His	Gly	Leu	Ser	Thr	Leu	Phe	Phe	Tyr	Gly	Leu	Ala	Val
	35						40					45			
Ile	Cys	Phe	Met	Ile	Pro	Tyr	Ala	Leu	Ile	Ser	Ala	Glu	Leu	Ala	Ser
	50					55					60				
Phe	Lys	Pro	Gln	Gly	Ile	Tyr	Ile	Trp	Ala	Arg	Asp	Ala	Leu	Gly	Lys
65				70					75						80
Trp	Trp	Gly	Phe	Phe	Ala	Ile	Trp	Met	Gln	Trp	Phe	His	Asn	Met	Thr
			85					90						95	
Trp	Tyr	Pro	Ala	Val	Leu	Ala	Phe	Ile	Ala	Ser	Thr	Ile	Val	Tyr	Lys
			100					105					110		
Ile	Asn	Pro	Glu	Leu	Ala	His	Asn	Lys	Val	Tyr	Ile	Ala	Thr	Val	Ile
	115						120					125			
Leu	Ala	Gly	Phe	Trp	Ile	Leu	Thr	Phe	Phe	Asn	Phe	Leu	Gly	Ile	Thr
130						135					140				
Ser	Ser	Ala	Leu	Phe	Ser	Ser	Ile	Cys	Val	Ile	Ile	Gly	Thr	Leu	Ile
145					150				155						160
Pro	Gly	Val	Ile	Leu	Val	Ser	Leu	Ala	Leu	Phe	Trp	Ile	Phe	Ser	Gly
				165				170						175	
Asn	Pro	Ile	Ala	Ile	Ser	Leu	Ser	Trp	Gly	Asn	Leu	Leu	Pro	Asn	Phe
			180					185					190		
Ser	Asn	Val	Ser	Ser	Leu	Val	Leu	Leu	Ala	Gly	Met	Leu	Leu	Ala	Leu
		195				200						205			
Cys	Gly	Leu	Glu	Ala	Asn	Ala	Asn	Leu	Ala	Ser	Asp	Met	Val	Asn	Pro
210					215						220				
Arg	Lys	Asn	Tyr	Pro	Lys	Ala	Val	Phe	Ile	Gly	Ala	Ile	Ala	Thr	Leu
225					230					235					240
Thr	Ile	Leu	Val	Leu	Gly	Ser	Leu	Ser	Ile	Ala	Ile	Val	Ile	Pro	Lys
			245					250						255	
Glu	Glu	Ile	Ser	Leu	Val	Ser	Gly	Leu	Val	Lys	Thr	Phe	Thr	Leu	Phe
			260					265					270		
Phe	Asp	Lys	Tyr	Asn	Leu	Ser	Trp	Met	Thr	Gly	Ile	Val	Val	Val	Met
	275						280					285			
Thr	Ile	Ala	Gly	Ser	Leu	Gly	Glu	Leu	Asn	Ala	Trp	Met	Phe	Ala	Gly
	290					295						300			
Thr	Lys	Gly	Leu	Phe	Ile	Ser	Thr	Gln	Asn	Asp	Cys	Leu	Pro	Arg	Leu
305					310					315					320
Phe	Lys	Lys	Val	Asn	Ser	Lys	Asn	Val	Pro	Thr	Asn	Leu	Met	Leu	Phe
			325					330						335	
Gln	Gly	Ile	Val	Val	Thr	Ile	Phe	Thr	Leu	Leu	Phe	Leu	Cys	Leu	Asp
			340				345						350		
Ser	Ala	Asp	Leu	Val	Tyr	Trp	Ile	Leu	Thr	Ala	Leu	Ser	Val	Gln	Met
		355					360					365			
Tyr	Leu	Ala	Met	Tyr	Ile	Cys	Leu	Phe	Leu	Ala	Gly	Pro	Ile	Leu	Arg
	370					375					380				
Ile	Lys	Glu	Pro	Arg	Ala	Gln	Arg	Leu	Tyr	Ser	Val	Pro	Gly	Lys	Phe
385					390				395						400
Leu	Gly	Ile	Cys	Thr	Met	Ser	Ile	Leu	Gly	Ile	Leu	Ser	Cys	Ala	Phe
			405					410					415		
Ala	Leu	Trp	Val	Ser	Phe	Leu	Pro	Pro	Arg	Glu	Leu	Ala	Gln	Ile	Ser
			420					425					430		
Glu	Gly	Ser	Lys	Ile	Gly	Tyr	Thr	Thr	Phe	Leu	Leu	Leu	Ala	Phe	Ser
			435				440					445			
Leu	Asn	Cys	Leu	Ile	Pro	Phe	Gly	Ile	Tyr	Phe	Thr	His	Lys	Arg	Leu

450 455 460
 Ser Lys Lys Ser
 465
 <210>296
 <211>309
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>296
 Arg Gly Ala Lys Phe Cys Arg Thr Lys Lys Tyr Ile Thr Pro Phe Leu
 1 5 10 15
 His His Leu Phe Glu Gly Asp Glu Val Ala Leu Leu Asn Gln Leu Ser
 20 25 30
 Leu Arg Leu Asp Leu Ile Val Pro Asn Ala Leu Tyr Pro Glu Pro Asp
 35 40 45
 Pro Ser Cys Trp Gln Ser Ile Asn Ser Glu Asp Cys Ala Lys Asp Ala
 50 55 60
 Glu Asp Gln Gln Glu Asp Phe Asn Lys Thr Lys Glu Ala Cys Lys Glu
 65 70 75 80
 Gly Leu Lys Lys Leu Val Leu Pro Ala Leu Ser Ile Thr Ser Ile Pro
 85 90 95
 Gln Leu Leu Arg Ala Arg Arg Phe Lys Gln Gly Ala Glu Ile Leu Met
 100 105 110
 Ala Ile Asp Arg Lys Lys Met Lys Gln Asn Pro Phe Ile Phe Leu Glu
 115 120 125
 Ala Leu Leu Glu Ser Glu Glu Phe Ser Ile Ser Val Gly Lys Tyr Leu
 130 135 140
 Lys Leu Leu Met Pro Ile His Leu Trp Asp Lys Leu Leu His Ala Ile
 145 150 155 160
 Tyr Leu Gly Tyr Phe Gln Thr Gly Leu Ile Cys Gln Gly Glu Ile Glu
 165 170 175
 Thr Phe Cys Arg Arg Ala Asn Leu Asn Pro Glu Ala Phe Gln Ala Ala
 180 185 190
 Ile Gln Gln Gly Arg Leu Leu Ser Phe Leu Phe Pro Lys Met Leu Leu
 195 200 205
 Asp

<210>297
 <211>168
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>297

Phe Leu Asp Met Asn Ile Pro Ala Pro Gln Val Pro Val Ile Asp Glu
 1 5 10 15
 Pro Val Val Asn Asn Thr Ser Ser Tyr Gly Leu Ser Leu Lys Ser Ser
 20 25 30
 Leu Arg Pro Ile Thr Tyr Leu Ile Leu Ala Ile Leu Ala Ile Ala Thr
 35 40 45
 Leu Met Ser Val Leu Tyr Phe Cys Gly Ile Ile Ser Val Gly Thr Phe
 50 55 60
 Val Leu Gly Met Leu Ile Pro Leu Ser Val Cys Ser Val Leu Cys Val
 65 70 75 80
 Ala Tyr Leu Phe Tyr Gln Gln Ser Ser Ile Glu Lys Thr Lys Val Phe
 85 90 95
 Ser Ile Thr Ser Pro Ser Val Phe Phe Ser Asp Glu Asp Leu Asn Leu
 100 105 110
 Leu Leu Gly Arg Glu Glu Asp Ser Val Ser Ala Ile Asp Glu Leu Leu
 115 120 125
 Lys Asn Phe Pro Ala Asp Asp Phe Arg Arg Pro Lys Met Leu Pro Tyr
 130 135 140
 Ser Asn Phe Leu Asp Glu Gln Gly Arg Pro Asn Glu Ser Arg Glu Glu
 145 150 155 160
 Asp Ser His Thr Ser Lys Ile Leu
 165

<210>298

<211>517
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>298

Lys	Glu	Leu	Phe	Asn	Leu	Phe	Phe	Phe	Thr	Ala	Asn	Lys	Glu	Thr	Thr
1				5					10					15	
Ala	Ser	His	Glu	Leu	Ile	Tyr	Arg	Lys	Asn	Gln	Ser	Phe	Ser	Leu	Ser
			20					25					30		
Pro	Val	Thr	Ile	Leu	Cys	Leu	Leu	Ala	Ile	Ser	Val	Leu	Leu	Leu	Leu
		35					40					45			
Gly	Val	Val	Phe	Ala	Leu	Val	Gly	Cys	His	Val	Leu	Ala	Ala	Pro	Leu
	50					55					60				
Gly	Leu	Leu	Val	Trp	Gly	Cys	Ala	Ala	Ser	Val	Cys	Ser	Met	Met	Ala
	65				70					75					80
Ile	Val	Ser	Leu	Met	Cys	Leu	Tyr	Lys	Gly	Gly	Lys	Pro	Leu	Ile	Glu
			85						90					95	
Pro	Ser	Asn	Glu	Glu	Lys	Ile	Asp	Pro	Thr	Lys	Asp	Leu	Glu	Ile	Lys
		100						105					110		
Asp	Pro	Glu	Ser	Leu	Lys	Pro	Val	Pro	Val	Glu	Gly	Gln	Ser	Leu	Pro
	115						120					125			
Lys	Glu	Arg	Lys	Thr	Val	Ser	Phe	Lys	Ala	Lys	Ile	Pro	Ser	Ile	Val
	130				135						140				
Glu	Asp	Asp	Phe	Lys	Pro	Tyr	Val	Ile	Gln	Ser	Thr	Phe	Tyr	His	Gln
	145				150					155					160
Asn	Lys	Val	Tyr	Ser	Lys	Pro	Ile	Ala	Glu	Arg	Met	Gln	Ser	Leu	Glu
			165					170						175	
Lys	Glu	Ile	Thr	Thr	Leu	Ile	Val	Asp	Phe	Pro	Arg	Ala	Leu	Glu	Glu
		180						185					190		
Ser	Ser	Lys	Ser	Ser	Gly	Ser	Leu	Leu	Arg	Gly	Val	Ile	Ser	Glu	Ile
	195				200							205			
Lys	Asn	Leu	Phe	Leu	Pro	Arg	Phe	Leu	Ser	Arg	Lys	Val	Lys	Tyr	Ser
	210				215						220				
Leu	Thr	Ala	Cys	Leu	Arg	Arg	Leu	Gly	Ser	Ile	Val	Glu	Glu	Tyr	Ala
	225				230					235					240
Ser	Ser	Asp	Leu	Leu	Ile	Leu	Leu	Leu	Thr	Lys	Pro	Glu	Pro	Leu	Asn
		245						250						255	
Met	Val	Thr	Gln	Gln	Leu	Ile	Ala	His	Leu	Asn	Ser	Leu	Lys	Thr	Glu
		260						265					270		
Lys	Arg	Lys	Leu	Thr	Pro	His	Met	Gln	Lys	Leu	Val	Leu	Ser	Ile	Asn
	275				280							285			
Phe	Trp	Phe	Tyr	Gly	Trp	Ser	Leu	Glu	Glu	Lys	Cys	Ile	Glu	Lys	Ile
	290				295						300				
Val	Ala	Tyr	Asp	Pro	Asn	Leu	Leu	Thr	Asp	Glu	Leu	Lys	Ala	His	Leu
	305				310					315					320
Glu	Ala	Gly	Asn	Ile	Val	Gln	Phe	Leu	Leu	Ser	Phe	Gln	Ser	Ser	Glu
			325					330						335	
Met	Gln	Arg	Glu	Phe	Arg	Ala	Leu	Phe	Pro	Ser	Asp	Ala	Gln	Glu	Leu
		340						345					350		
Pro	Ser	Ala	Lys	Asp	Gly	Ser	Asn	Tyr	Val	Pro	Ala	Ile	Asn	Ser	Ser
	355				360							365			
Glu	Tyr	Met	Tyr	Asp	Phe	Lys	Asp	Leu	Ser	Val	Leu	Lys	Lys	Ser	Leu
	370				375						380				
Ser	Glu	Arg	Leu	Ala	Phe	Cys	Glu	Lys	Ile	Pro	Ser	Pro	Ser	Ser	Trp
	385				390					395					400
Asn	Phe	Thr	Ser	Ser	Val	Ala	Ser	His	Tyr	Lys	Asp	Phe	Ser	Leu	Leu
			405					410						415	
Phe	Thr	Phe	Phe	Ser	Asn	Gln	Gln	Ser	Val	Ile	Leu	Gln	Asn	Pro	Phe
		420						425					430		
Leu	Leu	Ile	Glu	Leu	Leu	His	Glu	Asn	Pro	Lys	Cys	Gln	Thr	Phe	Leu
	435						440					445			
Lys	Gly	Leu	Leu	Glu	Lys	Ala	Met	Pro	Met	Ser	Asn	Trp	Ala	Ala	Leu
	450					455					460				
Phe	Arg	Pro	Met	Leu	Met	Gly	Met	Leu	Cys	Ser	Gly	Ile	Ala	Arg	Lys
	465				470					475					480

Lys Glu Leu Lys Ile Ile Ala Glu His Leu Gly Val Pro Leu Lys Glu
 485 490 495
 Ile Thr Gln Ala Ile Gly Ser Gly Lys Ile Leu Asp Leu Leu Leu Gln
 500 505 510
 His Leu Phe Asp Phe
 515

<210>299

<211>500

<212>PRT

<213>Chlamydia pneumoniae

<400>299

Ser Cys Arg Glu Ser Lys Gly Lys Ile Met Val Gly Glu Gln Asn Arg
 1 5 10 15
 Asn Glu Glu Lys Leu Asp Thr Ala Phe Ser Ser Gly Asn Leu Met Asp
 20 25 30
 Ser Arg Thr Ser His Leu Asp Asp Glu Leu Ser Phe Lys Leu Glu Lys
 35 40 45
 Ala Phe Thr Cys Leu Ser Thr Asp Ile His Ser His Asp Leu Ser Lys
 50 55 60
 Ile Val Ile Glu Tyr Asn Pro Ile Asp Leu Ala Tyr Ala Val Ser Cys
 65 70 75 80
 Leu Pro Ser Glu Ser Arg Ala Ile Leu Tyr Lys Asn Leu Ser Cys Ile
 85 90 95
 Thr Ala Lys Val Ala Phe Ile Ile Asn Thr Asp Ser Ala Ser Arg Trp
 100 105 110
 Ala Ile Phe Arg Arg Leu Ser Asp Ser Glu Val Cys Ala Leu Ile Glu
 115 120 125
 Gln Met Pro Pro Asp Glu Ala Val Trp Val Leu Asp Asp Ile Pro Asp
 130 135 140
 Arg Arg Tyr Arg Arg Ile Leu Glu Leu Ile Asp Ser Lys Lys Ala Leu
 145 150 155 160
 Lys Ile Arg Asp Leu Gln Lys His Gly Arg Asn Thr Ala Gly Arg Leu
 165 170 175
 Met Thr Asn Glu Phe Phe Ala Phe Leu Met Glu Thr Thr Val Lys Asp
 180 185 190
 Val Ser Ala Cys Ile Arg Ser Asn Pro Gly Ile Asp Leu Thr Arg Leu
 195 200 205
 Val Phe Val Leu Asp Phe Lys Gly Glu Leu Gln Gly Val Val Thr Asp
 210 215 220
 Arg Ser Leu Ile Ile Asn Pro Pro Glu Met Ser Leu Lys Gln Ile Met
 225 230 235 240
 Asn Gln Ile Glu His Lys Val Leu Pro Asp Ala Thr Arg Glu Glu Val
 245 250 255
 Val Asp Leu Val Glu Arg Tyr Lys Ile Ala Ala Leu Pro Val Val Asp
 260 265 270
 Glu Glu Asn Phe Leu Ile Gly Ala Ile Thr Tyr Glu Asp Val Val Glu
 275 280 285
 Ala Ile Glu Asp Ile Ala Asp Glu Thr Ile Ala Arg Met Ala Gly Thr
 290 295 300
 Thr Glu Asp Val Gly Tyr Gln Thr Cys His Val Val Gln Arg Phe Leu
 305 310 315 320
 Leu Arg Ala Pro Trp Leu Leu Val Thr Leu Phe Ala Gly Leu Ile Ser
 325 330 335
 Ala Ser Val Met Ala Tyr Phe Gln Lys Ile Ser Pro Ala Leu Leu Ala
 340 345 350
 Leu Ile Ile Phe Phe Ile Pro Leu Ile Asn Gly Met Ser Gly Asn Val
 355 360 365
 Gly Val Gln Cys Ser Thr Ile Leu Val Arg Ser Met Ala Thr Gly Thr
 370 375 380
 Leu Ser Phe Gly Arg Arg Arg Glu Thr Ile Phe Lys Glu Met Ser Ile
 385 390 395 400
 Gly Leu Leu Thr Gly Val Val Leu Gly Ile Leu Cys Gly Leu Val Val
 405 410 415
 Tyr Leu Met Gly Phe Leu Gly Leu Asn Ile Phe Ser Gly Gly Gly Ile

420 425 430
 Gln Leu Gly Val Thr Val Ala Thr Gly Val Leu Gly Ala Ser Leu Thr
 435 440 445
 Ala Thr Thr Leu Gly Val Leu Ser Pro Phe Phe Phe Ala Lys Leu Gly
 450 455 460
 Val Asp Pro Ala Leu Ala Ser Gly Pro Ile Val Thr Ala Leu Asn Asp
 465 470 475 480
 Ile Met Ser Met Ile Ile Phe Phe Leu Ile Ala Gly Gly Ile Asn Phe
 485 490 495
 Leu Phe Phe Asn
 500
 <210>300
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 <212>PRT
 <213>Chlamydia pneumoniae
 <400>300
 Arg Arg Cys Met Ile Arg Ser Pro Leu Pro Phe Ile Ser Ser Lys Arg
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 Ala Leu Asn Met Leu Gly Leu Gln Asp Glu Phe Ser Cys Pro Glu Asp
 20 25 30
 Val Val Asp Phe Leu Phe Ser Glu Ile Glu Leu Leu Ala Gln Gln Asp
 35 40 45
 Glu Pro Ser Glu Gly Tyr Leu Ala Leu Ser Arg Ser Leu Leu Met Met
 50 55 60
 Thr His Asn His Pro Lys Val Val Lys Arg Val Ile Phe Tyr Gly Val
 65 70 75 80
 Ser Tyr Gly Leu Lys His Lys Ser Met Ser Ile Phe Ile Asp Val Leu
 85 90 95
 Thr Tyr Ile Asp Phe Leu Phe Glu Lys Leu Gly Ile Ser Ala Ser Asp
 100 105 110
 Arg Leu Ser Leu Cys Ser Ala Arg Thr Cys Ile Asn Phe Glu Leu Tyr
 115 120 125
 Ser Gln Thr Gly Glu Met Lys Phe Leu Ser Glu Val Val Asp Asn Phe
 130 135 140
 Arg Leu Ile Glu Gln Leu Leu Lys Met His Pro Gln Leu Lys Asn Arg
 145 150 155 160
 Phe Gly Trp Glu His Phe Arg Ile Gly Ala Lys Gln Glu Glu Val Ser
 165 170 175
 Leu Val Ala Ser Ala Ser Val Tyr Gln Ala Val Gly Arg Ser Phe Ile
 180 185 190
 Glu Leu Tyr His Lys His Leu Glu Leu Ser Asp Leu Ala Cys Gly Met
 195 200 205
 Lys Cys Leu Ala Leu Ala Leu Asp Leu Ser Pro Asn Asn Ala His Ile
 210 215 220
 His Ala Asp Tyr Ala Lys Gly Leu Val Val Leu Gly Thr Arg Gln Gly
 225 230 235 240
 Lys Ser Leu Leu Ile Glu Arg Gly Met Glu His Phe Ser Lys Ala Ile
 245 250 255
 Phe Leu Ser Phe Ser Arg Asp Gly Asp Thr Leu Ala Tyr Gln Asn Tyr
 260 265 270
 Arg Tyr Ser Tyr Ala Leu Ala Ser Val Lys Leu Phe Asp Leu Thr Tyr
 275 280 285
 Lys Lys Glu His Phe Asp Gln Ala Met Asn Ile Leu Tyr Gln Thr Val
 290 295 300
 Gln Ala Phe Pro Asn Leu Ser Gly Leu Trp Met Val Trp Gly Glu Leu
 305 310 315 320
 Leu Ile Arg Ser Gly Trp Leu Asn Ser Asn Met Lys Tyr Ile Glu Val
 325 330 335
 Gly Leu Glu Lys Leu Ala Ser Leu Gln Lys Lys Thr Asn Asp Pro Ile
 340 345 350
 Ala Leu Ser Gly Leu Leu Ala Thr Gly Ile Ala Ile Leu Gly Leu Tyr
 355 360 365
 Leu Glu Glu Pro Asn Leu Phe Lys Asp Ser Arg His Arg Leu Ile Ser
 370 375 380

Ala Met Arg Met Phe Pro Gly Asn Ser Ala Leu Val His Leu Gly
 385 390 395 400
 Val Val Gln Leu Cys Ser Ala Leu Tyr Phe Asn Glu Asp Ser His Phe
 405 410 415
 Ala Ser Ala Ile Ser Cys Phe Gln Ser Cys Leu Glu Trp Asp Leu Asp
 420 425 430
 Ala Thr Gly Met Trp Gln Lys Leu Phe Asp Ala Tyr Phe Ser Trp Gly
 435 440 445
 Ile Lys Lys Lys Ser Ala Arg Leu Leu Arg Lys Ala Val Asp Val Ala
 450 455 460
 Ser Arg Leu Cys Ser Leu Arg Pro Glu Ala Phe Leu Phe Trp Ser Asp
 465 470 475 480
 Arg Gly Leu Ala Leu Lys Cys Leu Ala Glu Ala Thr Ile Asp Glu Ala
 485 490 495
 Tyr Lys Glu Ile Phe Leu Ser Glu Ser Leu Leu His Tyr Gln Arg Ala
 500 505 510
 Trp Asp Leu Ser Gly Arg Leu Glu Ile Leu Glu Leu Trp Gly Gln Ser
 515 520 525
 His Tyr Leu Leu Ala Glu Leu Gln Gln Ser Leu Phe His Tyr Asp Glu
 530 535 540
 Ala Tyr Thr Leu Leu Thr Lys Val Asp Leu Thr Leu Ser Ser Ser Arg
 545 550 555 560
 Val Lys Leu Ile Leu Ala Ala Val Leu Leu Gly Lys Gly Arg Leu Leu
 565 570 575
 Gln Asp Thr Asp Pro Ala Glu Glu Ala Arg Glu Ile Leu Glu Pro Leu
 580 585 590
 Val Glu Val Tyr Leu Glu Asp Glu Asn Phe Leu Leu Leu Leu Gly Lys
 595 600 605
 Val Tyr Leu Phe Leu Phe Trp Lys Asn Lys Asn Val Cys Leu Gly Lys
 610 615 620
 Leu Ala Arg Thr Tyr Leu Glu Lys Ala Thr Ser Leu Gly Cys Pro Glu
 625 630 635 640
 Ala Tyr Tyr Thr Leu Gly Lys Phe Tyr Ala Val Ile Lys Asp Val Asn
 645 650 655
 Lys Ala Trp Gly Met Val Ile Arg Ser Ala Gln Tyr Gly Val Arg Ile
 660 665 670
 Thr Glu Ala Lys Trp Leu Asn Asp Pro Tyr Leu Ala Asn Leu Arg Glu
 675 680 685
 Ile His Als Phe Arg Glu Val Val Glu Asn Gln Lys Gly Arg Leu Trp
 690 695 700
 Leu Gly Asn Lys Thr Glu Met Lys Arg Asn
 705 710

<210>301

<211>405

<212>FRT

<213>Chlamydia pneumoniae

<400>301

Ile Ser Ile Thr Ile Arg Glu Phe Leu Phe Phe Gly Phe Glu Cys Arg
 1 5 10 15
 Ala Lys Phe Tyr Asn Val Ile Met Ser Cys Phe Asn Leu Thr Ser Thr
 20 25 30
 Asn Glu Ser Leu Arg Pro Ile Ser Pro Lys Ala Ser Phe Pro Lys Gln
 35 40 45
 Gly Trp Gln Ser Tyr Phe Arg Ser Ala Leu Arg Lys His Arg Ser Asp
 50 55 60
 Thr Leu Ser Val Ser Val Cys Lys Val Asn Lys Tyr Asp Ala Asn Leu
 65 70 75 80
 Phe Val Arg Leu Thr Val Ile Ala Leu Ala Val Val Gly Val Leu Ile
 85 90 95
 Leu Phe Ser Ile Met Leu Ala Ser Ile Gln Gly Thr Leu Val Ile Thr
 100 105 110
 Ser Trp Pro Leu Val Thr Ala Ala Ile Leu Ile Pro Thr Ile Leu Leu
 115 120 125
 Thr Gly Gly Met Tyr Ile Leu His Arg Leu Gly Lys Lys Val Asp Val

130	Ile	Ser	Gly	Val	Cys	Ile	Pro	Pro	Phe	Ser	Arg	Arg	Cys	Trp	Val	Pro
145						150					155					160
	Ile	Ser	Ser	Ser	His	Thr	Leu	Glu	Lys	Phe	Asp	Glu	Lys	His	Val	Ser
					165					170						175
	Ala	Cys	Ser	Tyr	Leu	Asp	Ile	Ser	Thr	Leu	Ser	Ala	Asp	Gly	Ser	Gly
					180				185							190
	Ile	Ala	Ala	Val	Tyr	Gln	Cys	Pro	Pro	Leu	Leu	Phe	Arg	Ala	Phe	Pro
					195			200					205			
	Cys	Phe	Gly	Ile	Pro	Cys	Ala	Met	Pro	Phe	Val	Ala	Leu	Leu	Arg	Met
	210						215						220			
	Ile	Tyr	Asn	Leu	Ile	Arg	Phe	Leu	Val	Val	Pro	Phe	Tyr	Ile	Ile	Phe
225						230					235					240
	Arg	Met	Ile	Tyr	Glu	His	Phe	Phe	Cys	Lys	His	Leu	Pro	Glu	Asp	Asp
					245					250						255
	Arg	Phe	Ile	Tyr	Lys	Asp	Val	Ala	Arg	Glu	Met	Gly	Arg	Ser	Leu	Ala
					260				265							270
	Ala	Phe	Leu	Lys	Ala	Pro	Phe	Tyr	Ala	Ser	Ala	Cys	Met	Ile	Gly	Ala
					275			280					285			
	Phe	Tyr	Ser	Leu	Leu	Asp	Pro	Leu	Ala	Gly	Arg	Val	Leu	Met	Gly	Ser
	290						295					300				
	Val	Glu	Arg	Asp	Trp	Asn	Asp	Asn	Val	Ile	Leu	Ala	Arg	Ser	Val	Ser
305						310					315					320
	Leu	Ala	Asn	Glu	Ala	His	Ser	Leu	Phe	Arg	Phe	Glu	Gly	Gly	Gly	Gly
					325					330						335
	Arg	Lys	Gly	Leu	Gly	Gln	His	Ala	Phe	Tyr	Leu	Met	Leu	Cys	Cys	Gln
					340				345							350
	Pro	Gln	Ser	Val	Phe	Leu	Phe	Asp	Lys	Gly	Glu	Ile	Val	Ser	Gly	Ala
					355			360					365			
	His	Pro	Ser	Ile	Gln	Leu	Pro	Glu	Arg	Arg	Gly	Leu	Asp	Thr	Ser	Gly
					370			375				380				
	Arg	Tyr	Pro	His	Ile	Ser	Val	Ile	Pro	Asp	Ser	Gly	Asn	Asp	Ser	Ala
385						390					395					400
	Lys	Asn	Phe	Ile	Val											
					405											

<210>302

<211>400

<212>PRT

<213>Chlamydia pneumoniae

<400>302

Asn	Phe	Asn	Arg	Leu	Met	Lys	Lys	Gln	Arg	Ser	His	Tyr	Thr	Lys	Asn
1				5				10						15	
Asn	Leu	Leu	Leu	Leu	Leu	Ser	Ile	Leu	Val	Gly	Leu	Gly	Leu	Gly	Ser
			20					25					30		
Val	Gln	Ser	Pro	Trp	Ile	Val	Tyr	Ser	Ala	Glu	Cys	Ile	Ala	Asn	Thr
			35				40					45			
Phe	Leu	Lys	Phe	Leu	Arg	Leu	Leu	Ser	Ile	Pro	Leu	Val	Phe	Cys	Ala
	50					55					60				
Leu	Gly	Ser	Thr	Ile	Thr	Ser	Ile	Gln	Asn	Phe	Asn	Thr	Met	Val	Thr
	65				70					75				80	
Leu	Gly	Lys	Arg	Ile	Leu	Tyr	Tyr	Thr	Leu	Leu	Thr	Thr	Val	Ile	Ala
				85					90					95	
Ala	Ser	Ile	Gly	Leu	Leu	Leu	Phe	Phe	Leu	Leu	Arg	Pro	Gln	Met	Ile
			100					105					110		
Thr	Gln	Asp	Ala	Leu	Ala	Thr	Thr	Lys	Cys	Asn	Pro	Leu	Gly	Tyr	
		115				120					125				
Leu	Asp	Val	Leu	Ser	Asp	Thr	Leu	Pro	Glu	Asn	Ile	Phe	Lys	Pro	Phe
	130					135					140				
Leu	Gln	Gly	Asn	Val	Ile	Ser	Ala	Ala	Cys	Leu	Ala	Val	Leu	Leu	Gly
145					150					155					160
Thr	Ala	Ser	Leu	Phe	Leu	Gln	Glu	Lys	Glu	Lys	His	Phe	Val	Asn	Gln
				165					170						175
Phe	Phe	Asn	Ser	Phe	Phe	Ser	Ile	Phe	Leu	Asn	Leu	Ala	Arg	Gly	Gly
				180				185							190

Leu Lys Leu Leu Pro Asn Ala Met Leu Gly Phe Ser Val Leu Phe
 195 200 205
 Lys Glu Leu Lys Asp Gln Ser Asn Leu Thr Met Phe Ala Glu Tyr Leu
 210 215 220
 Leu Cys Val Ile Gly Ala Asn Leu Ala Gln Gly Phe Ile Val Leu Pro
 225 230 235 240
 Ile Leu Leu Lys Ile Asn Lys Val Ser Pro Leu Lys Val Ala Lys Ala
 245 250 255
 Met Ser Pro Ala Leu Val Thr Ala Phe Phe Ser Lys Ser Ser Ala Ala
 260 265 270
 Thr Leu Pro Leu Thr Met Glu Leu Ala Glu Asp Asp Leu Lys Ile Asn
 275 280 285
 Lys Asn Leu Ser Arg Phe Ser Phe Pro Leu Cys Ser Val Ile Asn Met
 290 295 300
 Asn Gly Cys Ala Ala Phe Ile Leu Ile Thr Val Leu Phe Val Ala Thr
 305 310 315 320
 Ser Asn Gly Met Ile Ile Ser Pro Leu Met Ser Leu Gly Trp Ile Phe
 325 330 335
 Ile Ala Thr Leu Ala Ala Ile Gly Asn Ala Gly Val Pro Met Gly Cys
 340 345 350
 Tyr Phe Leu Thr Leu Ser Leu Leu Thr Ser Met Asn Val Pro Leu Ser
 355 360 365
 Ile Leu Gly Leu Ile Leu Pro Phe Tyr Thr Val Ile Asp Met Ile Glu
 370 375 380
 Thr Ser Leu Asn Val Trp Ser Asp Cys Cys Val Val Ser Leu Ala Asn
 385 390 395 400

<210>303

<211>234

<212>PRT

<213>Chlamydia pneumoniae

<400>303

Sar Trp Gly Ile Ile Ile Phe Ser Thr Cys Ala Ser Leu Asp Ile Leu
 1 5 10 15
 Gly Thr Thr Gln Leu Gln Asp Gly Ala Gly Ala Ser Ser Ile Gly Ile
 20 25 30
 Thr Phe Ile Tyr Leu Pro Glu Leu Phe Thr Arg Leu Pro Gly Gly Ile
 35 40 45
 Tyr Leu Thr Thr Leu Phe Ser Ser Ile Phe Phe Leu Ala Phe Ser Met
 50 55 60
 Ala Ala Leu Ser Ser Met Ile Ser Met Leu Phe Leu Leu Ser Gln Thr
 65 70 75 80
 Leu Ala Glu Phe Gly Ile Lys Pro Tyr Ile Ser Glu Thr Leu Ala Thr
 85 90 95
 Ile Ile Ala Phe Val Leu Gly Ile Pro Ser Ala Leu Ser Leu Thr Phe
 100 105 110
 Phe Ser Asn Gln Asp Thr Val Trp Gly Val Ala Leu Ile Val Asn Gly
 115 120 125
 Leu Ile Phe Ile Tyr Ala Ala Leu Val Tyr Gly Phe Pro Lys Leu Lys
 130 135 140
 Lys Glu Val Ile Asn Ala Ala Pro Gly Asp Leu Arg Leu Asn Lys Ala
 145 150 155 160
 Phe Asp Tyr Ile Ile Lys Tyr Leu Leu Leu Ile Glu Gly Ile Leu Leu
 165 170 175
 Leu Gly Trp Tyr Phe Tyr Glu Gly Leu Phe Pro Glu Asn Gly Gln Trp
 180 185 190
 Trp Asn Pro Ile Ser Leu Tyr Ser Leu Gly Ser Leu Val Leu Gln Trp
 195 200 205
 Ser Leu Gly Leu Ile Ile Leu Trp Lys Phe Asn Lys Gln Leu Tyr Leu
 210 215 220
 Arg Phe Ser Arg Tyr Asn His Glu Ile Leu
 225 230

<210>304

<211>179

<212>PRT

<213>Chlamydia pneumoniae

<400>304

Glu	Lys	His	Met	Ser	Ala	Pro	Ile	Pro	Thr	Pro	Gln	Glu	Leu	Ser	Asp
1				5				10						15	
Gln	Ile	Thr	Cys	Leu	Asn	Val	Gln	Tyr	Gln	Gln	Val	Ser	Glu	Leu	Ala
			20				25						30		
Arg	Glu	Asn	Lys	Gly	Asp	Ile	Glu	Gly	Leu	Lys	Thr	Leu	Thr	Ala	Ala
			35				40					45			
Leu	Thr	Ala	Asp	Ala	Gly	Ile	Gln	Pro	Ser	Ala	Asp	Glu	Ile	Tyr	Ser
	50					55					60				
Leu	Gln	Thr	Ala	Ala	Ala	Leu	Ile	Leu	Ser	Ala	Ser	Glu	Lys	Pro	Gly
65					70				75					80	
Ser	Gly	Pro	Ser	Gly	Ser	Thr	Glu	Gly	Ser	Val	Thr	Val	Gln	Ser	Pro
			85					90						95	
Cys	Lys	Phe	Lys	Lys	Val	Leu	Ala	Val	Val	Leu	Thr	Ile	Ile	Ala	Leu
			100					105					110		
Ile	Ala	Ile	Ala	Val	Leu	Ile	Ala	Cys	Ile	Ile	Ala	Ala	Cys	Gly	Gly
	115						120					125			
Phe	Pro	Leu	Leu	Leu	Ser	Ala	Leu	Asn	Leu	Tyr	Thr	Ile	Gly	Ala	Cys
	130					135					140				
Val	Ser	Leu	Pro	Ile	Ile	Ala	Ser	Thr	Ser	Val	Ala	Leu	Ile	Cys	Leu
145					150					155				160	
Cys	Thr	Phe	Val	Ala	Asn	Ser	Leu	Ile	Lys	Pro	Val	Ile	Thr	Val	Arg
			165						170					175	
Thr	Thr	Arg													

<210>305

<211>312

<212>PRT

<213>Chlamydia pneumoniae

<400>305

Val	Lys	Asn	Thr	Lys	Asn	Ser	Asp	Phe	Met	Thr	Ser	Pro	Ile	Pro	Phe
1				5				10						15	
Gln	Ser	Ser	Gly	Asp	Ala	Ser	Phe	Leu	Ala	Glu	Gln	Pro	Gln	Gln	Leu
			20				25						30		
Pro	Ser	Thr	Ser	Glu	Ser	Gln	Leu	Val	Thr	Gln	Leu	Leu	Thr	Met	Met
		35				40						45			
Lys	His	Thr	Gln	Ala	Leu	Ser	Glu	Thr	Val	Leu	Gln	Gln	Gln	Arg	Asp
	50					55				60					
Arg	Leu	Asn	Thr	Ala	Ser	Ile	Ile	Leu	Gln	Val	Gly	Gly	Ala	Pro	Thr
65					70				75					80	
Gly	Gly	Ala	Gly	Ala	Pro	Phe	Gln	Pro	Gly	Pro	Ala	Asp	Asp	His	His
			85					90						95	
His	Pro	Ile	Pro	Pro	Pro	Val	Val	Pro	Ala	Gln	Ile	Glu	Thr	Glu	Ile
		100						105					110		
Thr	Thr	Ile	Arg	Ser	Glu	Leu	Gln	Leu	Met	Arg	Ser	Thr	Leu	Gln	Gln
	115						120					125			
Ser	Thr	Lys	Gly	Ala	Arg	Thr	Gly	Val	Leu	Val	Val	Thr	Ala	Ile	Leu
	130					135					140				
Met	Thr	Ile	Ser	Leu	Leu	Ala	Ile	Ile	Ile	Ile	Ile	Leu	Ala	Val	Leu
145					150					155				160	
Gly	Phe	Thr	Gly	Val	Leu	Pro	Gln	Val	Ala	Leu	Leu	Met	Gln	Gly	Glu
			165					170						175	
Thr	Asn	Leu	Ile	Trp	Ala	Met	Val	Ser	Gly	Ser	Ile	Ile	Cys	Phe	Ile
	180						185						190		
Ala	Leu	Ile	Gly	Thr	Leu	Gly	Leu	Ile	Leu	Thr	Asn	Lys	Asn	Thr	Pro
	195					200						205			
Leu	Pro	Ala	Ser												

210

<210>306

<211>907

<212>PRT

<213>Chlamydia pneumoniae

<400>306

Val	Trp	Ser	Met	Gln	Arg	Val	Leu	Arg	Leu	Leu	Phe	Asn	Leu	His	His
1				5					10					15	
Gly	Glu	Glu	Lys	Arg	Ala	Phe	Leu	Phe	Phe	Leu	Leu	Gly	Leu	Val	Trp
			20					25					30		
Gly	Ile	Gly	Cys	Tyr	Gly	Thr	Leu	Ser	Leu	Ala	Glu	Gly	Leu	Phe	Ile
		35					40					45			
Glu	Lys	Leu	Gly	Ser	Ala	Glu	Leu	Pro	Lys	Ile	Tyr	Leu	Gly	Ser	Ser
		50				55					60				
Leu	Ile	Leu	Cys	Val	Leu	Ser	Ser	Leu	Ile	Leu	Tyr	Asn	Leu	Phe	Lys
				70							75				80
Lys	His	Ile	Ser	Ala	Thr	Ala	Leu	Phe	Leu	Ile	Pro	Val	Ser	Leu	Ser
				85						90				95	
Ile	Leu	Cys	Asn	Phe	Tyr	Leu	Ile	Leu	Ser	Ser	Ile	Phe	Ala	Ile	Asp
			100					105					110		
Pro	Pro	Arg	Ser	Pro	Leu	Phe	Phe	Tyr	Arg	Ile	Val	Ile	Trp	Ser	Leu
		115					120					125			
Thr	Ile	Leu	Ser	Tyr	Thr	Ser	Phe	Trp	Gly	Phe	Val	Asp	Gln	Phe	Phe
		130				135					140				
Asn	Leu	Gln	Asp	Gly	Lys	Arg	His	Phe	Cys	Ile	Phe	Asn	Ala	Ile	Ile
145				150					155					160	
Phe	Leu	Gly	Asp	Ala	Ile	Gly	Ser	Gly	Ile	Ile	Ala	Ser	Leu	Val	His
			165					170						175	
Thr	Ile	Gly	Ile	Gln	Gly	Ile	Leu	Ile	Leu	Phe	Thr	Ala	Ala	Leu	Val
			180					185					190		
Leu	Thr	Phe	Pro	Ile	Val	Phe	Tyr	Val	Ser	Lys	Ser	Leu	Lys	Ser	Leu
		195					200					205			
Ser	Asp	Asp	His	Asp	Leu	Phe	Ile	Asp	Thr	Gly	His	Pro	Pro	Pro	Leu
	210				215						220				
Ser	Lys	Ala	Leu	Lys	Leu	Cys	Phe	Tyr	Asp	Lys	Tyr	Thr	Phe	Tyr	Leu
225				230						235				240	
Leu	Cys	Phe	Tyr	Phe	Leu	Met	Gln	Leu	Leu	Ala	Ile	Ala	Thr	Glu	Phe
			245					250						255	
Asn	Tyr	Leu	Lys	Ile	Phe	Glu	Ile	Gln	Phe	Ala	Ser	Lys	Glu	Glu	Phe
		260						265					270		
Glu	Leu	Val	Ala	His	Ile	Gly	Lys	Cys	Ser	Leu	Trp	Ile	Ser	Leu	Gly
		275					280					285			
Asn	Met	Cys	Phe	Ala	Leu	Phe	Ala	Tyr	Ser	Arg	Ile	Val	Lys	Arg	Leu
290				295							300				
Gly	Val	Asn	Asn	Ile	Ile	Leu	Phe	Ala	Pro	Leu	Cys	Phe	Leu	Ser	Leu
305				310						315				320	
Phe	Leu	Phe	Trp	Thr	Phe	Lys	Thr	Thr	Leu	Ser	Ile	Ala	Val	Leu	Ala
			325					330						335	
Met	Val	Val	Arg	Glu	Gly	Val	Thr	Tyr	Ala	Leu	Asp	Asp	Asn	Asn	Leu
			340					345					350		
Gln	Leu	Leu	Ile	Tyr	Gly	Val	Pro	Asn	Lys	Ile	Arg	Asn	Gln	Ile	Arg
		355					360					365			
Ile	Val	Val	Glu	Ser	Phe	Ile	Glu	Pro	Ile	Gly	Met	Leu	Val	Trp	Ser
		370				375					380				
Leu	Val	Cys	Phe	Leu	Ser	Ser	Gln	Gln	Tyr	Val	Phe	Cys	Leu	Ile	Ile
385				390						395				400	
Ser	Leu	Ile	Ala	Thr	Ile	Leu	Val	Cys	Leu	Val	Arg	Ser	Tyr	Tyr	Ala
			405					410					415		
Lys	Ala	Ile	Leu	Lys	Asn	Leu	Ser	Ala	Gln	Ala	Leu	Gln	Leu	Thr	Arg
			420					425					430		
Ser	Met	Gln	Asp	Trp	Ile	Lys	Ser	Met	Thr	Val	Lys	Gln	Lys	Arg	Gln
		435					440					445			
Val	Glu	Leu	Phe	Leu	Leu	Ala	His	Leu	Lys	His	Pro	Ser	Glu	Arg	His
		450				455					460				
Gln	Thr	Phe	Ala	Phe	Gln	His	Leu	Leu	Asn	Leu	Ala	Ser	Arg	Ser	Val
465				470						475				480	
Leu	Pro	Ser	Leu	Leu	Ala	His	Met	Asn	Lys	Leu	Ser	Leu	Pro	Asn	Lys
			485					490					495		
Leu	Lys	Thr	Ile	Glu	Met	Val	Lys	Ser	Ser	Leu	Trp	Ala	Lys	Asp	Phe
			500					505					510		

Leu Thr Leu Glu Lys Leu Lys Arg Trp Thr Ser Ile Phe Pro His Pro
 515 520 525
 Ala Ile Ala Ser Ala Ile His Leu Tyr Phe Ala Glu His Asp Leu Leu
 530 535 540
 His Ile Thr His Ile Ala Glu Asp Leu Tyr Asp Thr Val Gly Asp Arg
 545 550 555 560
 Leu Leu Ala Ala Ile Leu Thr Val Arg Arg Gln Glu Ala Tyr Gly Pro
 565 570 575
 Tyr Arg Asp Leu Ala Asp Lys Arg Leu Lys Glu Leu Leu Asn Ser Asp
 580 585 590
 Gln Pro Glu Asp Ile Val Met Gly Leu Thr Ile Leu Lys Leu Glu Lys
 595 600 605
 Asn Pro Gln Asn Phe Pro Ile Leu Leu Asp Phe Leu Asn Thr Lys Asn
 610 615 620
 Glu Asp Ile Leu Ile Val Thr Cys Lys Ala Leu His Thr Ser Val Arg
 625 630 635 640
 Ala Asn His Lys Pro Tyr Cys Pro Glu Leu Leu Lys Arg Leu Arg Gln
 645 650 655
 Cys Ser His Asn Asp Glu Ala Ser Gln Tyr Leu Leu Lys Thr Ile Ser
 660 665 670
 Ile Ala Leu Asp Ile Ser Phe Val Lys Asp Leu Leu Met Thr Thr Ser
 675 680 685
 Gln Leu Lys Asn Thr Ser Arg Lys Tyr Ala Glu Ala Met Ile Gly Glu
 690 695 700
 Leu Asp Lys Glu Val Ala Pro Ala Phe Leu Gln Val Leu Thr Asp Glu
 705 710 715 720
 Gly Thr His Asn Arg Cys Arg Ile Leu Ala Ala Lys Ala Leu Cys Lys
 725 730 735
 Ile Asp Asn Trp Leu Leu Lys Lys His Ala Tyr Lys Ile Val Lys Ser
 740 745 750
 Lys Ala Ser Lys Ala Leu Phe Tyr Ser Tyr His Gly His Tyr Ile Gln
 755 760 765
 Lys Lys Tyr Pro Thr Tyr Asn Leu Ser Leu Leu Ala Asn Thr Leu Asn
 770 775 780
 Ser Asn Tyr Tyr Ala Glu Val Asn Phe Met Leu Ser Leu Leu Gly Ile
 785 790 795 800
 Leu Gly Ser Met Glu His Ser Gly Val Leu Ile Arg Ala Leu Thr Ser
 805 810 815
 Lys Asn Gln Lys Ile Lys Ala Gln Ala Leu Glu Ser Leu Glu Lys Asn
 820 825 830
 Cys Asp Ser His Leu Phe Ser Leu Leu Glu Pro Phe Val Asn Gln Pro
 835 840 845
 Gly Met Cys Tyr Ser Glu Lys Tyr Tyr Phe Lys Cys Gly Val Ile Pro
 850 855 860
 Leu Thr Leu Lys Glu Leu Leu Asn Met Met Glu Asn Ser Pro Ser Ser
 865 870 875 880
 Leu Asn Lys Leu Thr Ala Gln Gln Leu Lys Glu Glu Leu Ser Tyr Cys
 885 890 895
 Asp Pro Asp Phe Pro Ile Cys Lys Tyr Asn Leu
 900 905

<210>307

<211>142

<212>PRT

<213>Chlamydia pneumoniae

<400>307

Ile Arg Asn Phe Phe Met Asn Leu Ile Asp Arg Ala Phe Leu Leu Lys
 1 5 10 15
 Lys Thr Ile Ile Phe Gln Ser Leu Asp Met Asp Leu Leu Leu Thr Ile
 20 25 30
 Ala Asp Lys Thr Glu Thr Ile Ile Phe Lys Pro Gly Ser Asn Val Phe
 35 40 45
 Ser Ile Gly Gln Pro Gly Phe Ser Phe Tyr Ile Ile Val Glu Gly Tyr
 50 55 60
 Ile Thr Ile Ser Lys Glu Lys Leu Glu Ser Pro Leu Asn Leu Lys Pro

65 70 75 80
 Leu Asp Cys Phe Gly Glu Glu Ser Leu Phe Asn Asn Lys Pro Arg Glu
 85 90 95
 Tyr Asn Ala Ser Ala Asn Thr Gln Val Arg Met Leu Val Leu Ser Lys
 100 105 110
 Gly Gln Ile Leu Asn Ile Val Glu Glu Cys Pro Ser Val Ala Leu Ser
 115 120 125
 Phe Leu Glu Leu Tyr Ala Lys Gln Ile Lys Phe Arg Glu Pro
 130 135 140
 <210>306
 <211>79
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>308
 Met Ser Leu Glu Asp Asp Val Ile Ala Ile Ile Val Glu Gln Leu Gly
 1 5 10 15
 Val Asp Pro Lys Glu Val Asn Glu Asn Ser Ser Phe Ile Glu Asp Leu
 20 25 30
 Asn Ala Asp Ser Leu Asp Leu Thr Glu Leu Ile Met Thr Leu Gln Glu
 35 40 45
 Lys Phe Ala Phe Glu Ile Ser Glu Glu Asp Ala Glu Lys Leu Arg Thr
 50 55 60
 Val Gly Asp Val Phe Thr Tyr Ile Lys Lys Arg Gln Ala Glu Gln
 65 70 75
 <210>309
 <211>251
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>309
 Met Ile Cys Met Asp Ile Thr Leu Val Gly Lys Lys Val Ile Val Thr
 1 5 10 15
 Gly Gly Ser Arg Gly Ile Gly Leu Gly Ile Val Lys Leu Phe Leu Glu
 20 25 30
 Asn Gly Ala Asp Val Glu Ile Trp Gly Leu Asn Glu Glu Arg Gly Gln
 35 40 45
 Ala Val Ile Glu Ser Leu Thr Gly Leu Gly Gly Glu Val Ser Phe Ala
 50 55 60
 Arg Val Asp Val Ser His Asn Gly Gly Val Lys Asp Cys Val Gln Lys
 65 70 75 80
 Phe Leu Asp Lys His Asn Lys Ile Asp Ile Leu Val Asn Asn Ala Gly
 85 90 95
 Ile Thr Arg Asp Asn Leu Leu Met Arg Met Ser Glu Asp Asp Trp Gln
 100 105 110
 Ser Val Ile Ser Thr Asn Leu Thr Ser Leu Tyr Tyr Thr Cys Ser Ser
 115 120 125
 Val Ile Arg His Met Ile Lys Ala Arg Ser Gly Ser Ile Ile Asn Val
 130 135 140
 Ala Ser Ile Val Ala Lys Ile Gly Ser Ala Gly Gln Thr Asn Tyr Ala
 145 150 155 160
 Ala Ala Lys Ala Gly Ile Ile Ala Phe Thr Lys Ser Leu Ala Lys Glu
 165 170 175
 Val Ala Ala Arg Asn Ile Arg Val Asn Cys Leu Ala Pro Gly Phe Ile
 180 185 190
 Glu Thr Asp Met Thr Ser Val Leu Asn Asp Asn Leu Lys Ala Glu Trp
 195 200 205
 Leu Lys Ser Ile Pro Leu Gly Arg Ala Gly Thr Pro Glu Asp Val Ala
 210 215 220
 Arg Val Ala Leu Phe Leu Ala Ser Gln Leu Ser Ser Tyr Met Thr Ala
 225 230 235 240
 Gln Thr Leu Val Val Asp Gly Gly Leu Thr Tyr
 245 250
 <210>310
 <211>308
 <212>PRT

<213>Chlamydia pneumoniae

<400>310

Met Lys Lys Arg Tyr Ala Phe Leu Phe Pro Gly Gln Gly Ser Gln Tyr
1 5 10 15
Val Gly Met Gly Gln Asp Leu Tyr Met Glu Tyr Pro Glu Val Arg Glu
20 25 30
Leu Phe Asp Phe Ala Asn Glu Arg Leu Gly Phe Ser Leu Thr Ser Ile
35 40 45
Met Phe Glu Gly Pro Glu Asp Leu Leu Met Glu Thr Val His Ser Gln
50 55 60
Leu Ala Ile Tyr Leu His Ser Met Ala Val Val Lys Val Leu Ser Gln
65 70 75 80
Arg Ser Ser Ile Gln Pro Ser Leu Val Ser Gly Leu Ser Leu Gly Glu
85 90 95
Tyr Thr Ala Leu Val Ala Ser Asp Arg Ile Ser Val Leu Asp Gly Leu
100 105 110
Glu Leu Val Arg Lys Arg Gly Gln Leu Met Asn Glu Ala Cys Asn Gln
115 120 125
Ser Pro Gly Ala Met Ala Ala Leu Leu Gly Leu Pro Ser Glu Val Ile
130 135 140
Glu Glu Asn Ile Thr Ser Leu Gly Gln Gly Ile Trp Ile Ala Asn Tyr
145 150 155 160
Asn Ala Pro Lys Gln Leu Val Val Ala Gly Ile Ala Glu Lys Val Asp
165 170 175
Gln Ala Ile Glu Leu Phe Arg Asp Leu Gly Cys Lys Lys Ala Val Arg
180 185 190
Leu Lys Val Ser Gly Ala Phe His Thr Pro Leu Met Gln Val Ala Gln
195 200 205
Asp Gly Leu Ala Pro Asp Ile Tyr Ala Leu Cys Met Lys Asp Ser Ser
210 215 220
Leu Pro Leu Val Ser His Val Val Gly Lys Ser Leu Val Asn Thr Glu
225 230 235 240
Glu Met Arg Glu Cys Leu Ala Arg Gln Met Thr Ser Pro Thr Leu Trp
245 250 255
Tyr Gln Ser Cys Tyr His Ile Glu Ser Glu Val Asp Glu Phe Leu Glu
260 265 270
Leu Gly Pro Gly Lys Val Leu Ala Gly Leu Asn Arg Ser Ile Gly Ile
275 280 285
Ser Lys Pro Ile Thr Ser Leu Gly Thr Phe Ala Gln Ile Glu Lys Phe
290 295 300
Leu Ser Glu Val

305

<210>311

<211>116

<212>PRT

<213>Chlamydia pneumoniae

<400>311

Leu Tyr His Phe Leu Asp Ser Ser Thr Arg Leu Tyr Phe Pro Ile Lys
1 5 10 15
Arg Ser Leu Ala Gln Ala His Leu Gly Ile Glu Asp Val Pro Thr Phe
20 25 30
Asp Cys Gln Ala Ala Cys Thr Gly Tyr Leu Tyr Gly Leu Ser Val Ala
35 40 45
Lys Ala Tyr Val Glu Ser Gly Thr Tyr Asn His Val Leu Leu Ile Ala
50 55 60
Ala Asp Lys Leu Ser Ser Phe Val Asp Tyr Thr Asp Arg Asn Thr Cys
65 70 75 80
Val Leu Phe Gly Asp Gly Gly Ala Ala Cys Val Ile Gly Glu Ser Arg
85 90 95
Pro Gly Ser Leu Glu Ile Asn Arg Leu Ser Leu Gly Ala Asp Gly Lys
100 105 110
Leu Gly Glu Tyr
115

<210>312

<211>105

<212>PRT

<213>Chlamydia pneumoniae

<400>312

Met Trp Phe Ser Val Asn Lys Asn Lys Lys Ala Ala Ile Trp Ala Thr
 1 5 10 15
 Gly Ser Tyr Leu Pro Glu Lys Val Leu Ser Asn Ala Asp Leu Glu Lys
 20 25 30
 Met Val Asp Thr Ser Asp Glu Trp Ile Val Thr Arg Thr Gly Ile Lys
 35 40 45
 Glu Arg Arg Ile Ala Gly Pro Cln Glu Tyr Thr Ser Leu Met Gly Ala
 50 55 60
 Ile Ala Ala Glu Lys Ala Ile Ala Asn Ala Gly Leu Ser Lys Asp Glu
 65 70 75 80
 Ile Asp Cys Ile Ile Phe Ser Thr Ala Ala Pro Asp Tyr Ile Phe Pro
 85 90 95
 Ser Ser Gly Val Leu Leu Lys His Ile
 100 105

<210>313

<211>230

<212>PRT

<213>Chlamydia pneumoniae

<400>313

Arg Lys Lys Leu Val Tyr Tyr Ser Glu Ser Leu Tyr Ser Asn Leu Asn
 1 5 10 15
 Leu Gly Pro Arg Pro Glu Cys Lys Asn Lys Ile His Ile Thr Met Thr
 20 25 30
 Arg Tyr Pro Asp Tyr Leu Ser Lys Leu Ile Phe Phe Leu Arg Lys Leu
 35 40 45
 Pro Gly Ile Gly Phe Lys Thr Ala Glu Lys Leu Ala Phe Glu Leu Ile
 50 55 60
 Ser Trp Asp Ser Glu Gln Leu Lys Ile Leu Gly Asn Ala Phe His Asn
 65 70 75 80
 Val Ala Ser Glu Arg Ser His Cys Pro Leu Cys Phe Thr Leu Lys Glu
 85 90 95
 Ser Lys Glu Ala Asp Cys His Phe Cys Arg Glu Glu Arg Asp Asn Gln
 100 105 110
 Ser Leu Cys Ile Val Ala Ser Pro Lys Asp Val Phe Phe Leu Glu Arg
 115 120 125
 Ser Lys Val Phe Lys Gly Arg Tyr His Val Leu Gly Ser Leu Leu Ser
 130 135 140
 Pro Ile Thr Gly Lys His Ile Glu Asn Glu Arg Leu Ser Ile Leu Lys
 145 150 155 160
 Ser Arg Ile Glu Thr Leu Cys Pro Lys Glu Ile Ile Leu Ala Ile Asp
 165 170 175
 Ala Thr Leu Glu Gly Asp Ala Thr Ala Leu Phe Leu Lys Gln Glu Leu
 180 185 190
 Gln His Phe Ser Val Asn Ile Ser Arg Leu Ala Leu Gly Leu Pro Ile
 195 200 205
 Gly Leu Ser Phe Asp Tyr Val Asp Ser Gly Thr Leu Ala Arg Ala Phe
 210 215 220
 Ser Gly Arg His Ser Tyr
 225 230

<210>314

<211>795

<212>PRT

<213>Chlamydia pneumoniae

<400>314

Gly Arg Leu Leu Gly Met Leu Ile Met Arg Asn Lys Val Ile Leu Gln
 1 5 10 15
 Ile Ser Ile Leu Ala Leu Ile Gln Thr Pro Leu Thr Leu Phe Ser Thr
 20 25 30
 Glu Lys Val Lys Glu Gly His Val Val Val Asp Ser Ile Thr Ile Ile
 35 40 45

Thr	Glu	Gly	Glu	Ala	Ser	Asn	Lys	His	Pro	Leu	Lys	Leu	Lys	50	55	60		
Thr	Arg	Ser	Gly	Ala	Leu	Phe	Ser	Gln	Leu	Asp	Phe	Asp	Glu	Asp	Leu	65	70	75
Arg	Ile	Leu	Ala	Lys	Glu	Tyr	Asp	Ser	Val	Glu	Pro	Lys	Val	Glu	Phe	85	90	95
Ser	Glu	Gly	Lys	Thr	Asn	Ile	Ala	Leu	His	Leu	Ile	Ala	Lys	Pro	Ser	100	105	110
Ile	Arg	Asn	Ile	His	Ile	Ser	Gly	Asn	Gln	Val	Val	Pro	Glu	His	Lys	115	120	125
Ile	Leu	Lys	Thr	Leu	Gln	Ile	Tyr	Arg	Asn	Asp	Leu	Phe	Glu	Arg	Glu	130	135	140
Lys	Phe	Leu	Lys	Gly	Leu	Asp	Asp	Leu	Arg	Thr	Tyr	Tyr	Leu	Lys	Arg	145	150	155
Gly	Tyr	Phe	Ala	Ser	Ser	Val	Asp	Tyr	Ser	Leu	Glu	His	Asn	Gln	Glu	165	170	175
Lys	Gly	His	Ile	Asp	Val	Leu	Ile	Lys	Ile	Asn	Glu	Gly	Pro	Cys	Gly	180	185	190
Lys	Ile	Lys	Gln	Leu	Thr	Phe	Ser	Gly	Ile	Ser	Arg	Ser	Glu	Lys	Ser	195	200	205
Asp	Ile	Gln	Glu	Phe	Ile	Gln	Thr	Lys	Gln	His	Ser	Thr	Thr	Thr	Ser	210	215	220
Trp	Phe	Thr	Gly	Ala	Gly	Leu	Tyr	His	Pro	Asp	Ile	Val	Glu	Gln	Asp	225	230	235
Ser	Leu	Ala	Ile	Thr	Asn	Tyr	Leu	His	Asn	Asn	Gly	Tyr	Ala	Asp	Ala	245	250	255
Ile	Val	Asn	Ser	His	Tyr	Asp	Leu	Asp	Asp	Lys	Gly	Asn	Ile	Leu	Leu	260	265	270
Tyr	Met	Asp	Ile	Asp	Arg	Gly	Ser	Arg	Tyr	Thr	Leu	Gly	His	Val	His	275	280	285
Ile	Gln	Gly	Phe	Glu	Val	Leu	Pro	Lys	Arg	Leu	Ile	Glu	Lys	Gln	Ser	290	295	300
Gln	Val	Gly	Pro	Asn	Asp	Leu	Tyr	Cys	Pro	Asp	Lys	Ile	Trp	Asp	Gly	305	310	315
Ala	His	Lys	Ile	Lys	Gln	Thr	Tyr	Ala	Lys	Tyr	Gly	Tyr	Ile	Asn	Thr	325	330	335
Asn	Val	Asp	Val	Leu	Phe	Ile	Pro	His	Ala	Thr	Arg	Pro	Ile	Tyr	Asp	340	345	350
Val	Thr	Tyr	Glu	Val	Ser	Glu	Gly	Ser	Pro	Tyr	Lys	Val	Gly	Leu	Ile	355	360	365
Lys	Ile	Thr	Gly	Asn	Thr	His	Thr	Lys	Ser	Asp	Val	Ile	Leu	His	Glu	370	375	380
Thr	Ser	Leu	Phe	Pro	Gly	Asp	Thr	Phe	Asn	Arg	Leu	Lys	Leu	Glu	Asp	385	390	395
Thr	Glu	Gln	Arg	Leu	Arg	Asn	Thr	Gly	Tyr	Phe	Gln	Ser	Val	Ser	Val	405	410	415
Tyr	Thr	Val	Arg	Ser	Gln	Leu	Asp	Pro	Met	Gly	Asn	Ala	Asp	Gln	Tyr	420	425	430
Arg	Asp	Ile	Phe	Val	Glu	Val	Lys	Glu	Thr	Thr	Thr	Gly	Asn	Leu	Gly	435	440	445
Leu	Phe	Leu	Gly	Phe	Ser	Ser	Leu	Asp	Asn	Leu	Phe	Gly	Gly	Ile	Glu	450	455	460
Leu	Ser	Glu	Ser	Asn	Phe	Asp	Leu	Phe	Gly	Ala	Arg	Asn	Ile	Phe	Ser	465	470	475
Lys	Gly	Phe	Arg	Cys	Leu	Arg	Gly	Gly	Gly	Glu	His	Leu	Phe	Leu	Lys	485	490	495
Ala	Asn	Phe	Gly	Asp	Lys	Val	Thr	Asp	Tyr	Thr	Leu	Lys	Trp	Thr	Lys	500	505	510
Pro	His	Phe	Leu	Asn	Thr	Pro	Trp	Ile	Leu	Gly	Ile	Glu	Leu	Asp	Lys	515	520	525
Ser	Ile	Asn	Arg	Ala	Leu	Ser	Lys	Asp	Tyr	Ala	Val	Gln	Thr	Tyr	Gly	530	535	540
Gly	Asn	Val	Ser	Thr	Thr	Tyr	Ile	Leu	Asn	Glu	His	Leu	Lys	Tyr	Gly	545	550	555
																		560

Leu Phe Tyr Arg Gly Ser Gln Thr Ser Leu His Glu Lys Arg Lys Phe
 565 570 575
 Leu Leu Gly Pro Asn Ile Asp Ser Asn Lys Gly Phe Val Ser Ala Ala
 580 585 590
 Gly Val Asn Leu Asn Tyr Asp Ser Val Asp Ser Pro Arg Thr Pro Thr
 595 600 605
 Thr Gly Ile Arg Gly Gly Val Thr Phe Glu Val Ser Gly Leu Gly Gly
 610 615 620
 Thr Tyr His Phe Thr Lys Leu Ser Leu Asn Ser Ser Ile Tyr Arg Lys
 625 630 635 640
 Leu Thr Arg Lys Gly Ile Leu Lys Ile Lys Gly Glu Ala Gln Phe Ile
 645 650 655
 Lys Pro Tyr Ser Asn Thr Thr Ala Glu Gly Val Pro Val Ser Glu Arg
 660 665 670
 Phe Phe Leu Gly Gly Glu Thr Thr Val Arg Gly Tyr Lys Ser Phe Ile
 675 680 685
 Ile Gly Pro Lys Tyr Ser Ala Thr Glu Pro Gln Gly Gly Leu Ser Ser
 690 695 700
 Leu Leu Ile Ser Glu Glu Phe Gln Tyr Pro Leu Ile Arg Gln Pro Asn
 705 710 715 720
 Ile Ser Ala Phe Val Phe Leu Asp Ser Gly Phe Val Gly Leu Gln Glu
 725 730 735
 Tyr Lys Ile Ser Leu Lys Asp Leu Arg Ser Ser Ala Gly Phe Gly Leu
 740 745 750
 Arg Phe Asp Val Met Asn Asn Val Pro Val Met Leu Gly Phe Gly Trp
 755 760 765
 Pro Phe Arg Pro Thr Glu Thr Leu Asn Gly Glu Lys Ile Asp Val Ser
 770 775 780
 Gln Arg Phe Phe Phe Ala Leu Gly Gly Met Phe
 785 790 795

<210>315

<211>158

<212>PRT

<213>Chlamydia pneumoniae

<400>315

Asp Gln Gln Ala Gln Leu Asn Ala Asn Leu Gly Tyr Val Asn Leu Lys
 1 5 10 15
 Arg Cys Leu Glu Glu Ser Asp Leu Gly Lys Lys Glu Thr Glu Glu Leu
 20 25 30
 Glu Ala Xaa Lys Gln Gln Phe Val Lys Asn Ala Glu Lys Ile Glu Glu
 35 40 45
 Glu Leu Thr Ser Ile Tyr Asn Lys Leu Gln Asp Glu Asp Tyr Met Glu
 50 55 60
 Ser Leu Ser Asp Ser Ala Ser Glu Glu Leu Arg Lys Lys Phe Glu Asp
 65 70 75 80
 Leu Ser Gly Glu Tyr Asn Ala Tyr Gln Ser Gln Tyr Tyr Gln Ser Ile
 85 90 95
 Asn Gln Ser Asn Val Lys Arg Ile Gln Lys Leu Ile Gln Glu Val Lys
 100 105 110
 Ile Ala Ala Glu Ser Val Arg Ser Lys Glu Lys Leu Glu Ala Ile Leu
 115 120 125
 Asn Glu Glu Ala Val Leu Ala Ile Ala Pro Gly Thr Asp Lys Thr Thr
 130 135 140
 Glu Ile Ile Ala Ile Leu Asn Glu Ser Phe Lys Lys Gln Asn
 145 150 155

<210>316

<211>367

<212>PRT

<213>Chlamydia pneumoniae

<400>316

Ser Lys Phe Lys Glu Phe Ser Met Ser Glu Ala Pro Val Tyr Thr Leu
 1 5 10 15
 Lys Gln Leu Ala Glu Leu Leu Gln Val Glu Val Gln Gly Asn Ile Glu
 20 25 30

Thr	Pro	Ile	Ser	Val	Glu	Asp	Ile	Ser	Gln	Ala	Pro	His	His	35	40	45		
Ile	Ala	Phe	Leu	Asp	Asn	Glu	Lys	Tyr	Ser	Ser	Phe	Leu	Lys	Asn	Thr	50	55	60
Lys	Ala	Gly	Ala	Ile	Ile	Leu	Ser	Arg	Ser	Gln	Ala	Met	Gln	His	Ala	65	70	75
His	Leu	Lys	Lys	Asn	Phe	Leu	Ile	Thr	Asn	Glu	Ser	Pro	Ser	Leu	Thr	85	90	95
Phe	Gln	Lys	Cys	Ile	Glu	Leu	Phe	Ile	Glu	Pro	Val	Thr	Ser	Gly	Phe	100	105	110
Pro	Gly	Ile	His	Pro	Thr	Ala	Val	Ile	His	Pro	Thr	Ala	Arg	Ile	Glu	115	120	125
Lys	Asn	Val	Thr	Ile	Glu	Pro	Tyr	Val	Val	Ile	Ser	Gln	His	Ala	His	130	135	140
Ile	Gly	Ser	Asp	Thr	Tyr	Ile	Gly	Ala	Gly	Ser	Val	Ile	Gly	Ala	His	145	150	155
Ser	Val	Leu	Gly	Ala	Asn	Cys	Leu	Ile	His	Pro	Lys	Val	Val	Ile	Arg	165	170	175
Glu	Arg	Val	Leu	Met	Gly	Asn	Arg	Val	Val	Val	Gln	Pro	Gly	Ala	Val	180	185	190
Leu	Gly	Ser	Cys	Gly	Phe	Gly	Tyr	Ile	Thr	Asn	Ala	Phe	Gly	His	His	195	200	205
Lys	Pro	Leu	Lys	His	Leu	Gly	Tyr	Val	Ile	Val	Gly	Asp	Asp	Val	Glu	210	215	220
Ile	Gly	Ala	Asn	Thr	Thr	Ile	Asp	Arg	Gly	Arg	Phe	Lys	Asn	Thr	Val	225	230	235
Ile	His	Glu	Gly	Thr	Lys	Ile	Asp	Asn	Gln	Val	Gln	Val	Ala	His	His	245	250	255
Val	Glu	Ile	Gly	Lys	His	Ser	Ile	Ile	Val	Ala	Gln	Ala	Gly	Ile	Ala	260	265	270
Gly	Ser	Thr	Lys	Ile	Gly	Glu	His	Val	Ile	Ile	Gly	Gly	Gln	Thr	Gly	275	280	285
Ile	Thr	Gly	His	Ile	Ser	Ile	Ala	Asp	His	Val	Ile	Met	Ile	Ala	Gln	290	295	300
Thr	Gly	Val	Thr	Lys	Ser	Ile	Thr	Ser	Pro	Gly	Ile	Tyr	Gly	Gly	Ala	305	310	315
Pro	Ala	Arg	Pro	Tyr	Gln	Glu	Thr	His	Arg	Leu	Ile	Ala	Lys	Ile	Arg	325	330	335
Asn	Leu	Pro	Lys	Thr	Glu	Glu	Arg	Leu	Ser	Lys	Leu	Glu	Lys	Gln	Val	340	345	350
Arg	Asp	Leu	Ser	Thr	Pro	Ser	Leu	Ala	Glu	Ile	Pro	Ser	Glu	Ile		355	360	365

<210>317
 <211>354
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>317

Arg	Glu	Gln	Lys	Gly	Leu	His	His	Met	Asp	Val	Ser	Arg	Lys	Ile	Asn	1	5	10	15
Arg	His	Thr	Gln	Phe	Tyr	Val	Asp	Ser	Ile	Asp	Gly	Val	Ile	Lys	Asn	20	25	30	
Phe	Asp	His	Lys	Pro	Ser	Glu	Asp	Lys	Ser	Arg	Asp	His	Glu	Glu	Leu	35	40	45	
Glu	Glu	Lys	Leu	Leu	Thr	Ile	Thr	Lys	Arg	Ile	Val	Ala	Ser	Ala	Gln	50	55	60	
Glu	Phe	Gln	Asn	Arg	Lys	Thr	Asp	Ser	Lys	Asn	Tyr	Tyr	Leu	Lys	Lys	65	70	75	80
Thr	Gln	Trp	Leu	Pro	Phe	Lys	Asn	Glu	Glu	Leu	Glu	Gln	Thr	Lys	Glu	85	90	95	
Leu	Phe	Ala	Met	Leu	Thr	Ser	Met	Asp	Lys	Lys	Ile	Ala	Gln	Leu	Phe	100	105	110	
Phe	Tyr	Ser	Pro	Gly	Cys	Ser	Ser	Asp	Trp	Val	Glu	Phe	Thr	Glu	Val	115	120	125	
Ile	Cys	His	Leu	Asn	Arg	Ser	Ile	Gly	Leu	Gly	Gly	Val	Leu	Leu	Cys				

130 135 140
 Cys Gly Leu Phe Glu Gln Gln Cys Glu His Val Val Thr Val Asn Lys
 145 150 155 160
 Lys Leu Asp Leu Pro Leu Leu Leu Gly Thr Thr Val Val Asn Ser Leu
 165 170 175
 Arg Tyr Tyr Leu Thr Tyr Arg Asn Ile Ser Leu Leu Asn Cys Gln Ser
 180 185 190
 Met Ser Glu Leu Gly Lys Glu Leu Gly Asp Val Leu Lys Gln His Gly
 195 200 205
 Val Ala Phe Thr Leu Ile Phe Lys Glu Ile Val Asp Ile Asp Leu Leu
 210 215 220
 Asn Tyr Val Lys Leu Ile Gln Gly Leu Lys Arg Ser Gly Asn Ile Gln
 225 230 235 240
 Ala Arg Ile Tyr Asp Asn Asp Val Pro Thr Leu Pro Ser Val Ser Ser
 245 250 255
 Ser Pro Ile Ala Leu Arg Tyr Ser Leu Ala Asn Thr Ile Arg Gly Leu
 260 265 270
 Ala Leu His Val Asp Phe Ser Ser Leu Lys Phe Ile Ser Pro Ser Ile
 275 280 285
 Leu Ser Asn Thr Glu His Thr Ala Lys Ala Leu Asn Ser Gly Gly Glu
 290 295 300
 Cys Phe Ile Phe Ser Asn Leu Asp Glu Phe Asn Leu Gly Met Lys Ile
 305 310 315 320
 Val Met Gln Leu Leu Arg Thr Gly Lys Ile Ser Pro Glu Ile Leu Asn
 325 330 335
 Lys Asn Ile Met Lys Ile Leu Met Ile Lys Arg Arg Val Arg Ser Leu
 340 345 350
 Tyr Ile

<210>318

<211>342

<212>PRT

<213>Chlamydia pneumoniae

<400>318

Met Asp Ser Ser Ala Pro Tyr Asn Ile Ala Ser Gln Gly Thr Glu Lys
 1 5 10 15
 Ser Thr Val Glu Arg Ile Leu Asp Leu Tyr Gly Pro Ala Ser Cys Ile
 20 25 30
 Lys Phe Leu Lys Gln Met Val Leu Ile Arg Glu Phe Glu Ala Arg Gly
 35 40 45
 Glu Glu Ala Tyr Leu Glu Gly Leu Val Gly Gly Phe Tyr His Ser Tyr
 50 55 60
 Ala Gly Gln Glu Ala Val Ala Thr Ala Ala Ile Ala Asn Thr Gly Leu
 65 70 75 80
 Asp Pro Trp Val Phe Ser Ser Tyr Arg Cys His Ala Leu Ala Ile Leu
 85 90 95
 Leu Asn Ile Pro Leu Gln Glu Ile Ala Ala Glu Leu Leu Gly Lys Glu
 100 105 110
 Thr Gly Cys Ala Leu Gly Arg Gly Gly Ser Met His Met Cys Gly Pro
 115 120 125
 Asn Phe Pro Gly Gly Phe Gly Ile Val Gly Gly Gln Ile Pro Leu Ala
 130 135 140
 Ala Gly Ala Ala Phe Thr Ile Lys Tyr Gln Glu Gln Lys Asn Arg Val
 145 150 155 160
 Ser Leu Cys Phe Ile Gly Asp Gly Ala Val Ala Gln Gly Val Phe His
 165 170 175
 Glu Thr Leu Asn Phe Val Ser Leu His Gln Leu Pro Leu Met Leu Ile
 180 185 190
 Ile Glu Asn Asn Gly Trp Ser Met Gly Thr Ser Leu Asn Arg Ala Val
 195 200 205
 Ala Lys Gln Pro Ile Ala Glu Ser Gln Gly Ser Ser Tyr Asp Ile Arg
 210 215 220
 Ala Val Thr Val Asn Gly Phe Asp Leu Phe Asn Ser Leu Leu Gly Phe
 225 230 235 240

Arg Glu Ala Tyr Arg Tyr Met Val Asp Thr Glu Ser Val Leu Val
 245 250 255
 Glu Cys Leu Cys Ser Arg Phe Arg Gly His Ser Ile Ser Asp Pro Asn
 260 265 270
 Leu Tyr Arg Ser Lys Glu Glu Met Gln Cys Leu Phe Lys Lys Asp Pro
 275 280 285
 Ile Val Leu Ala Lys Asp Trp Leu Ile Arg Leu Glu Val Leu Thr Glu
 290 295 300
 Glu Glu Phe Gln Asn Ile Arg Gln Glu Cys Lys Thr Ala Val Leu Glu
 305 310 315 320
 Ala Phe Ser Asn Ala Lys Leu Ser Ser Asp Pro Ser Val Thr Thr Leu
 325 330 335
 Glu Glu Gly Val Tyr Ala
 340

<210>319

<211>161

<212>PRT

<213>Chlamydia pneumoniae

<400>319

Arg Lys Glu Ser Met Pro Lys His Lys Thr Leu Glu Ile Arg Glu Ala
 1 5 10 15
 Leu Arg Glu Ala Ile Asp Glu Glu Met Ser Arg Asp Pro Asn Val Cys
 20 25 30
 Ile Leu Gly Glu Glu Val Gly Asp Tyr Asn Gly Ala Tyr Lys Val Thr
 35 40 45
 Lys Gly Leu Leu Asp Lys Trp Gly Pro Lys Arg Val Ile Asp Ala Pro
 50 55 60
 Ile Ser Glu Ala Ala Phe Ser Gly Ile Gly Ile Gly Ala Ala Leu Ser
 65 70 75 80
 Gly Leu Arg Pro Ile Ile Glu Phe Met Ser Trp Asn Phe Ser Phe Val
 85 90 95
 Ala Leu Asp Gln Ile Ile Ser His Ala Ala Lys Met His Phe Met Thr
 100 105 110
 Gly Gly Lys Phe Ser Val Pro Ile Val Phe Arg Gly Pro Asn Gly Ala
 115 120 125
 Ala Ala Gln Val Ser Cys Gln His Ser His Cys Val Glu Ser Leu Tyr
 130 135 140
 Ala Asn Ile Pro Gly Leu Asn Tyr Tyr Ser Pro Phe Glu Pro Leu Arg
 145 150 155 160
 Arg

<210>320

<211>150

<212>PRT

<213>Chlamydia pneumoniae

<400>320

Asn Ile Thr Leu Lys Gly Glu Val Pro Thr Glu Glu Tyr Leu Val Pro
 1 5 10 15
 Ile Gly Lys Ala His Arg Val Gln Glu Gly Asn Asp Leu Thr Ile Ile
 20 25 30
 Thr Tyr Ser Arg Met Val Ser Ile Thr Lys Glu Ala Cys Ser Leu Ala
 35 40 45
 Lys Lys Arg Trp Gly Leu Ser Ile Glu Ile Ile Asp Leu Arg Thr Ile
 50 55 60
 Lys Pro Leu Asp Ile Ser Thr Ile Leu Ser Ser Val Arg Lys Thr Ser
 65 70 75 80
 Arg Cys Ile Val Ile Glu Glu Gly His Tyr Phe Ala Gly Ile Ser Ser
 85 90 95
 Glu Ile Ile Ala Leu Ile Thr Glu His Val Phe Asp Ser Leu Asp Ala
 100 105 110
 Pro Pro Leu Arg Val Cys Gln Lys Glu Thr Pro Met Pro Tyr Ser Lys
 115 120 125
 Ile Leu Glu Gln Ala Thr Leu Pro Asn Val Asn Arg Ile Leu Asp Thr
 130 135 140

Ile Glu Lys Val Met Arg
 145 150
 <210>321
 <211>432
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>321
 Gly Lys Phe Val Ile Ser Leu Leu Lys Met Pro Lys Leu Ser Pro Thr
 1 5 10 15
 Met Glu Val Gly Thr Ile Val Lys Trp His Lys Lys Ser Asn Asp Gln
 20 25 30
 Val Ser Phe Gly Asp Val Ile Val Glu Ile Ser Thr Asp Lys Ala Ile
 35 40 45
 Leu Glu His Thr Ala Asn Glu Asp Gly Trp Ile Arg Glu Ile Leu Arg
 50 55 60
 His Glu Gly Glu Lys Ile Val Ile Gly Thr Pro Ile Ala Val Leu Ser
 65 70 75 80
 Thr Glu Ala Asn Glu Pro Phe Asn Leu Glu Glu Leu Leu Pro Lys Thr
 85 90 95
 Glu Pro Ser Asn Leu Glu Ala Ser Pro Lys Gly Ser Ser Glu Glu Val
 100 105 110
 Ser Pro Ala Thr Thr Pro Gln Ala Ala Ser Ala Thr Phe Thr Ala Val
 115 120 125
 Thr Phe Lys Pro Glu Pro Pro Leu Ser Ser Pro Leu Val Phe Lys His
 130 135 140
 Val Gly Thr Thr Asn Asn Leu Ser Pro Leu Ala Arg Gln Leu Ala Lys
 145 150 155 160
 Glu Lys Asn Ile Asp Val Ser Ser Ile Gln Gly Ser Gly Pro Gly Gly
 165 170 175
 Arg Ile Val Lys Lys Asp Leu Glu Lys Ala Pro Pro Lys Ser Ile Ala
 180 185 190
 Gly Phe Gly Tyr Pro Glu Ser Pro Glu Val Pro Pro Gly Ser Tyr His
 195 200 205
 Glu Glu Asn Leu Ser Pro Ile Arg Glu Val Ile Ala Ala Arg Leu Gln
 210 215 220
 Ala Ala Lys Ile Ser Ile Pro His Phe Tyr Val Arg Gln Gln Val Tyr
 225 230 235 240
 Ala Ser Pro Leu Leu Asn Leu Leu Lys Glu Leu Gln Ala Gln Gly Ile
 245 250 255
 Lys Leu Ser Ile Asn Asp Cys Ile Val Arg Ala Cys Ala Leu Ala Leu
 260 265 270
 Lys Glu Phe Pro Ser Ile Asn Ser Gly Phe Asn Ser Val Asp Asn Lys
 275 280 285
 Ile Val Arg Phe Asp Thr Ile Asp Ile Ser Ile Ala Val Ala Ile Pro
 290 295 300
 Asp Gly Ile Ile Thr Pro Ile Ile Arg Cys Ala Asp Arg Lys Asn Leu
 305 310 315 320
 Gly Met Ile Ser Ala Glu Ile Lys Ser Leu Ala Leu Lys Ala Arg Asn
 325 330 335
 Gln Ser Leu Gln Asp Thr Glu Tyr Lys Gly Gly Ser Phe Cys Val Ser
 340 345 350
 Asn Leu Gly Met Thr Gly Ile Thr Glu Phe Thr Ala Ile Val Asn Pro
 355 360 365
 Pro Gln Ala Ala Ile Leu Ala Val Gly Ser Val Thr Glu Gln Ala Leu
 370 375 380
 Val Leu Asp Gly Glu Ile Thr Ile Gly Ser Thr Cys Asn Leu Thr Leu
 385 390 395 400
 Ser Val Asp His Arg Val Ile Asp Gly Tyr Pro Ala Ala Met Phe Met
 405 410 415
 Lys Arg Leu Gln Lys Ile Leu Glu Ala Pro Ala Val Leu Leu Leu Asn
 420 425 430
 <210>322
 <211>104
 <212>PRT

<213>Chlamydia pneumoniae
 <400>323
 Ile Asp Glu Thr Ser Met Phe Phe Ser Phe Ala Ser Cys Leu Ala Asn
 1 5 10 15
 Gly Glu Arg Leu Phe Val Val Pro Thr Cys Leu Lys Thr Lys Gly Glu
 20 25 30
 Glu Arg Gly Gly Ser Gly Leu Lys Val Thr Ala Val Asn Val Ala Glu
 35 40 45
 Ala Ala Cys Gly Val Val Ala Gly Glu Thr Ser Ser Glu Glu Pro Phe
 50 55 60
 Gly Asp Ala Ser Arg Leu Glu Gly Ser Val Leu Gly Arg Ser Ser Ser
 65 70 75 80
 Arg Leu Lys Gly Ser Leu Ala Ser Val Glu Ser Thr Ala Ile Gly Val
 85 90 95
 Pro Ile Thr Ile Phe Ser Pro Ser
 100

<210>333

<211>838

<212>PRT

<213>Chlamydia pneumoniae

<400>323

Asp Gly Cys Ile Val Glu Asp Phe Ser Ser Phe Asp Lys Asn Lys Val
 1 5 10 15
 Ser Val Asp Ser Met Lys Arg Ala Ile Leu Asp Arg Leu Tyr Leu Ser
 20 25 30
 Val Val Gln Ser Pro Glu Ser Ala Ser Pro Arg Asp Ile Phe Thr Ala
 35 40 45
 Val Ala Lys Thr Val Met Glu Trp Leu Ala Lys Gly Trp Leu Lys Thr
 50 55 60
 Gln Asn Gly Tyr Tyr Lys Asn Asp Val Lys Arg Val Tyr Tyr Leu Ser
 65 70 75 80
 Met Glu Phe Leu Leu Gly Arg Ser Leu Thr Ser Asn Leu Leu Asn Leu
 85 90 95
 Gly Ile Leu Asp Leu Val Arg Lys Ala Leu Lys Thr Leu Asn Tyr Asp
 100 105 110
 Phe Asp His Leu Val Glu Met Glu Ser Asp Ala Gly Leu Gly Asn Gly
 115 120 125
 Gly Leu Gly Arg Leu Ala Ala Cys Tyr Leu Asp Ser Met Ala Thr Leu
 130 135 140
 Ala Val Pro Ala Tyr Gly Tyr Gly Ile Arg Tyr Asp Tyr Gly Ile Phe
 145 150 155 160
 Asp Gln Arg Ile Val Asn Gly Tyr Gln Glu Glu Ala Pro Asp Glu Trp
 165 170 175
 Leu Arg Tyr Gly Asn Pro Trp Glu Ile Cys Arg Gly Glu Tyr Leu Tyr
 180 185 190
 Pro Val Arg Phe Tyr Gly Arg Val Ile His Tyr Thr Asp Ser Arg Gly
 195 200 205
 Lys Gln Val Ala Asp Leu Val Asp Thr Gln Glu Val Leu Ala Met Ala
 210 215 220
 Tyr Asp Ile Pro Ile Pro Gly Tyr Gly Asn Asp Thr Val Asn Ser Leu
 225 230 235 240
 Arg Leu Trp Gln Ala Gln Ser Pro Arg Gly Phe Glu Phe Ser Tyr Phe
 245 250 255
 Asn His Gly Asn Tyr Ile Gln Ala Ile Glu Asp Ile Ala Leu Ile Glu
 260 265 270
 Asn Ile Ser Arg Val Leu Tyr Pro Asn Asp Ser Ile Thr Glu Gly Gln
 275 280 285
 Glu Leu Arg Leu Lys Gln Glu Tyr Phe Leu Val Ser Ala Thr Ile Gln
 290 295 300
 Asp Ile Ile Arg Arg Tyr Thr Lys Thr His Ile Cys Leu Asp Asn Leu
 305 310 315 320
 Ala Asp Lys Val Val Val Gln Leu Asn Asp Thr His Pro Ala Leu Gly
 325 330 335
 Ile Ala Glu Met Met His Ile Leu Val Asp Arg Glu Glu Leu Pro Trp

340 345 350
 Asp Lys Ala Trp Glu Met Thr Thr Val Ile Phe Asn Tyr Thr Asn His
 355 360 365
 Thr Ile Leu Pro Glu Ala Leu Glu Arg Trp Pro Leu Asp Leu Phe Ser
 370 375 380
 Lys Leu Leu Pro Arg His Leu Glu Ile Ile Tyr Glu Ile Asn Ser Arg
 385 390 395 400
 Trp Leu Glu Lys Val Gly Ser Arg Tyr Pro Lys Asn Asp Asp Lys Arg
 405 410 415
 Arg Ser Leu Ser Ile Val Glu Glu Gly Tyr Gln Lys Arg Ile Asn Met
 420 425 430
 Ala Asn Leu Ala Val Val Gly Ser Ala Lys Val Asn Gly Val Ser Ser
 435 440 445
 Phe His Ser Gln Leu Ile Lys Asp Thr Leu Phe Lys Glu Phe Tyr Glu
 450 455 460
 Phe Phe Pro Glu Lys Phe Ile Asn Val Thr Asn Gly Val Thr Pro Arg
 465 470 475 480
 Arg Trp Ile Ala Leu Cys Asn Pro Arg Leu Ser Lys Leu Leu Asn Glu
 485 490 495
 Thr Ile Gly Asp Arg Tyr Ile Ile Asp Leu Ser His Leu Ser Leu Ile
 500 505 510
 Arg Ser Phe Ala Glu Asp Ser Gly Phe Arg Asp His Trp Lys Gly Val
 515 520 525
 Lys Leu Lys Asn Lys Gln Asp Leu Thr Ser Arg Ile Tyr Asn Glu Val
 530 535 540
 Gly Glu Ile Val Asp Pro Asn Ser Leu Phe Asp Cys His Ile Lys Arg
 545 550 555 560
 Ile His Glu Tyr Lys Arg Gln Leu Met Asn Ile Leu Arg Val Ile Tyr
 565 570 575
 Val Tyr Asn Asp Leu Lys Glu Asn Pro Asn Gln Asp Val Val Pro Thr
 580 585 590
 Thr Val Ile Phe Ser Gly Lys Ala Ala Pro Gly Tyr Val Met Ala Lys
 595 600 605
 Leu Ile Ile Lys Leu Ile Asn Ser Val Ala Asp Val Val Asn Gln Asp
 610 615 620
 Ser Arg Val Asn Asp Lys Leu Lys Val Leu Phe Leu Pro Asn Tyr Arg
 625 630 635 640
 Val Ser Met Ala Glu His Ile Ile Pro Gly Thr Asp Leu Ser Glu Gln
 645 650 655
 Ile Ser Thr Ala Gly Met Glu Ala Ser Gly Thr Gly Asn Met Lys Phe
 660 665 670
 Ala Leu Asn Gly Ala Leu Thr Ile Gly Thr Met Asp Gly Ala Asn Ile
 675 680 685
 Glu Met Ala Glu His Ile Gly Lys Glu Asn Met Phe Ile Phe Gly Leu
 690 695 700
 Leu Glu Glu Gln Ile Val Gln Leu Arg Arg Glu Tyr Cys Pro Gln Thr
 705 710 715 720
 Ile Cys Asp Lys Asn Pro Lys Ile Arg Gln Val Leu Asp Leu Leu Glu
 725 730 735
 Gln Gly Phe Phe Asn Ser Asn Asp Lys Asp Leu Phe Lys Pro Ile Val
 740 745 750
 His Arg Leu Leu His Glu Gly Asp Pro Phe Phe Val Leu Ala Asp Leu
 755 760 765
 Glu Ser Tyr Ile Ala Ala His Glu Asn Val Asn Lys Leu Phe Lys Glu
 770 775 780
 Pro Asp Ser Trp Thr Lys Ile Ser Ile Tyr Asn Thr Ala Gly Met Gly
 785 790 795 800
 Phe Phe Ser Ser Asp Arg Ala Ile Gln Asp Tyr Ala Arg Asp Ile Trp
 805 810 815
 His Val Pro Thr Lys Ser Cys Ser Gly Glu Gly Asn
 820 825

<210>324

<211>86

<212>PRT

<213>Chlamydia pneumoniae

<400>324

Val	Phe	Ser	His	Pro	Leu	Ala	Asn	His	Ser	Ile	Thr	Val	Phe	Ala	Thr
1				5					10					15	
Ala	Val	Lys	Ile	Ser	Leu	Gly	Asp	Ala	Asp	Ser	Gly	Asp	Cys	Thr	Thr
		20					25						30		
Leu	Lys	Tyr	Arg	Arg	Ser	Lys	Ile	Ala	Arg	Phe	Ile	Glu	Ser	Thr	Leu
		35					40					45			
Thr	Leu	Phe	Leu	Ser	Lys	Leu	Glu	Lys	Ser	Ser	Thr	Met	Gln	Pro	Phe
	50					55					60				
Gln	Ile	Pro	Ser	Arg	Thr	Leu	His	Met	Arg	Asn	Leu	Lys	Lys	Lys	Lys
65					70				75						80
Glu	Leu	Arg	Leu	Gly	Lys										
				85											

<310>325

<211>128

<212>PRT

<213>Chlamydia pneumoniae

<400>325

Phe	Phe	Thr	Gln	Glu	Asn	Asn	Met	Ala	Thr	Val	Ala	Gln	Thr	Pro	Gln
1				5					10					15	
Thr	Thr	Gln	Pro	Gln	Pro	Ser	Val	Ser	His	Lys	Ala	Thr	His	Arg	Tyr
		20					25						30		
Cys	Ser	Trp	Val	Phe	Phe	Lys	Pro	Ile	Leu	Val	Ser	Leu	Gly	Leu	Leu
	35						40					45			
Leu	Ala	Ser	Leu	Thr	Thr	Leu	Gly	Leu	Val	Ile	Ala	Ser	Gly	Val	Thr
	50					55					60				
Leu	Ser	Leu	Gly	Ile	Gly	His	Cys	Ser	Cys	Tyr	Thr	Asp	Ser	Thr	Ala
65				70					75						80
Gly	Ile	Ala	Leu	Val	Leu	Ala	Phe	Asn	His	Ile	Arg	Gln	Phe	Lys	Gln
			85					90						95	
Ala	Arg	Thr	Ala	Glu	Leu	Asn	Ser	Met	Lys	Met	Ile	Ser	Ala	Pro	Ala
		100						105					110		
Ala	Ala	Thr	Val	Gln	Lys	Gln	Lys	Leu	Glu	Asp	Arg	Tyr	Ser	Ser	Lys
		115					120					125			

<310>326

<211>448

<212>PRT

<213>Chlamydia pneumoniae

<400>326

Phe	Met	Arg	Ala	Trp	Glu	Glu	Phe	Leu	Leu	Leu	Gln	Glu	Lys	Glu	Ile
1				5					10					15	
Gly	Thr	Asn	Thr	Val	Asp	Lys	Trp	Leu	Arg	Ser	Leu	Lys	Val	Leu	Cys
		20					25						30		
Phe	Asp	Ala	Cys	Asn	Leu	Tyr	Leu	Glu	Ala	Gln	Asp	Ser	Phe	Gln	Ile
	35						40					45			
Thr	Trp	Phe	Glu	Glu	His	Ile	Arg	His	Lys	Val	Lys	Ser	Gly	Leu	Val
	50				55						60				
Asn	Asn	Asn	Asn	Lys	Pro	Ile	Arg	Val	His	Val	Thr	Ser	Val	Asp	Lys
65				70					75					80	
Ala	Ala	Pro	Phe	Tyr	Lys	Glu	Lys	Gln	Met	Gln	Gln	Glu	Lys	Thr	Ala
		85						90					95		
Tyr	Phe	Thr	Met	His	Tyr	Gly	Ser	Val	Asn	Pro	Glu	Met	Thr	Phe	Ser
	100						105						110		
Asn	Phe	Leu	Val	Thr	Pro	Glu	Asn	Asp	Leu	Pro	Phe	Arg	Val	Leu	Gln
	115					120						125			
Glu	Phe	Thr	Lys	Ser	Pro	Asp	Glu	Asn	Gly	Gly	Val	Thr	Phe	Asn	Pro
	130					135					140				
Ile	Tyr	Leu	Phe	Gly	Pro	Glu	Gly	Ser	Gly	Lys	Thr	His	Leu	Met	Gln
145				150						155				160	
Ser	Ala	Ile	Ser	Val	Leu	Arg	Glu	Ser	Gly	Gly	Lys	Ile	Leu	Tyr	Val
		165					170						175		
Ser	Ser	Asp	Leu	Phe	Thr	Glu	His	Leu	Val	Ser	Ala	Ile	Arg	Ser	Gly
		180					185						190		

Glu Met Gln Lys Phe Arg Ser Phe Tyr Arg Asn Ile Asp Ala Leu Phe
 195 200 205
 Ile Glu Asp Ile Glu Val Phe Ser Gly Lys Ser Ala Thr Gln Glu Glu
 210 215 220
 Phe Phe His Thr Phe Asn Ser Leu His Ser Glu Gly Lys Leu Ile Val
 225 230 235 240
 Val Ser Ser Ser Tyr Ala Pro Val Asp Leu Val Ala Val Glu Asp Arg
 245 250 255
 Leu Ile Ser Arg Phe Glu Trp Gly Val Ala Ile Pro Ile His Pro Leu
 260 265 270
 Val Gln Glu Gly Leu Arg Ser Phe Leu Met Arg Gln Val Glu Arg Leu
 275 280 285
 Ser Ile Arg Ile Gln Glu Thr Ala Leu Asp Phe Leu Ile Tyr Ala Leu
 290 295 300
 Ser Ser Asn Val Lys Thr Leu Leu His Ala Leu Asn Leu Leu Ala Lys
 305 310 315 320
 Arg Val Met Tyr Lys Lys Leu Ser His Gln Leu Leu Tyr Glu Asp Asp
 325 330 335
 Val Lys Thr Leu Leu Lys Asp Val Leu Glu Ala Ala Gly Ser Val Arg
 340 345 350
 Leu Thr Pro Leu Lys Ile Ile Arg Asn Val Ala Gln Tyr Gly Val
 355 360 365
 Ser Gln Glu Ser Ile Leu Gly Arg Ser Gln Ser Arg Glu Tyr Val Leu
 370 375 380
 Pro Arg Gln Val Ala Met Tyr Phe Cys Arg Gln Lys Leu Ser Leu Ser
 385 390 395 400
 Tyr Val Arg Ile Gly Asp Val Phe Ser Arg Asp His Ser Thr Val Ile
 405 410 415
 Ser Ser Ile Arg Leu Ile Glu Gln Lys Ile Glu Glu Asn Ser His Asp
 420 425 430
 Ile His Met Ala Ile Gln Asp Ile Ser Xaa Glu Phe Lys Phe Leu Ala
 435 440 445

<210>327

<211>808

<212>PRT

<213>Chlamydia pneumoniae

<400>327

Tyr Phe Asp Leu Leu Ser Leu Ile Phe Arg Val Tyr Gln Met Asn Lys
 1 5 10 15
 Arg Thr Leu Leu Phe Val Ser Leu Ile Gly Ile Ala Phe Val Gly Cys
 20 25 30
 Gln Ile Phe Phe Gly Tyr Asn Glu Phe Arg Ser Cys Lys Asn Leu Ala
 35 40 45
 Glu Lys Gln Arg Lys Ile Ser Glu Gln Thr Leu Ala Ala Val Glu Ser
 50 55 60
 Val Gly Leu Ser Val Ala Ser Trp Asp Thr Asp Val Asn Gly Glu Glu
 65 70 75 80
 His Lys Asn Asn Tyr Ala Val Arg Val Gly Asp Lys Leu Phe Leu Leu
 85 90 95
 His Asn Gly Glu Ala Ala Gln Ser Val Tyr Ser Ser Gly Glu Ser Trp
 100 105 110
 Ser Phe Val Asp His Lys Cys Gly Phe Asp Asn Ile His Leu Ala Leu
 115 120 125
 Tyr Arg Gln Gln Gly Ser Ser Phe Asn Pro Thr Asn Thr Gly Lys Val
 130 135 140
 Phe Leu Pro Thr Asn His Glu Gly Leu Pro Val Leu Val Val Glu Phe
 145 150 155 160
 Arg Asn Asn Lys Glu Pro Leu Val Phe Leu Gly Glu Tyr Ala Gln Gly
 165 170 175
 Arg Ile Ser Asn Lys Asp Ser Thr Ile Phe Gly Thr Ala Leu Val Phe
 180 185 190
 Trp Arg Ser Gly Ser Asp Tyr Ile Pro Leu Gly Leu Tyr Asp Ser Arg
 195 200 205
 Glu Glu Lys Leu Val Ser Leu Asp Leu Pro Ile Thr Arg Ala Val Ile

210	Phe Gly	Asn Asp	Gln Asp	Ser Ala	Lys Ser	Ser Ser	Asp Thr	Ala Asn	His
235	Tyr Val	Leu Phe	Asn Asp	Tyr Met	Gln Ile	Ile Val	Ser Glu	Glu Ser	
245	Gly Ser	Ile Glu	Gly Ile	Asn Leu	Pro Phe	Ala Ser	Thr Asn	Asn Lys	
260	Ser Ile	Val Asn	Glu Ile	Gly Phe	Asp Arg	Asp Leu	Ala Ser	Glu Lys	
275	Ser Pro	Glu Ala	Leu Phe	Pro Gly	Leu Ser	Ser Lys	Leu Pro	Asp Gly	
290	Gln Gln	Ala Lys	Asn Ser	Ile Gly	Gly Tyr	Tyr Pro	Leu Leu	Arg Arg	
305	Gly Leu	Leu Ser	Asp Ser	Lys Lys	Leu Leu	Pro Leu	Glu Tyr	His Ala	
325	Leu Asn	Val Val	Ser Gly	Arg Glu	Leu Ala	Thr Pro	Val Ala	Leu Arg	
340	Tyr Arg	Val Leu	Ser Tyr	Thr Pro	His Ser	Ile Gln	Leu Glu	Ser Leu	
355	Asp Arg	Ser Val	Gln Lys	Val Tyr	Lys Leu	Pro Glu	Asn Pro	Glu Glu	
370	Lys Pro	Tyr Val	Phe Glu	Thr Ala	Ile Thr	Leu Thr	Lys Glu	Thr Glu	
385	Asp Val	Trp Val	Thr Ser	Gly Val	Pro Glu	Val Glu	Ile Met	Ser Asn	
405	Ala Ser	Ala Pro	Thr Ile	Lys Tyr	Arg Val	Ile Lys	Lys Asn	Lys Gly	
420	Ser Leu	Asp Lys	Val Lys	Leu Pro	Lys Val	Lys Glu	Pro Leu	Ala Val	
435	Arg Arg	Gly Val	Tyr Pro	Gln Trp	Ile Leu	Asn Ser	Asn Gly	Tyr Phe	
450	Gly Ile	Ile Leu	Thr Pro	Leu Ser	Glu Ile	Ala Ser	Gly Tyr	Gly Ser	
465	Leu Tyr	Ile Ser	Gly Ser	Thr Ala	Pro Thr	Arg Leu	Ser Ala	Ile Ser	
485	Pro Lys	Asn Gln	Leu Tyr	Pro Val	Ser Lys	Tyr Pro	Gly Tyr	Glu Thr	
500	Leu Leu	Pro Leu	Pro Lys	Asp Ala	Gly Thr	His Arg	Phe Leu	Val Tyr	
515	Ala Gly	Pro Leu	Ala Glu	Pro Thr	Leu Lys	Val Leu	Asp Lys	Thr Ile	
530	Thr Gln	Glu Lys	Gly Glu	Asn Pro	Glu Tyr	Leu Asp	Ser Ile	Ser Phe	
545	Arg Gly	Val Phe	Ala Phe	Ile Thr	Ala Pro	Phe Ala	Ala Leu	Leu Phe	
565	Ile Ile	Met Lys	Phe Phe	Lys Leu	Val Thr	Gly Ser	Trp Gly	Ile Ser	
580	Ile Ile	Leu Leu	Thr Val	Phe Leu	Lys Leu	Leu Tyr	Pro Leu	Ser	
595	Ala Trp	Ser Ile	Arg Ser	Xaa Arg	Arg Met	Xaa Ile	Leu Ser	Pro Tyr	
610	Ile Gln	Gln Ile	Gln Gln	Lys Tyr	Lys Asn	Glu Pro	Lys Arg	Ala Gln	
625	Met Glu	Ile Met	Gly Leu	Tyr Lys	Thr Asn	Lys Val	Asn Pro	Ile Thr	
645	Gly Cys	Leu Pro	Leu Leu	Ile Gln	Leu Pro	Phe Leu	Ile Ala	Met Phe	
660	Asp Leu	Leu Lys	Ser Ser	Phe Leu	Leu Arg	Gly Ala	Ser Phe	Ile Pro	
675	Gly Trp	Ile Asp	Asn Leu	Thr Ala	Pro Asp	Val Leu	Phe Ser	Trp Gln	
690	Thr Ser	Ile Trp	Phe Ile	Gly Asn	Glu Phe	His Leu	Leu Pro	Ile Leu	
705	Leu Gly	Ile Val	Met Phe	Leu Gln	Gln Lys	Val Thr	Ser Leu	His Lys	
710									
715									
720									

725 730 735
 Lys Gly Pro Val Thr Asp Gln Gln Lys Gln Gln Val Met Gly Asn
 740 745 750
 Met Met Ala Ile Leu Phe Thr Ala Met Phe Tyr Asn Phe Pro Ser Gly
 755 760 765
 Leu Asn Ile Tyr Trp Leu Ser Ser Met Ile Leu Gly Val Val Gln Gln
 770 775 780
 Trp Ile Thr Asn Lys Ile Leu Asp Ser Lys His Leu Lys Asn Glu Val
 785 790 795 800
 Val Leu Asn Asn Lys Lys His Arg
 805

<210>328

<211>203

<212>PRT

<213>Chlamydia pneumoniae

<400>328

Phe Phe Met Asp Gly Val Phe Thr Tyr Asn Ile Leu Lys Arg Ser Phe
 1 5 10 15
 Lys Tyr Gly Thr Glu Ala Cys Arg Val Met Glu Ala Phe Phe Gly Phe
 20 25 30
 Leu Leu Trp Ala Ala Ile Phe Ser Trp Ile Tyr Lys Lys Lys Ile Ser
 35 40 45
 Lys Leu Thr Phe Leu Phe Leu Thr Asp Leu Cys Gly Ser Val Phe Gly
 50 55 60
 Ile Ala Ala Phe Phe Ile Arg Leu Gly Asn Phe Trp Asn Gln Glu Ile
 65 70 75 80
 Val Gly Thr Pro Thr Ser Leu Pro Trp Gly Val Val Phe Ser Asp Pro
 85 90 95
 Met Gln Gly Val Gln Gly Val Pro Val His Pro Val Gln Leu Tyr Glu
 100 105 110
 Gly Ile Ser Tyr Leu Val Val Ser Gly Ile Leu Tyr Phe Leu Ser Tyr
 115 120 125
 Lys Arg Tyr Leu His Leu Gly Lys Gly Tyr Val Thr Ser Ile Ala Cys
 130 135 140
 Ile Ser Val Ala Phe Ile Arg Phe Phe Ala Glu Tyr Val Lys Ser His
 145 150 155 160
 Gln Gly Lys Val Leu Ala Glu Asp Cys Leu Leu Thr Ile Gly Gln Ile
 165 170 175
 Leu Ser Ile Pro Leu Phe Leu Phe Gly Val Ala Leu Leu Ile Ile Cys
 180 185 190
 Ser Leu Lys Ala Arg Arg His Arg Ser His Ile
 195 200

<210>329

<211>153

<212>PRT

<213>Chlamydia pneumoniae

<400>329

Cys Thr Met Ala Arg Asn Ile Lys Tyr Phe Leu Ile Leu Phe Pro Gly
 1 5 10 15
 Ile Leu Trp Ile Ser Ala Gly Met Lys Leu Leu Leu Lys Ala Thr Ala
 20 25 30
 Ile Ala Leu Asp Pro Leu Ser Ser Phe Phe Thr Tyr Cys Leu Leu Ser
 35 40 45
 Met Val Ser Trp Gly Leu Ala Ser Leu Lys His Arg Tyr Leu Leu Ser
 50 55 60
 Lys Thr Ile Arg Lys Gln Leu Ser Leu Ser Ser Glu Phe Phe Ser Gln
 65 70 75 80
 Lys Ile Thr Trp Ile Ala Tyr Ile Lys Gln Thr Phe Ile Ser Arg Arg
 85 90 95
 Phe Leu Ile Met Val Ile Met Ile Ala Phe Ser Leu Val Leu Arg Arg
 100 105 110
 Tyr Ile Ser Asn Pro Gln Ala Leu Phe Val Ile Arg Ala Thr Val Gly
 115 120 125
 Tyr Ala Leu Ile Lys Thr Ala Ile Ala Tyr Phe Ser Lys Leu Gln Asn

130 135 140
Ala Leu Met Glu Asn Pro Glu Gly Asn
145 150
<210>330
<211>122
<212>PRT
<213>Chlamydia pneumoniae
<400>330
Met Glu Ile Ile His Ile Gly Thr Asp Ile Ile Glu Ile Ser Arg Ile
1 5 10 15
Arg Glu Ala Ile Ala Thr His Gly Asn Arg Leu Leu Asn Arg Ile Phe
20 25 30
Thr Glu Ala Glu Gln Lys Tyr Cys Leu Glu Lys Thr Asp Pro Ile Pro
35 40 45
Ser Phe Ala Gly Arg Phe Ala Gly Lys Glu Ala Val Ala Lys Ala Leu
50 55 60
Gly Thr Gly Ile Gly Ser Val Val Ala Trp Lys Asp Ile Glu Val Phe
65 70 75 80
Lys Val Ser His Gly Pro Glu Val Leu Leu Pro Ser His Val Tyr Ala
85 90 95
Lys Ile Gly Ile Ser Lys Val Ile Leu Ser Ile Ser His Cys Lys Glu
100 105 110
Tyr Ala Thr Ala Thr Ala Ile Ala Leu Ala
115 120
<210>331
<211>311
<212>PRT
<213>Chlamydia pneumoniae
<400>331
Met Ile His Ser Arg Leu Ile Ile Ile Gly Ser Gly Pro Ser Gly Tyr
1 5 10 15
Thr Ala Ala Ile Tyr Ala Ser Arg Ala Leu Leu His Pro Leu Leu Phe
20 25 30
Glu Gly Phe Phe Ser Gly Ile Ser Gly Gly Gln Leu Met Thr Thr Thr
35 40 45
Glu Val Glu Asn Phe Pro Gly Phe Pro Glu Gly Ile Leu Gly Pro Lys
50 55 60
Leu Met Asn Asn Met Lys Glu Gln Ala Val Arg Phe Gly Thr Lys Thr
65 70 75 80
Leu Ala Gln Asp Ile Ile Ser Val Asp Phe Ser Val Arg Pro Phe Ile
85 90 95
Leu Lys Ser Lys Glu Glu Thr Tyr Ser Cys Asp Ala Cys Ile Ile Ala
100 105 110
Thr Gly Ala Ser Ala Lys Arg Leu Glu Ile Pro Gly Ala Gly Asn Asp
115 120 125
Glu Phe Trp Gln Lys Gly Val Thr Ala Cys Ala Val Cys Asp Gly Ala
130 135 140
Ser Pro Ile Phe Lys Asn Lys Asp Leu Tyr Val Ile Gly Gly Gly Asp
145 150 155 160
Ser Ala Leu Glu Glu Ala Leu Tyr Leu Thr Arg Tyr Gly Ser His Val
165 170 175
Tyr Val Val His Arg Arg Asp Lys Leu Arg Ala Ser Lys Ala Met Glu
180 185 190
Ala Arg Ala Gln Asn Asn Glu Lys Ile Thr Phe Leu Trp Asn Ser Glu
195 200 205
Ile Val Lys Ile Ser Gly Asp Ser Ile Val Arg Ser Val Asp Ile Lys
210 215 220
Asn Val Gln Thr Gln Glu Ile Thr Thr Arg Glu Ala Ala Gly Val Phe
225 230 235 240
Phe Ala Ile Gly His Lys Pro Asn Thr Asp Phe Leu Gly Gly Gln Leu
245 250 255
Thr Leu Asp Glu Ser Gly Tyr Ile Val Thr Glu Lys Gly Thr Ser Lys
260 265 270
Thr Ser Val Pro Gly Val Phe Ala Ala Gly Asp Val Gln Asp Lys Tyr

275 280 285
 Tyr Arg Gln Ala Val Thr Ser Ala Gly Gly Gly Cys Ile Ala Ala Leu
 290 295 300
 Asp Ala Glu Arg Phe Leu Gly
 305 310
 <210>332
 <211>580
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>332
 Met Pro Lys Gln Ala Glu Tyr Thr Trp Gly Ser Lys Lys Ile Leu Asp
 1 5 10 15
 Asn Ile Glu Cys Leu Thr Glu Asp Val Ala Glu Phe Lys Asp Leu Leu
 20 25 30
 Tyr Thr Ala His Arg Ile Thr Ser Ser Glu Glu Glu Ser Asp Asn Glu
 35 40 45
 Ile Gln Pro Gly Ala Ile Leu Lys Gly Thr Val Val Asp Ile Asn Lys
 50 55 60
 Asp Phe Val Val Val Asp Val Gly Leu Lys Ser Glu Gly Val Ile Pro
 65 70 75 80
 Met Ser Glu Phe Ile Asp Ser Ser Glu Gly Leu Val Leu Gly Ala Glu
 85 90 95
 Val Glu Val Tyr Leu Asp Gln Ala Glu Asp Glu Glu Gly Lys Val Val
 100 105 110
 Leu Ser Arg Glu Lys Ala Thr Arg Gln Arg Gln Trp Glu Tyr Ile Leu
 115 120 125
 Ala His Cys Glu Glu Gly Ser Ile Val Lys Gly Gln Ile Thr Arg Lys
 130 135 140
 Val Lys Gly Gly Leu Ile Val Asp Ile Gly Met Glu Ala Phe Leu Pro
 145 150 155 160
 Gly Ser Gln Ile Asp Asn Lys Lys Ile Lys Asn Leu Asp Asp Tyr Val
 165 170 175
 Gly Lys Val Cys Glu Phe Lys Ile Leu Lys Ile Asn Val Glu Arg Arg
 180 185 190
 Asn Ile Val Val Ser Arg Arg Glu Leu Leu Glu Ala Glu Arg Ile Ser
 195 200 205
 Lys Lys Ala Glu Leu Ile Glu Gln Ile Ser Ile Gly Glu Tyr Arg Lys
 210 215 220
 Gly Val Val Lys Asn Ile Thr Asp Phe Gly Val Phe Leu Asp Leu Asp
 225 230 235 240
 Gly Ile Asp Gly Leu Leu His Ile Thr Asp Met Thr Trp Lys Arg Ile
 245 250 255
 Arg His Pro Ser Glu Met Val Glu Leu Asn Gln Glu Leu Glu Val Ile
 260 265 270
 Ile Leu Ser Val Asp Lys Glu Lys Gly Arg Val Ala Leu Gly Leu Lys
 275 280 285
 Gln Lys Glu His Asn Pro Trp Glu Asp Ile Glu Lys Lys Tyr Pro Pro
 290 295 300
 Gly Lys Arg Val Leu Gly Lys Ile Val Lys Leu Leu Pro Tyr Gly Ala
 305 310 315 320
 Phe Ile Glu Ile Glu Gly Ile Glu Gly Leu Ile His Ile Ser Glu
 325 330 335
 Met Ser Trp Val Lys Asn Ile Val Asp Pro Ser Glu Val Val Asn Lys
 340 345 350
 Gly Asp Glu Val Glu Ala Ile Val Leu Ser Ile Gln Lys Asp Glu Gly
 355 360 365
 Lys Ile Ser Leu Gly Leu Lys Gln Thr Glu Arg Asn Pro Trp Asp Asn
 370 375 380
 Ile Glu Glu Lys Tyr Pro Ile Gly Leu His Val Asn Ala Glu Ile Lys
 385 390 395 400
 Asn Leu Thr Asn Tyr Gly Ala Phe Val Glu Leu Glu Pro Gly Ile Glu
 405 410 415
 Gly Leu Ile His Ile Ser Asp Met Ser Trp Ile Lys Lys Val Ser His
 420 425 430

Pro Ser Glu Leu Lys Lys Gly Asn Ser Val Glu Val Ile Leu
 435 440 445
 Ser Val Asp Lys Glu Ser Lys Lys Ile Thr Leu Gly Val Lys Gln Leu
 450 455 460
 Ser Ser Asn Pro Trp Asn Glu Ile Glu Ala Met Phe Pro Ala Gly Thr
 465 470 475 480
 Val Ile Ser Gly Val Val Thr Lys Ile Thr Ala Phe Gly Ala Phe Val
 485 490 495
 Glu Leu Gln Asn Gly Ile Glu Gly Leu Ile His Val Ser Glu Leu Ser
 500 505 510
 Asp Lys Pro Phe Ala Lys Ile Glu Asp Ile Ile Ser Ile Gly Glu Asn
 515 520 525
 Val Ser Ala Lys Val Ile Lys Leu Asp Pro Asp His Lys Lys Val Ser
 530 535 540
 Leu Ser Val Lys Glu Tyr Leu Ala Asp Asn Ala Tyr Asp Gln Asp Ser
 545 550 555 560
 Arg Thr Glu Leu Asp Phe Lys Asp Ser Gln Gly Pro Lys Glu Arg Lys
 565 570 575
 Lys Lys Gly Lys
 580

<210>333

<211>235

<212>PRT

<213>Chlamydia pneumoniae

<400>333

Met Asn Lys Asn Leu Val Ala Ile Phe Asp Tyr Met Glu Lys Glu Lys
 1 5 10 15
 Gly Ile Gln Arg Ser Thr Ile Ile Gly Ala Ile Glu Ser Ala Leu Lys
 20 25 30
 Ile Ala Ala Lys Lys Thr Leu Arg Asp Asp Ala Asn Ile Ser Val Asn
 35 40 45
 Ile Asn Ser Arg Thr Gly Asp Ile Glu Val Phe Cys Glu Lys Glu Ile
 50 55 60
 Val Glu Ile Cys Gln Asn Pro Ser Lys Glu Ile Pro Leu Asp Lys Ala
 65 70 75 80
 Arg Glu Tyr Asp Pro Asp Cys Gln Ile Gly Gln Tyr Met Asp Val Pro
 85 90 95
 Phe Val Ser Asp Asn Phe Gly Arg Ile Ala Ala His Ala Ala Arg Gln
 100 105 110
 Ile Ile Gly Gln Lys Leu Arg His Ala Glu Arg Asp Val Ile Tyr Glu
 115 120 125
 Glu Tyr Arg His Arg Val Asn Glu Thr Leu Ser Gly Val Val Lys Arg
 130 135 140
 Phe Ala Lys Gly Ser Asn Leu Ile Ile Asp Leu Gly Lys Val Glu Ala
 145 150 155 160
 Ile Leu Pro Thr Arg Phe Tyr Pro Lys Thr Glu Lys His Lys Ile Gly
 165 170 175
 Asp Lys Ile Tyr Ala Leu Leu Tyr Glu Val Gln Glu Ser Glu Asn Gly
 180 185 190
 Gly Ala Glu Val Ile Leu Ser Arg Ser His Ala Glu Phe Val Lys Gln
 195 200 205
 Leu Phe Ile Ser Arg Ser Pro Arg Thr Arg Arg Arg Phe Cys Gly Asp
 210 215 220

Cys

225

<210>334

<211>174

<212>PRT

<213>Chlamydia pneumoniae

<400>334

Lys Ile Ser Phe Arg Glu Leu Asn Asp Glu Lys Ile Asp Ile Val Asn
 1 5 10 15
 Tyr Ser Pro Val Ser Thr Glu Leu Leu Gln Asn Leu Leu Tyr Pro Ile
 20 25 30

Glu Ile Gln Lys Ile Ala Ile Leu Glu Asp Asp Lys Val Ala Ile
 35 40 45
 Val Val Asn Asp Ala Asp Tyr Ala Thr Val Ile Gly Lys Arg Gly Ile
 50 55 60
 Asn Ala Arg Leu Ile Ser His Ile Leu Asp Tyr Glu Leu Glu Val Gln
 65 70 75 80
 Arg Met Ser Glu Tyr Asn Lys Leu Leu Glu Ile Gln Arg Leu Gln Leu
 85 90 95
 Ala Glu Phe Asp Ser Pro His Leu Asp Gln Pro Leu Glu Met Glu Gly
 100 105 110
 Ile Ser Lys Leu Val Ile Gln Asn Leu Glu His Ala Gly Tyr Asp Thr
 115 120 125
 Ile Arg Arg Val Leu Leu Ala Ser Ala Asn Asp Leu Ala Ser Val Pro
 130 135 140
 Gly Ile Ser Leu Glu Leu Ala Tyr Lys Ile Leu Glu Gln Val Ser Lys
 145 150 155 160
 Tyr Gly Glu Ser Lys Val Asp Glu Lys Pro Glu Ile Glu Asp
 165 170

<210>335

<211>761

<212>PRT

<213>Chlamydia pneumoniae

<400>335

Leu Leu Ile Arg Ser Leu Ser Lys Ser Ala Asn Met Glu Lys Val Lys
 1 5 10 15
 Leu Thr Lys Asn Leu Lys Leu Lys Ile Lys Asn Ala Gln Leu Thr Lys
 20 25 30
 Ala Ala Gly Leu Asp Lys Leu Lys Gln Lys Leu Ala Gln Ala Gly Ser
 35 40 45
 Ser Glu Ala Lys Ser Ser Ser Glu Lys Pro Ser Ala Lys Glu Lys Ser
 50 55 60
 Val Lys Val Ala Leu Ala Ala Thr Ser Thr Pro Thr Ala Ser Ala Glu
 65 70 75 80
 Gln Ala Ser Pro Glu Ser Thr Ser Arg Arg Ile Arg Ala Lys Asn Arg
 85 90 95
 Ser Ser Phe Ser Ser Ser Glu Glu Glu Ser Ser Ala His Ile Pro Val
 100 105 110
 Asp Thr Ser Glu Pro Ala Pro Val Ser Ile Ala Asp Pro Glu Pro Glu
 115 120 125
 Leu Glu Val Val Asp Glu Val Cys Asp Glu Ser Pro Glu Val His Pro
 130 135 140
 Val Ala Glu Val Leu Pro Glu Gln Pro Val Leu Pro Glu Thr Pro Pro
 145 150 155 160
 Gln Glu Lys Glu Leu Glu Pro Lys Pro Val Lys Pro Ala Glu Pro Lys
 165 170 175
 Ser Val Val Met Ile Lys Ser Lys Phe Gly Pro Thr Gly Lys His Ile
 180 185 190
 Asn His Leu Leu Ala Lys Thr Phe Lys Ala Pro Ala Lys Glu Glu Lys
 195 200 205
 Val Val Ala Gly Ser Lys Ser Thr Lys Pro Val Ala Ser Asp Lys Thr
 210 215 220
 Gly Lys Pro Gly Thr Ser Glu Gly Gly Glu Gln Asn Asn Arg Glu Lys
 225 230 235 240
 Gln Phe Asn Pro Ala Asn Arg Ser Pro Ala Ser Gly Pro Lys Arg Asp
 245 250 255
 Ala Gly Lys Lys Asn Leu Thr Asp Phe Arg Asp Arg Ser Lys Lys Ser
 260 265 270
 Asp Glu Ser Leu Lys Ala Phe Thr Gly Arg Asp Arg Tyr Gly Leu Asn
 275 280 285
 Glu Gly Gly Glu Glu Asp Arg Trp Arg Lys Lys Arg Val Tyr Lys Pro
 290 295 300
 Lys Lys His Tyr Asp Glu Ala Ser Ile Gln Arg Pro Thr His Ile Lys
 305 310 315 320
 Ile Ser Leu Pro Ile Thr Val Lys Asp Leu Ala Thr Glu Met Lys Leu

Ser His Ala Glu Pro Leu Ile Lys Ser Leu Gly Val Arg Glu Leu
 35 40 45
 Phe Thr Val Ile Tyr His Ala Ile Asp Ala Ile Lys Glu Ile Met Thr
 50 55 60
 Ser Leu Leu Asp Pro Ile Ala Glu Glu Lys Asp Glu Gly Ser Ala Glu
 65 70 75 80
 Ile Lys Glu Ile Phe Arg Ser Ser Gln Val Gly Ser Ile Tyr Gly Cys
 85 90 95
 Ile Val Thr Glu Gly Ile Met Thr Arg Asn His Lys Val Arg Val Leu
 100 105 110
 Arg Asn Lys Glu Ile Leu Trp Lys Gly Thr Leu Ser Ser Leu Lys Arg
 115 120 125
 Val Lys Glu Asp Val Lys Glu Val Arg Lys Gly Leu Glu Cys Gly Ile
 130 135 140
 Leu Leu Glu Gly Tyr Gln Gln Ala Gln Ile Gly Asp Val Leu Gln Cys
 145 150 155 160
 Tyr Glu Val Ile Tyr His Pro Gln Lys Leu
 165 170

<210>337

<211>141

<212>PRT

<213>Chlamydia pneumoniae

<400>337

Val Met Ser Tyr Asn Val Met Lys Leu Ser Ile Ile His Lys Asn Tyr
 1 5 10 15
 Asn Leu Lys Tyr Cys Met Thr Glu Asn Arg Arg Ile Lys Arg Val Asn
 20 25 30
 Ala Leu Leu Gln Glu Ala Ile Ala Lys Val Ile Leu Lys Asp Val Lys
 35 40 45
 His Pro Lys Ile Ser Asn Leu Trp Ile Thr Val Thr Arg Val Ser Leu
 50 55 60
 Ser Lys Asp Leu His Ser Ala Arg Val Tyr Val Ser Val Met Pro His
 65 70 75 80
 Glu Asn Thr Lys Glu Glu Ala Leu Glu Ala Leu Lys Val Ser Ala Gly
 85 90 95
 Phe Ile Ala His Arg Ala Ser Lys Asn Val Val Leu Lys Tyr Phe Pro
 100 105 110
 Glu Leu His Phe Tyr Leu Asp Asp Ile Phe Ser Pro Gln Asp Tyr Ile
 115 120 125
 Glu Asn Leu Leu Trp Gln Ile Gln Glu Lys Glu Lys Ser
 130 135 140

<210>338

<211>243

<212>PRT

<213>Chlamydia pneumoniae

<400>338

Leu Asn Thr Ile Lys Asp Met Thr Met Asp Leu Ala Val Glu Leu Lys
 1 5 10 15
 Glu Gly Ile Leu Leu Val Asp Lys Pro Gln Gly Arg Thr Ser Phe Ser
 20 25 30
 Leu Ile Arg Ala Leu Thr Lys Leu Ile Gly Val Lys Lys Ile Gly His
 35 40 45
 Ala Gly Thr Leu Asp Pro Phe Ala Thr Gly Val Met Val Met Leu Ile
 50 55 60
 Gly Arg Lys Phe Thr Arg Leu Ser Asp Ile Leu Leu Phe Glu Asp Lys
 65 70 75 80
 Glu Tyr Glu Ala Ile Ala His Leu Gly Thr Thr Thr Asp Ser Tyr Asp
 85 90 95
 Cys Asp Gly Lys Val Val Gly Arg Ser Lys Lys Ile Pro Ser Leu Glu
 100 105 110
 Glu Val Leu Ser Ala Ala Glu Tyr Phe Gln Gly Glu Ile Gln Gln Leu
 115 120 125
 Pro Pro Met Phe Ser Ala Lys Lys Val Gln Gly Lys Lys Leu Tyr Glu
 130 135 140

Tyr Ala Arg Lys Gln Leu Ser Ile Glu Arg His His Ser Thr Val Gln
 145 150 155 160
 Val His Leu Gln Ile Thr Lys Tyr Glu Tyr Pro Leu Leu His Phe Val
 155 170 175
 Val Ser Cys Ser Lys Gly Thr Tyr Ile Arg Ser Ile Ala His Glu Leu
 180 185 190
 Gly Thr Met Leu Gly Cys Gly Ala Tyr Leu Glu Gln Leu Arg Arg Leu
 195 200 205
 Arg Ser Gly Arg Phe Ser Ile Asp Glu Cys Ile Asp Gly Asn Leu Leu
 210 215 220
 Asp His Pro Asp Phe Asp Ile Ser Pro Tyr Leu Arg Asp Ala His Gly
 225 230 235 240
 Asn Ser Leu

<210>239

<211>308

<212>PRT

<213>Chlamydia pneumoniae

<400>339

Met Pro Met Glu Ile Ala Tyr Ser Leu Thr Ser Ser Phe Ser Val Asp
 1 5 10 15
 Ser Val Thr Val Gly Phe Phe Asp Gly Cys His Leu Gly His Ser Asn
 20 25 30
 Leu Leu Ser Ile Leu Thr Ser Tyr Ser Gly Ser Ser Gly Val Ile Thr
 35 40 45
 Phe Asp Ser His Pro Gln Thr Val Leu Ser Leu Asn His Thr Lys Leu
 50 55 60
 Ile Asn Thr Lys Glu Glu Arg Leu Gln Leu Leu Gln Thr Phe Pro Ile
 65 70 75 80
 Asp Trp Leu Gly Val Leu Thr Phe Asp Leu Asn Phe Ala Asn Gln Ser
 85 90 95
 Ala Glu Glu Phe Leu Thr Leu Leu His Arg Asn Leu Lys Cys Lys Arg
 100 105 110
 Leu Ile Leu Gly Tyr Asp Ser Cys Ile Gly Lys Glu Gln Gln Ser Asn
 115 120 125
 Thr Glu Ala Leu Asp Thr Ile Gly Lys Pro Leu Gly Ile Glu Val Ile
 130 135 140
 Lys Ile Pro Pro Tyr Arg Met Asp Asn Ile Val Val Ser Ser Lys Ala
 145 150 155 160
 Ile Arg Gln Phe Leu Ser Ala Gly Asn Leu Glu Cys Ala His Arg Phe
 165 170 175
 Leu Gly His Pro Tyr Ala Ile Ser Gly Lys Ile Thr Glu Gly Ser Gly
 180 185 190
 Ile Gly Gly Ser Leu Gly Phe Ala Thr Ile Asn Leu Pro Arg Glu Glu
 195 200 205
 Ser Leu Ile Pro Leu Gly Val Tyr Ala Cys Glu Ile Arg Tyr Asp Ser
 210 215 220
 Thr Thr Cys Gln Gly Val Met Asn Leu Gly Thr Ala Pro Thr Phe Gly
 225 230 235 240
 Arg Glu Ser Leu Tyr Ala Glu Ala His Ile Phe Ser Phe Ala Glu Asn
 245 250 255
 Leu Tyr Gly Lys Glu Val Ser Ile Ile Pro Arg Lys Phe Leu Arg Glu
 260 265 270
 Glu Lys Lys Phe Gln Ser Lys Glu Thr Leu Ile Arg Ala Ile Glu Lys
 275 280 285
 Asp Ile Leu Asp Ala Gln Asp Trp Phe Ala Lys Gly Ser Phe Asn Tyr
 290 295 300
 Glu Gly Thr Ala
 305

<210>340

<211>198

<212>PRT

<213>Chlamydia pneumoniae

<400>340

Tyr Asn Tyr Cys Ser Leu Arg Lys Gly Leu Pro Leu Arg Tyr Leu Glu
 1 5 10 15
 Leu Thr Pro Glu Gln Ile Val Ala Leu Lys Pro Tyr Pro Phe Leu Thr
 20 25 30
 Met Lys Pro Met Phe Tyr Ile Ala Asn Val Asp Glu Ser Ser Leu Pro
 35 40 45
 Asp Met Asp Asn Asp Tyr Val Ala Ala Val Arg Glu Val Ala Ala Lys
 50 55 60
 Glu Asn Ser Lys Val Val Pro Ile Cys Val Arg Ile Glu Glu Glu Ile
 65 70 75 80
 Val Ser Leu Pro Ile Glu Glu Arg Leu Glu Phe Leu Met Ser Leu Gly
 85 90 95
 Leu Glu Lys Ser Gly Leu His Arg Leu Val Arg Ala Ala Tyr Asp Thr
 100 105 110
 Leu Gly Leu Ile Ser Tyr Phe Thr Thr Gly Pro Gln Glu Ser Arg Ala
 115 120 125
 Trp Thr Val Val Arg Gly Ser Ser Ala Trp Glu Ala Ala Gly Glu Ile
 130 135 140
 His Thr Asp Ile Gln Lys Gly Phe Ile Arg Ala Glu Val Ile Thr Phe
 145 150 155 160
 Glu Asp Met Ile Glu Cys Gln Gly Arg Ala Ala Ala Arg Glu Leu Gly
 165 170 175
 Lys Leu His Ile Glu Gly Arg Asp Tyr Ile Val Gln Asp Gly Asp Thr
 180 185 190
 Met Leu Phe Leu His Asn
 195

<210>341

<211>180

<212>PRT

<213>Chlamydia pneumoniae

<400>341

Met Ser His Thr Glu Cys Gly Ile Val Gly Leu Pro Asn Val Gly Lys
 1 5 10 15
 Ser Gly Leu Phe Asn Ala Leu Thr Gly Ala Gln Val Ala Ser Cys Asn
 20 25 30
 Tyr Pro Phe Cys Thr Ile Asp Pro Asn Val Gly Ile Val Pro Val Ile
 35 40 45
 Asp Glu Arg Leu Glu Ala Leu Ala Lys Ile Ser Asn Ser Gln Lys Ile
 50 55 60
 Ile Tyr Ala Asp Met Lys Phe Val Asp Ile Ala Gly Leu Val Lys Gly
 65 70 75 80
 Ala Ser Asp Gly Ala Gly Leu Gly Asn Arg Phe Leu Ser His Ile Arg
 85 90 95
 Glu Thr His Ala Ile Ala His Val Val Arg Cys Phe Asp Asp Pro Asp
 100 105 110
 Val Thr His Val Ser Gly Lys Val Asn Pro Val Glu Asp Ile Glu Val
 115 120 125
 Ile Asn Leu Glu Leu Ile Phe Ser Asp Phe Ser Ser Ala Lys Asn Ile
 130 135 140
 His Ser Lys Leu Glu Lys Leu Ala Lys Gly Lys Arg Glu Val Gly Ala
 145 150 155 160
 Leu Leu Pro Leu Phe Asp Thr Ile Ile Ala His Leu Glu Lys Gly Cys
 165 170 175
 Arg Tyr Val Leu
 180

<210>342

<211>360

<212>PRT

<213>Chlamydia pneumoniae

<400>342

Met Gly Glu Lys Thr Glu Lys Ala Thr Pro Lys Arg Leu Arg Asp Ala
 1 5 10 15
 Arg Lys Lys Gly Gln Val Ala Lys Ser Gln Asp Phe Pro Ser Ala Val
 20 25 30

Thr	Phe	Ile	Val	Ser	Met	Phe	Thr	Ala	Phe	Ser	Leu	Thr	Phe	Phe	
		35					40					45			
Phe	Lys	His	Leu	Gly	Gly	Phe	Leu	Val	Ser	Met	Leu	Ser	Gln	Ala	Pro
	50					55					60				
Thr	Arg	His	Asp	Pro	Val	Ile	Thr	Leu	Phe	Tyr	Leu	Lys	Asn	Cys	Leu
	65				70					75				80	
Met	Leu	Ile	Leu	Thr	Ala	Ser	Leu	Pro	Leu	Leu	Gly	Ala	Val	Ala	Val
				95					90					95	
Val	Gly	Val	Ile	Val	Gly	Phe	Leu	Ile	Val	Gly	Pro	Thr	Phe	Ser	Thr
		100						105					110		
Glu	Val	Phe	Lys	Pro	Asp	Ile	Lys	Lys	Phe	Asn	Pro	Ile	Glu	Asn	Ile
		115					130					125			
Lys	Gln	Lys	Phe	Lys	Ile	Lys	Thr	Leu	Ile	Glu	Leu	Ile	Lys	Ser	Ile
	130					135					140				
Leu	Lys	Ile	Phe	Gly	Ala	Ala	Leu	Ile	Leu	Tyr	Ile	Thr	Leu	Lys	Ser
	145				150					155				160	
Lys	Val	Ser	Leu	Ile	Ile	Glu	Thr	Ala	Gly	Val	Ser	Pro	Ile	Ile	Thr
				165					170					175	
Ala	Gln	Ile	Phe	Lys	Glu	Ile	Phe	Tyr	Lys	Ala	Val	Thr	Ser	Ile	Gly
		180						185					190		
Ile	Phe	Phe	Leu	Ile	Val	Ala	Ile	Leu	Asp	Leu	Val	Tyr	Gln	Arg	His
	195						200					205			
Asn	Phe	Ala	Lys	Glu	Leu	Lys	Met	Glu	Lys	Phe	Glu	Val	Lys	Gln	Glu
	210					215					220				
Phe	Lys	Asp	Thr	Glu	Gly	Asn	Pro	Glu	Ile	Lys	Gly	Arg	Arg	Arg	Gln
	225					230				235					240
Ile	Ala	Gln	Glu	Ile	Ala	Tyr	Glu	Asp	Ser	Ser	Ser	Gln	Val	Lys	His
				245					250					255	
Ala	Ser	Thr	Val	Val	Ser	Asn	Pro	Lys	Asp	Ile	Ala	Val	Ala	Ile	Gly
		260						265					270		
Tyr	Met	Pro	Glu	Lys	Tyr	Lys	Ala	Pro	Tyr	Ile	Ile	Ala	Met	Gly	Ile
	275						280					285			
Asn	Leu	Arg	Ala	Lys	Arg	Ile	Leu	Asp	Glu	Ala	Glu	Lys	Tyr	Gly	Ile
	290					295					300				
Pro	Ile	Met	Arg	Asn	Val	Pro	Leu	Ala	His	Gln	Leu	Leu	Asp	Glu	Gly
	305				310					315				320	
Lys	Glu	Leu	Lys	Phe	Ile	Pro	Glu	Ser	Thr	Tyr	Glu	Ala	Ile	Gly	Glu
				325					330					335	
Ile	Leu	Leu	Tyr	Ile	Thr	Ser	Leu	Asn	Ala	Gln	Asn	Pro	Asn	Asn	Lys
		340					345						350		
Asn	Thr	Asn	Gln	Pro	Asp	His	Leu								
	355						360								

<210>343

<211>606

<212>PRT

<313>Chlamydia pneumoniae

<400>343

Ser	Val	Cys	Gly	Ser	Cys	His	Ser	Gly	Phe	Gly	Asp	Phe	Val	Val	Gly
1				5					10					15	
Gly	Asn	Tyr	Val	Val	Gly	Phe	Ile	Ile	Phe	Leu	Ile	Ile	Thr	Ile	Ile
			20					25					30		
Gln	Phe	Ile	Val	Val	Thr	Lys	Gly	Ala	Glu	Arg	Val	Ala	Glu	Val	Ala
		35					40					45			
Ala	Arg	Phe	Arg	Leu	Asp	Ala	Met	Pro	Gly	Lys	Gln	Met	Ala	Ile	Asp
	50					55					60				
Ala	Asp	Leu	Arg	Ala	Gly	Met	Ile	Asp	Ala	Thr	Gln	Ala	Arg	Asp	Lys
	65				70					75				80	
Arg	Ala	Gln	Ile	Gln	Lys	Glu	Ser	Glu	Leu	Tyr	Gly	Ala	Met	Asp	Gly
			85					90					95		
Ala	Met	Lys	Phe	Ile	Lys	Gly	Asp	Val	Ile	Ala	Gly	Ile	Val	Ile	Ser
		100					105						110		
Leu	Ile	Asn	Ile	Val	Gly	Gly	Leu	Thr	Ile	Gly	Val	Ala	Met	His	Gly
	115						120					125			
Met	Asp	Leu	Ala	Gln	Ala	Ala	His	Val	Tyr	Thr	Leu	Leu	Ser	Ile	Gly

130 135 140
 Asp Gly Leu Val Ser Gln Ile Pro Ser Leu Leu Ile Ala Leu Thr Ala
 145 150 155 160
 Gly Ile Val Thr Thr Arg Val Ser Ser Asp Lys Asn Thr Asn Leu Gly
 165 170 175
 Lys Glu Ile Ser Thr Gln Leu Val Lys Glu Pro Arg Ala Leu Leu Leu
 180 185 190
 Ala Gly Ala Ala Thr Leu Gly Val Gly Phe Phe Lys Gly Phe Pro Leu
 195 200 205
 Trp Ser Phe Ser Ile Leu Ala Leu Ile Phe Val Ala Leu Gly Ile Leu
 210 215 220
 Leu Leu Thr Lys Lys Ser Ala Ala Gly Lys Lys Gly Gly Gly Ser Gly
 225 230 235 240
 Ala Ser Thr Thr Val Gly Ala Ala Gly Asp Gly Ala Ala Thr Val Gly
 245 250 255
 Asp Asn Pro Asp Asp Tyr Ser Leu Thr Leu Pro Val Ile Leu Glu Leu
 260 265 270
 Gly Lys Asp Leu Ser Lys Leu Ile Gln His Lys Thr Lys Ser Gly Gln
 275 280 285
 Ser Phe Val Asp Asp Met Ile Pro Lys Met Arg Gln Ala Leu Tyr Gln
 290 295 300
 Asp Ile Gly Ile Arg Tyr Pro Gly Ile His Val Arg Thr Asp Ser Pro
 305 310 315 320
 Ser Leu Glu Gly Tyr Asp Tyr Met Ile Leu Leu Asn Glu Val Pro Tyr
 325 330 335
 Val Arg Gly Lys Ile Pro Pro His His Val Leu Thr Asn Glu Val Glu
 340 345 350
 Asp Asn Leu Ser Arg Tyr Asn Leu Pro Phe Ile Thr Tyr Lys Asn Ala
 355 360 365
 Ala Gly Leu Pro Ser Ala Trp Val Ser Glu Asp Ala Lys Ala Ile Leu
 370 375 380
 Glu Lys Ala Ala Ile Lys Tyr Trp Thr Pro Leu Glu Val Ile Ile Leu
 385 390 395 400
 His Leu Ser Tyr Phe Phe His Lys Ser Ser Gln Glu Phe Leu Gly Ile
 405 410 415
 Gln Glu Val Arg Ser Met Ile Glu Phe Met Glu Arg Ser Phe Pro Asp
 420 425 430
 Leu Val Lys Glu Val Thr Arg Leu Ile Pro Leu Gln Lys Leu Thr Glu
 435 440 445
 Ile Phe Lys Arg Leu Val Gln Glu Gln Ile Ser Ile Lys Asp Leu Arg
 450 455 460
 Thr Ile Leu Glu Ser Leu Ser Glu Trp Ala Gln Thr Glu Lys Asp Thr
 465 470 475 480
 Val Leu Leu Thr Glu Tyr Val Arg Ser Ser Leu Lys Leu Tyr Ile Ser
 485 490 495
 Phe Lys Phe Ser Gln Gly Gln Ser Ala Ile Ser Val Tyr Leu Leu Asp
 500 505 510
 Pro Glu Ile Glu Glu Met Ile Arg Gly Ala Ile Lys Gln Thr Ser Ala
 515 520 525
 Gly Ser Tyr Leu Ala Leu Asp Pro Asp Ser Val Asn Leu Ile Leu Lys
 530 535 540
 Ser Met Arg Asn Thr Ile Thr Pro Thr Pro Ala Gly Gly Gln Pro Pro
 545 550 555 560
 Val Leu Leu Thr Ala Ile Asp Val Arg Arg Tyr Val Arg Lys Leu Ile
 565 570 575
 Glu Thr Glu Phe Pro Asp Ile Ala Val Ile Ser Tyr Gln Glu Ile Leu
 580 585 590
 Pro Glu Ile Arg Ile Gln Pro Leu Gly Arg Ile Gln Ile Phe
 595 600 605

<210>344

<211>215

<212>PRT

<213>Chlamydia pneumoniae

<400>344

Tyr	Val	Val	Ala	Asp	Arg	Arg	His	Met	Ala	Ala	Ser	Gly	Thr	Gly	1	5	10	15
Gly	Leu	Gly	Gly	Thr	Gln	Gly	Val	Asn	Leu	Ala	Ala	Val	Glu	Ala	Ala	20	25	30
Ala	Ala	Lys	Ala	Asp	Ala	Ala	Glu	Val	Val	Ala	Ser	Gln	Glu	Gly	Ser	35	40	45
Glu	Met	Asn	Met	Ile	Gln	Gln	Ser	Gln	Asp	Leu	Thr	Asn	Pro	Ala	Ala	50	55	60
Ala	Thr	Arg	Thr	Lys	Lys	Lys	Glu	Glu	Lys	Phe	Gln	Thr	Leu	Glu	Ser	65	70	75
Arg	Lys	Lys	Gly	Glu	Ala	Gly	Lys	Ala	Glu	Lys	Lys	Ser	Glu	Ser	Thr	85	90	95
Glu	Glu	Lys	Pro	Asp	Thr	Asp	Leu	Ala	Asp	Lys	Tyr	Ala	Ser	Gly	Asn	100	105	110
Ser	Glu	Ile	Ser	Gly	Gln	Glu	Leu	Arg	Gly	Leu	Arg	Asp	Ala	Ile	Gly	115	120	125
Asp	Asp	Ala	Ser	Pro	Glu	Asp	Ile	Leu	Ala	Leu	Val	Gln	Glu	Lys	Ile	130	135	140
Lys	Asp	Pro	Ala	Leu	Gln	Ser	Thr	Ala	Leu	Asp	Tyr	Leu	Val	Gln	Thr	145	150	155
Thr	Pro	Pro	Ser	Gln	Gly	Lys	Leu	Lys	Glu	Ala	Leu	Ile	Gln	Ala	Arg	165	170	175
Asn	Thr	His	Thr	Glu	Gln	Phe	Gly	Arg	Thr	Ala	Ile	Gly	Ala	Lys	Asn	180	185	190
Ile	Leu	Phe	Ala	Ser	Gln	Glu	Tyr	Ala	Asp	Gln	Leu	Asn	Val	Ser	Pro	195	200	205
Ser	Gly	Phe	Ala	Leu	Cys	Thr										210	215	

<210>345

<211>240

<212>PRT

<213>Chlamydia pneumoniae

<400>345

Ile	Lys	Arg	Ser	Ala	Tyr	Pro	Ser	Lys	Glu	Tyr	Ser	Tyr	Gly	Ala	Ile	1	5	10	15
Arg	Thr	Asn	Cys	Tyr	Trp	Cys	Glu	Lys	His	Leu	Ile	Cys	Leu	Ser	Arg	20	25	30	
Ile	Cys	Arg	Pro	Thr	Glu	Cys	Phe	Ser	Phe	Arg	Asp	Arg	Ser	Leu	Tyr	35	40	45	
Leu	Glu	Val	Thr	Gly	Asp	Thr	His	Thr	Cys	Asp	Gln	Leu	Leu	Ser	Met	50	55	60	
Leu	Gln	Asp	Arg	Tyr	Thr	Tyr	Gln	Asp	Met	Ala	Ile	Val	Ser	Ser	Phe	65	70	75	
Leu	Met	Lys	Gly	Met	Ala	Thr	Glu	Leu	Lys	Arg	Gln	Gly	Pro	Tyr	Val	85	90	95	
Pro	Ser	Ala	Gln	Leu	Gln	Val	Leu	Met	Thr	Glu	Thr	Arg	Asn	Leu	Gln	100	105	110	
Ala	Val	Leu	Thr	Ser	Tyr	Asp	Tyr	Phe	Glu	Ser	Arg	Val	Pro	Ile	Leu	115	120	125	
Leu	Asp	Ser	Leu	Lys	Ala	Glu	Gly	Ile	Gln	Thr	Pro	Ser	Asp	Leu	Asn	130	135	140	
Phe	Val	Lys	Ile	Ala	Glu	Ser	Tyr	His	Lys	Ile	Ile	Asn	Asp	Lys	Phe	145	150	155	
Pro	Thr	Ala	Ser	Lys	Val	Glu	Arg	Glu	Val	Arg	Asn	Leu	Ile	Gly	Asp	165	170	175	
Asp	Val	Asp	Ser	Val	Thr	Gly	Val	Leu	Asn	Leu	Phe	Phe	Ser	Ala	Leu	180	185	190	
Arg	Gln	Thr	Ser	Ser	Arg	Leu	Phe	Ser	Ser	Ala	Asp	Lys	Arg	Gln	Gln	195	200	205	
Leu	Gly	Ala	Met	Ile	Ala	Asn	Ala	Leu	Asp	Ala	Val	Asn	Ile	Asn	Asn	210	215	220	
Glu	Asp	Tyr	Pro	Lys	Ala	Ser	Asp	Phe	Pro	Lys	Pro	Tyr	Pro	Trp	Ser	225	230	235	240

<210>345

<211>151

<212>PRT

<213>Chlamydia pneumoniae

<400>346

Lys Arg Ile Ala Met Gln Asn Gln Tyr Glu Gln Leu Leu Glu Ser Leu
 1 5 10 15
 Ala Pro Leu Leu Asn Thr Thr Leu Ala Pro Asp Lys Asn Asn Ser Cys
 20 25 30
 Leu Ile Arg Phe Ser Asp Thr His Val Pro Val Gln Ile Glu Glu Asp
 35 40 45
 Gly Asn Ser Gly Asp Leu Ala Val Ser Thr Leu Leu Gly Thr Leu Pro
 50 55 60
 Glu Asn Val Phe Arg Glu Arg Ile Phe Lys Ala Ala Leu Ser Val Asn
 65 70 75 80
 Gly Ser Phe Gln Ser Ser Ile Lys Gly Ile Leu Gly Tyr Gly Glu Val
 85 90 95
 Thr Gln Gln Leu Tyr Leu Ser Asp Ile Leu Ser Met Asn Tyr Leu Asn
 100 105 110
 Gly Glu Lys Leu Phe Glu Tyr Leu Lys Leu Phe Ser Leu His Ala Lys
 115 120 125
 Ile Trp Met Glu Ser Leu Arg Thr Gly Asn Leu Pro Asp Leu His Val
 130 135 140
 Leu Gly Ile Tyr Tyr Val Ala
 145 150

<210>347

<211>526

<212>PRT

<213>Chlamydia pneumoniae

<400>347

Val Asn Val Leu Lys Tyr Thr Lys His Ser Pro Ser Ala His Ala Trp
 1 5 10 15
 Lys Leu Ile Gly Thr Ser Pro Lys His Gly Ile Tyr Leu Pro Leu Phe
 20 25 30
 Ser Ile His Thr Lys Asn Ser Cys Gly Ile Gly Glu Phe Leu Asp Leu
 35 40 45
 Ile Pro Leu Ile Ser Trp Cys Gln Lys Gln Gly Phe Ser Val Ile Gln
 50 55 60
 Leu Leu Pro Leu Asn Asp Thr Gly Glu Asp Thr Ser Pro Tyr Asn Ser
 65 70 75 80
 Ile Ser Ser Val Ala Leu Asn Pro Leu Phe Leu Ser Leu Ser Ser Leu
 85 90 95
 Pro Asn Ile Asp Thr Ile Pro Glu Val Ala Lys Lys Leu Gln Asp Met
 100 105 110
 His Glu Leu Cys Ser Thr Pro Ser Val Ser Tyr Thr Gln Val Lys Glu
 115 120 125
 Lys Lys Trp Ala Phe Leu Arg Glu Tyr Tyr Gln Lys Cys Cys Lys Ser
 130 135 140
 Ser Leu Glu Gly Asn Ser Asn Phe Ser Glu Phe Leu Glu Ser Glu Arg
 145 150 155 160
 Tyr Trp Leu Tyr Pro Tyr Gly Thr Phe Arg Ala Ile Lys His His Met
 165 170 175
 His Gly Glu Pro Ile Asn Asn Trp Pro Lys Ser Leu Thr Asp Gln Glu
 180 185 190
 Asn Phe Pro Asp Leu Thr Lys Lys Phe His Asp Glu Val Leu Phe Phe
 195 200 205
 Ser Tyr Leu Gln Phe Leu Cys Tyr Gln Gln Leu Cys Glu Val Lys Ala
 210 215 220
 Tyr Ala Asp Gln His His Val Leu Leu Lys Gly Asp Leu Pro Ile Leu
 225 230 235 240
 Ile Ser Lys Asp Ser Cys Asp Val Trp Tyr Phe Arg Asp Tyr Phe Ser
 245 250 255
 Ser Ser Arg Ser Val Gly Ala Pro Pro Asp Leu Tyr Asn Ser Glu Gly
 260 265 270
 Gln Asn Trp His Leu Pro Ile Tyr Asn Phe Ser Gln Leu Ala Lys Asp

275
 Asp Tyr Ile Trp Trp Lys Glu Arg Leu Arg Tyr Ala Gln Asn Phe Tyr
 290 295 300
 Ser Val Tyr Arg Leu Asp His Ile Ile Gly Phe Phe Arg Leu Trp Ile
 305 310 315 320
 Trp Asp Ser Ser Gly Arg Gly Arg Phe Ile Pro Asp Asn Pro Lys Asp
 325 330 335
 Tyr Ile Lys Gln Gly Thr Glu Ile Leu Ser Thr Met Leu Gly Ala Ser
 340 345 350
 Ser Met Leu Pro Ile Gly Glu Asp Leu Gly Ile Ile Pro Gln Asp Val
 355 360 365
 Lys Thr Thr Leu Thr His Leu Gly Ile Cys Gly Thr Arg Ile Pro Arg
 370 375 380
 Trp Glu Arg Asn Trp Glu Ser Asp Ser Ala Phe Ile Pro Leu Lys Asp
 385 390 395 400
 Tyr Asn Pro Leu Ser Val Thr Thr Leu Ser Thr His Asp Ser Asp Thr
 405 410 415
 Phe Ala Gln Trp Trp Leu Asn Ser Pro Lys Glu Ala Lys Gln Phe Ala
 420 425 430
 Lys Phe Leu His Leu Pro Phe Gln Lys Thr Leu Thr Thr Glu Thr Gln
 435 440 445
 Ile Asp Ile Leu Lys Leu Ser His Glu Ser Ala Ser Ile Phe His Ile
 450 455 460
 Asn Leu Phe Asn Asp Tyr Leu Ala Leu Cys Pro Asp Leu Val Ser Lys
 465 470 475 480
 Asn Leu Gln Arg Glu Arg Ile Asn Thr Pro Gly Thr Ile Ser Lys Lys
 485 490 495
 Asn Trp Ser Tyr Arg Val Arg Pro Ser Leu Glu Glu Leu Ala Ile His
 500 505 510
 Lys Lys Phe Asn Gly Tyr Ile Glu Lys Ile Leu Thr Gly Leu
 515 520 525

<210>348

<211>89

<212>PRT

<213>Chlamydia pneumoniae

<400>348

Met Ser Arg Lys Cys Pro Leu Thr Gly Lys Arg Pro Arg Arg Gly Tyr
 1 5 10 15
 Ser Tyr Thr Leu Arg Gly Ile Ala Lys Lys Lys Gly Ile Gly Leu
 20 25 30
 Lys Val Thr Gly Lys Thr Lys Arg Phe Phe Pro Asn Met Leu Thr
 35 40 45
 Lys Arg Leu Trp Ser Thr Glu Glu Asn Arg Phe Leu Lys Leu Lys Ile
 50 55 60
 Ser Ala Ser Ala Leu Arg His Ile Asp Lys Leu Gly Leu Glu Lys Val
 65 70 75 80
 Leu Glu Arg Ala Lys Ser Lys Asn Phe
 85

<210>349

<211>564

<212>PRT

<213>Chlamydia pneumoniae

<400>349

Met Ser Phe Leu Arg Arg His Ile Ser Leu Phe Arg Ser Gln Lys Gln
 1 5 10 15
 Leu Ile Asp Val Phe Ala Pro Val Ser Pro Asn Leu Glu Leu Ala Glu
 20 25 30
 Ile His Arg Arg Val Ile Glu Asp Gln Gly Pro Ala Leu Leu Phe His
 35 40 45
 Asn Val Ile Gly Ser Ser Phe Pro Val Leu Thr Asn Leu Phe Gly Thr
 50 55 60
 Lys His Arg Val Asp Gln Leu Phe Ser Gln Ala Pro Asp Asn Leu Ile
 65 70 75 80
 Ala Arg Val Ala His Leu Ile Ser Ser Thr Pro Lys Leu Ser Ser Leu

90 95
 Trp Lys Ser Arg Asp Leu Leu Lys Arg Ile Ser Ser Leu Gly Leu Lys
 100 105 110
 Lys Ala Arg Phe Arg Arg Phe Pro Phe Val Ser Met Ser Ser Val Asn
 115 120 125
 Leu Asp His Leu Pro Leu Leu Thr Ser Trp Pro Glu Asp Gly Gly Ala
 130 135 140
 Phe Leu Thr Leu Pro Leu Val Tyr Thr Glu Ser Pro Thr Leu Thr Thr
 145 150 155 160
 Pro Asn Leu Gly Met Tyr Arg Val Gln Arg Phe Asn Gln Asn Thr Met
 165 170 175
 Gly Leu His Phe Gln Ile Gln Lys Gly Gly Gly Met His Leu Tyr Glu
 180 185 190
 Ala Glu Gln Lys Lys Gln Asn Leu Pro Val Ser Val Phe Leu Ser Gly
 195 200 205
 Asn Pro Phe Leu Thr Leu Ser Ala Ile Ala Pro Leu Pro Glu Asn Val
 210 215 220
 Ser Glu Leu Leu Phe Ala Thr Phe Leu Gln Gly Ala Lys Leu Leu Tyr
 225 230 235 240
 Lys Lys Thr Asn Asp His Pro His Pro Leu Tyr Asp Ala Glu Phe
 245 250 255
 Ile Leu Val Gly Glu Ser Pro Ala Gly Lys Arg Arg Pro Glu Gly Pro
 260 265 270
 Phe Gly Asp His Phe Gly Tyr Tyr Ser Leu Gln His Asp Phe Pro Glu
 275 280 285
 Phe His Cys His Lys Ile Tyr His Arg Lys Asp Ala Ile Tyr Pro Ala
 290 295 300
 Thr Val Val Gly Lys Pro Tyr Gln Glu Asp Phe Tyr Ile Gly Asn Lys
 305 310 315 320
 Leu Gln Glu Tyr Leu Ser Pro Leu Phe Pro Leu Val Met Pro Gly Val
 325 330 335
 Arg Arg Leu Lys Ser Tyr Gly Glu Ser Gly Phe His Ala Leu Thr Ala
 340 345 350
 Ala Val Val Lys Glu Arg Tyr Trp Arg Glu Ser Leu Thr Thr Ala Leu
 355 360 365
 Arg Ile Leu Gly Glu Gly Gln Leu Ser Leu Thr Lys Phe Leu Met Val
 370 375 380
 Thr Asp Gln Glu Val Pro Leu Asp Arg Phe Ser Val Val Leu Glu Thr
 385 390 395 400
 Ile Leu Glu Arg Leu Gln Pro Asp Arg Asp Leu Ile Ile Phe Ser Glu
 405 410 415
 Thr Ala Asn Asp Thr Leu Asp Tyr Thr Gly Pro Ser Leu Asn Lys Gly
 420 425 430
 Ser Lys Gly Ile Phe Met Gly Ile Gly Lys Ala Ile Arg Asp Leu Pro
 435 440 445
 His Gly Tyr Gln Gly Gly Lys Ile His Gly Val Gln Asp Ile Ala Pro
 450 455 460
 Phe Cys Arg Gly Cys Leu Val Leu Glu Thr Ser Leu Glu Asp Arg Cys
 465 470 475 480
 Ile Lys Ser Leu Leu His His Pro Asp Leu Lys Ser Trp Pro Leu Ile
 485 490 495
 Ile Leu Ala Asp Asn Leu Arg Glu Thr Ile Gln Ser Glu Lys Asp Phe
 500 505 510
 Leu Trp Arg Thr Phe Thr Arg Cys Ala Pro Ala Asn Asp Leu His Ala
 515 520 525
 Leu His Ser His Phe Ala Thr His Arg Pro Asn Tyr Asn Phe Pro Phe
 530 535 540
 Val Ile Asp Ala Leu Met Lys Pro Ser Tyr Pro Lys Glu Val Glu Val
 545 550 555 560
 Asp Pro Ser Thr Lys Gln Lys Val Ser Glu Arg Trp His Ala Tyr Phe
 565 570 575
 Pro Asn Lys Glu Thr Phe Tyr Ile
 580
 <210>350.

<211>354
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>350

Lys	Met	Asn	Lys	Arg	Gln	Lys	Asp	Lys	Leu	Lys	Ile	Cys	Val	Ile	Ile
1				5					10					15	
Ser	Thr	Leu	Ile	Leu	Val	Gly	Ile	Phe	Ala	Arg	Ala	Pro	Arg	Gly	Asp
		20						25					30		
Thr	Phe	Lys	Thr	Phe	Leu	Lys	Ser	Glu	Glu	Ala	Ile	Ile	Tyr	Ser	Asn
	35						40					45			
Gln	Cys	Asn	Glu	Asp	Met	Arg	Lys	Ile	Leu	Cys	Asp	Ala	Ile	Glu	His
	50					55					60				
Ala	Asp	Glu	Glu	Ile	Phe	Leu	Arg	Ile	Tyr	Asn	Leu	Ser	Glu	Pro	Lys
65					70					75				80	
Ile	Gln	Gln	Ser	Leu	Thr	Arg	Gln	Ala	Gln	Ala	Lys	Asn	Lys	Val	Thr
			85						90					95	
Ile	Tyr	Tyr	Gln	Lys	Phe	Lys	Ile	Pro	Gln	Ile	Leu	Lys	Gln	Ala	Ser
			100					105					110		
Asn	Val	Thr	Leu	Val	Glu	Gln	Pro	Pro	Ala	Gly	Arg	Lys	Leu	Met	His
		115					120					125			
Gln	Lys	Ala	Leu	Ser	Ile	Asp	Lys	Lys	Asp	Ala	Trp	Leu	Gly	Ser	Ala
	130					135					140				
Asn	Tyr	Thr	Asn	Leu	Ser	Leu	Arg	Leu	Asp	Asn	Asn	Leu	Ile	Leu	Gly
145					150				155					160	
Met	His	Ser	Ser	Glu	Leu	Cys	Asp	Leu	Ile	Ile	Thr	Asn	Thr	Ser	Gly
			165						170					175	
Asp	Phe	Ser	Ile	Lys	Asp	Gln	Thr	Gly	Lys	Tyr	Phe	Val	Leu	Pro	Gln
			180					185					190		
Asp	Arg	Lys	Ile	Ala	Ile	Gln	Ala	Val	Leu	Glu	Lys	Ile	Gln	Thr	Ala
	195					200						205			
Gln	Lys	Thr	Ile	Gln	Val	Ala	Met	Phe	Ala	Leu	Thr	His	Ser	Glu	Ile
	210					215						220			
Ile	Gln	Ala	Leu	His	Gln	Ala	Lys	Gln	Arg	Gly	Ile	His	Val	Asp	Ile
225					230					235				240	
Ile	Ile	Asp	Arg	Ser	His	Ser	Lys	Leu	Thr	Phe	Lys	Gln	Leu	Arg	Gln
			245						250					255	
Leu	Asn	Ile	Asn	Lys	Asp	Phe	Val	Ser	Ile	Asn	Thr	Ala	Pro	Cys	Thr
		260						265					270		
Leu	His	His	Lys	Phe	Ala	Val	Ile	Asp	Asn	Lys	Thr	Leu	Leu	Ala	Gly
	275						280					285			
Ser	Ile	Asn	Trp	Ser	Lys	Gly	Arg	Phe	Ser	Leu	Asn	Asp	Glu	Ser	Leu
	290					295					300				
Ile	Ile	Leu	Glu	Asn	Leu	Thr	Lys	Gln	Gln	Asn	Gln	Lys	Leu	Arg	Met
305					310					315				320	
Ile	Trp	Lys	Asp	Leu	Ala	Lys	His	Ser	Glu	His	Pro	Thr	Val	Asp	Asp
			325						330					335	
Glu	Glu	Lys	Glu	Ile	Ile	Glu	Lys	Ser	Leu	Pro	Val	Glu	Glu	Gln	Glu
			340					345					350		

Ala Ala

<210>351
 <211>243
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>351

Phe	Ile	Ser	Ile	Glu	Met	Leu	Leu	Leu	Ser	Arg	Gln	Leu	Phe	Ser	Val
1					5					10				15	
Leu	Pro	Ser	Arg	Phe	Gln	Asp	Leu	His	Val	Tyr	Arg	Phe	Lys	Glu	Ser
		20						25					30		
Leu	Lys	Leu	Leu	Gln	Phe	Met	Thr	Met	Val	Gly	Gly	Glu	Ile	Val	Val
	35						40					45			
Val	Leu	Ala	Glu	Ile	Lys	Glu	Glu	Asp	Leu	Arg	Ala	Arg	Lys	Leu	Pro
	50					55					60				
Val	Arg	Lys	Arg	Arg	Glu	Lys	Asn	Tyr	Leu	Arg	Ile	Phe	Arg	Val	Leu

65	70	75	80
Ser Arg Phe Asp Val Met Arg Ile Ile Arg Phe Asp Pro Tyr Gly Ala			
	85	90	95
Leu Ser Ala Gln Ser Ile Ala Lys Asp Ser Arg Gln Asn Ser Pro Leu			
	100	105	110
Val Glu Lys Ile Ser Glu Glu Ile Ala Thr Asn Glu Ala Ile Arg Leu			
	115	120	125
Ala Leu Leu Ala Ile Gly Asp Arg Glu Gln Glu Glu Lys Lys Gln Arg			
	130	135	140
His Arg Tyr Lys Leu Leu Gly Gln Lys Gln Ala Lys Val Leu Leu Ser			
	145	150	155
Gln Leu Arg His Val His Leu Asp Phe Lys Lys Leu Tyr Cys Asp Ser			
	165	170	175
Lys Lys Lys Glu Asp Gln Glu Lys Asp Glu Lys Asn Lys Gln Lys Arg			
	180	185	190
Ser Ile Lys Val Thr Lys Lys Lys Lys Gly Ile Ser Leu Gly Ala Ala			
	195	200	205
Ala Ser Gln Ala Ile Ala Ala Ala Ala Glu Ala Trp Val Ile Ala Arg			
	210	215	220
Asn Lys Gly Val Leu Glu Thr Ala Ser Thr Leu Phe Tyr Gln Lys Asp			
	225	230	235
Glu Glu Ala			240

<210>352

<211>554

<212>PRT

<213>Chlamydia pneumoniae

<400>352

Ile Gln Arg Ile Ile Met Ala Val Ser Gly Gly Gly Gly Val Gln Pro			
1	5	10	15
Ser Ser Asp Pro Gly Lys Trp Asn Pro Ala Leu Gln Gly Glu Gln Ala			
	20	25	30
Glu Gly Pro Ser Pro Leu Lys Glu Ser Ile Phe Ser Glu Thr Lys Gln			
	35	40	45
Ala Ser Ser Ala Ala Lys Gln Glu Ser Leu Val Arg Ser Gly Ser Thr			
	50	55	60
Gly Met Tyr Ala Thr Glu Ser Gln Ile Asn Lys Ala Lys Tyr Arg Lys			
	65	70	75
Ala Gln Asp Arg Ser Ser Thr Ser Pro Lys Ser Lys Leu Lys Gly Thr			
	85	90	95
Phe Ser Lys Met Arg Ala Ser Val Gln Gly Phe Met Ser Gly Phe Gly			
	100	105	110
Ser Arg Ala Ser Arg Val Ser Ala Lys Arg Ala Ser Asp Ser Gly Glu			
	115	120	125
Gly Thr Ser Leu Leu Pro Thr Glu Met Asp Val Ala Leu Lys Lys Gly			
	130	135	140
Asn Arg Ile Ser Pro Glu Met Gln Gly Phe Phe Leu Asp Ala Ser Gly			
	145	150	155
Met Gly Gly Ser Ser Ser Asp Ile Ser Gln Leu Ser Leu Glu Ala Leu			
	165	170	175
Lys Ser Ser Ala Phe Ser Gly Ala Arg Ser Leu Ser Leu Ser Ser Ser			
	180	185	190
Glu Ser Ser Ser Val Ala Ser Phe Gly Ser Phe Gln Lys Ala Ile Glu			
	195	200	205
Pro Met Ser Glu Glu Lys Val Asn Ala Trp Thr Val Ala Arg Leu Gly			
	210	215	220
Gly Glu Met Val Ser Ser Leu Leu Asp Pro Asn Val Glu Thr Ser Ser			
	225	230	235
Leu Val Arg Arg Ala Met Ala Thr Gly Asn Glu Gly Met Ile Asp Leu			
	245	250	255
Ser Asp Leu Gly Gln Glu Glu Xaa Ser Thr Ala Met Thr Ser Pro Arg			
	260	265	270
Ala Val Glu Gly Lys Val Lys Val Ser Ser Ser Asp Ser Pro Glu Ala			
	275	280	285

Asn	Pro	Thr	Gly	Leu	Pro	Asn	Ser	Asn	Thr	Leu	Glu	Ala	Glu	Lys
290					295					300				
Glu	Ala	Glu	Lys	Gln	Glu	Ser	Arg	Glu	Gln	Leu	Ser	Glu	Asp	Gln
305				310						315				320
Met	Leu	Ala	Arg	Ala	Met	Ala	Gly	Leu	Leu	Thr	Gly	Ala	Ala	Pro
				325						330				335
Glu	Val	Leu	Ser	Asn	Ser	Val	Trp	Ser	Gly	Pro	Ser	Thr	Val	Phe
				340						345				350
Pro	Pro	Lys	Phe	Ser	Gly	Thr	Leu	Pro	Thr	Gln	Arg	Ser	Gly	Asp
				355						360				365
Ser	Lys	His	Lys	Ser	Pro	Gly	Ile	Glu	Lys	Ser	Thr	Asn	His	Thr
				370						380				385
Phe	Ser	Pro	Leu	Arg	Glu	Gly	Thr	Val	Lys	Ser	Ala	Glu	Val	Lys
385					390					395				400
Leu	Pro	His	Pro	Glu	Ser	Met	Tyr	Arg	Phe	Pro	Lys	Asp	Ser	Ile
				405						410				415
Ser	Arg	Glu	Glu	Pro	Glu	Ala	Val	Val	Lys	Glu	Ser	Thr	Ala	Phe
				420						425				430
Asn	Pro	Glu	Asn	Ser	Ser	Gln	Asn	Phe	Leu	Pro	Ile	Ala	Val	Glu
				435						440				445
Val	Phe	Pro	Lys	Glu	Ser	Gly	Thr	Gly	Gly	Ala	Leu	Gly	Ser	Asp
				450						455				460
Val	Ser	Ser	Ser	Tyr	His	Phe	Leu	Ala	Gln	Arg	Gly	Val	Ser	Leu
465					470					475				480
Ala	Pro	Leu	Pro	Arg	Ala	Thr	Asp	Asp	Tyr	Lys	Glu	Lys	Leu	Glu
				485						490				495
His	Lys	Gly	Pro	Gly	Gly	Pro	Pro	Asp	Pro	Leu	Ile	Tyr	Gln	Tyr
				500						505				510
Asn	Val	Ala	Val	Glu	Pro	Pro	Ile	Val	Leu	Arg	Ser	Pro	Gln	Pro
				515						520				525
Ser	Gly	Ser	Ser	Arg	Leu	Ser	Val	Gln	Gly	Lys	Pro	Glu	Ala	Ala
				530						535				540
Val	His	Asp	Asp	Gly	Gly	Gly	Gly	Asn	Ser	Gly	Gly	Phe	Ser	Gly
545					550					555				560
Gln	Arg	Arg	Gly	Ser	Ser	Gly	Gln	Lys	Ala	Ser	Arg	Gln	Glu	Lys
				565						570				575
Gly	Lys	Lys	Leu	Ser	Thr	Asp	Ile							
				580										

<210>353

<211>271

<212>PRT

<213>Chlamydia pneumoniae

<400>353

Glu	Ile	Gly	Met	Leu	Leu	Arg	Gly	Ile	Pro	Ala	Ala	Glu	Lys	Ile	Leu
1				5					10					15	
Gln	Arg	Leu	Lys	Glu	Glu	Ile	Ser	Gln	Ser	Pro	Thr	Ser	Pro	Gly	Leu
				20					25					30	
Ala	Val	Val	Leu	Ile	Gly	Asn	Asp	Pro	Ala	Ser	Glu	Val	Tyr	Val	Gly
				35					40					45	
Met	Lys	Val	Lys	Lys	Ala	Thr	Glu	Ile	Gly	Ile	Ile	Ser	Lys	Ala	His
				50					55					60	
Lys	Leu	Pro	Ser	Asp	Ser	Thr	Leu	Ser	Ser	Val	Leu	Lys	Leu	Ile	Glu
				65					70					75	80
Arg	Leu	Asn	Gln	Asp	Pro	Ser	Ile	His	Gly	Ile	Leu	Val	Gln	Leu	Pro
				85					90					95	
Leu	Pro	Lys	His	Leu	Asp	Ser	Glu	Val	Ile	Leu	Gln	Ala	Ile	Ser	Pro
				100					105					110	
Asp	Lys	Asp	Val	Asp	Gly	Leu	His	Pro	Val	Asn	Met	Gly	Lys	Leu	Leu
				115					120					125	
Leu	Gly	Asn	Phe	Asp	Gly	Leu	Leu	Pro	Cys	Thr	Pro	Ala	Gly	Ile	Ile
				130					135					140	
Glu	Leu	Leu	Asn	Tyr	Tyr	Glu	Ile	Pro	Leu	Arg	Gly	Arg	His	Ala	Ala
145					150					155				160	
Ile	Val	Gly	Arg	Ser	Asn	Ile	Val	Gly	Lys	Pro	Leu	Ala	Ala	Leu	Met

165 170 175
 Met Gln Lys His Pro Gln Thr Asn Cys Thr Val Thr Val Leu His Ser
 180 185 190
 Gln Ser Glu Asn Leu Pro Glu Ile Leu Lys Thr Ala Asp Ile Ile Ile
 195 200 205
 Ala Ala Leu Gly Ala Pro Leu Phe Ile Lys Glu Thr Met Val Ala Pro
 210 215 220
 His Ala Val Ile Val Asp Val Gly Thr Thr Arg Val Pro Ala Asp Asn
 225 230 235 240
 Ala Lys Gly Tyr Thr Leu Leu Gly Asp Val Asp Phe Asn Asn Val Val
 245 250 255
 Thr Lys Cys Ala Glu Ser Leu Gln Phe Leu Glu Ala Leu Val Pro
 260 265 270

<210>354

<211>300

<212>PRT

<213>Chlamydia pneumoniae

<400>354

Arg Arg Trp Ser His Asp Cys Arg Tyr Ala His Glu Gln Tyr Met Ala
 1 5 10 15
 Met Leu Pro Lys Phe Phe Leu Val Leu Leu Cys Leu Gly Leu Cys Ser
 20 25 30
 Cys Ser Gln Lys Thr Thr Thr Ile Glu Gly Glu Gln Met Thr Ile Phe
 35 40 45
 Tyr Arg Ile Val Leu Gly Thr Ser Leu Ser Ala Lys Glu Lys Ala Ser
 50 55 60
 Leu Ser Gln Gln Ile Asp Arg Cys Phe His Lys Ile Asp Ser Ile Tyr
 65 70 75 80
 Asn Asn Trp Asn Pro Tyr Ser Glu Leu Ser Ile Ile Asn Arg Ala Pro
 85 90 95
 Ala Asp Val Pro Ile Thr Leu Ser Val Glu Leu Ser Glu Phe Leu Asp
 100 105 110
 Gln Val Asp Thr Leu Tyr Lys Leu Ser Glu Gly Arg Phe Asp Pro Thr
 115 120 125
 Val Gly Pro Leu Lys Thr Leu Trp Leu Leu His Leu Lys Ser Gln Thr
 130 135 140
 Leu Pro Pro Lys Asp Val Trp Glu Gln His Tyr Lys Asp Met Gly Trp
 145 150 155 160
 Gln His Leu Glu Phe Gln Ser Asn Thr Lys Thr Leu Ile Lys Lys Asn
 165 170 175
 Pro His Val Gln Ile Asp Leu Cys Gly Val Val Lys Gly Tyr Ala Val
 180 185 190
 Asp Cys Leu Asn Glu Ile Cys Asn Thr Phe Cys Pro Asn Asn Tyr Val
 195 200 205
 Glu Trp Gly Gly Glu Ile Lys Thr Ser Gly His His Pro Ser Gly Arg
 210 215 220
 Pro Trp Arg Ile Phe Ser Glu Ala Ala Gly Thr Ile Leu Asp Ile Asp
 225 230 235 240
 Asp Met Ala Ile Ala Thr Ser Gly Asn His Ile Gln Lys Trp Cys Val
 245 250 255
 Glu Gly Lys Ile Tyr Thr His Ile Leu Asp Thr Arg Thr Gly Lys Pro
 260 265 270
 Leu Glu Leu Ser Ser Tyr Pro Ile Gln Ser Val Ser Val Val His Pro
 275 280 285
 Thr Ala His Thr Pro Thr Leu Leu Pro Gln Ser Ser
 290 295 300

<210>355

<211>165

<212>PRT

<213>Chlamydia pneumoniae

<400>355

Leu Leu Tyr Trp Phe Leu Ser Pro Ile Met Gly Glu Asp Leu Met Ala
 1 5 10 15
 Gln Lys Glu Ile Val Ser Asn Arg Lys Ala Leu Arg Asn Tyr Glu Val

20 25 30
 Ile Glu Thr Leu Glu Ala Gly Ile Val Leu Thr Gly Thr Glu Ile Lys
 35 40 45
 Ser Leu Arg Asp His Gly Gly Asn Leu Gly Asp Ala Tyr Val Ile Val
 50 55 60
 Ser Lys Gly Glu Gly Trp Leu Leu Asn Ala Ser Ile Ala Pro Tyr Arg
 65 70 75 80
 Phe Gly Asn Ile Tyr Asn His Glu Glu Arg Arg Lys Arg Lys Leu Leu
 85 90 95
 Leu His Arg Tyr Glu Leu Arg Lys Leu Glu Gly Lys Ile Ala Gln Lys
 100 105 110
 Gly Met Thr Leu Ile Pro Leu Gly Met Phe Leu Ser Arg Gly Tyr Val
 115 120 125
 Lys Val Arg Leu Gly Cys Cys Arg Gly Lys Lys Ala Tyr Asp Lys Arg
 130 135 140
 Arg Thr Ile Ile Glu Arg Glu Lys Glu Arg Glu Val Ala Ala Ala Met
 145 150 155 160
 Lys Arg Arg His His
 165

<210>356

<211>195

<212>PRT

<213>Chlamydia pneumoniae

<400>356

Glu Asn Met Lys Phe Val Val Ser Arg Asn Glu Leu Gly Asn Leu Ile
 1 5 10 15
 Lys Lys Ile Gln Ser Val Val Pro Gln Asn Thr Pro Ile Pro Val Leu
 20 25 30
 Thr His Val Leu Ile Glu Thr Tyr Asn Asp Glu Leu Val Phe Thr Ala
 35 40 45
 Thr Asp Leu Thr Val Ser Thr Arg Cys Val Thr Lys Ala Lys Val Tyr
 50 55 60
 Glu Lys Gly Ala Ile Ser Ile Pro Ser Lys Arg Phe Phe Gln Leu Val
 65 70 75 80
 Lys Glu Leu Thr Glu Ala Asn Leu Glu Ile Ser Ser Ser Ala Gly Glu
 85 90 95
 Met Ala Gln Ile Thr Ser Gly Ser Ser Tyr Phe Ala Tyr Ser Ala Trp
 100 105 110
 Lys Lys Lys Thr Ser Pro Cys Ser Leu Ile Tyr Lys Met Leu Cys Val
 115 120 125
 Phe Pro Cys Leu Gln Ser Ser
 130 135

<210>357

<211>303

<212>PRT

<213>Chlamydia pneumoniae

<400>357

Glu Arg Arg Tyr Phe His Ser Leu Gln Glu Ile Phe Ser Ile Ser Lys
 1 5 10 15
 Arg Ile Asn Arg Gly Lys Phe Arg Asn Phe Leu Phe Ser Arg Gly Asn
 20 25 30
 Gly Thr Asn His Leu Gly Ile Phe Ile Phe Arg Leu Leu Ser Met Glu
 35 40 45
 Lys Glu Asp Phe Pro Met Leu Pro Asp Ile Gln Asn Ala Leu Arg Phe
 50 55 60
 Ser Leu Pro Ala Glu Gln Leu Lys Thr Met Leu Gln Arg Thr Ser Phe
 65 70 75 80
 Ala Val Ser Arg Glu Glu Ser Arg Tyr Val Leu Thr Gly Val Leu Leu
 85 90 95
 Ala Ile Ala Asn Gly Val Ala Thr Ile Val Gly Thr Asp Gly Lys Arg
 100 105 110
 Leu Ala Lys Ile Asp Ala Glu Val Thr Leu Asp Lys Ser Phe Ser Gly
 115 120 125
 Glu Tyr Ile Ile Pro Ile Lys Ala Val Glu Glu Ile Ile Lys Met Cys

130 135 140
 Ser Asp Glu Gly Glu Ala Thr Ile Phe Leu Asp Gln Asp Lys Ile Ala
 145 150 155 160
 Val Glu Cys Asp Asn Thr Leu Leu Ile Thr Lys Leu Leu Ser Gly Glu
 165 170 175
 Phe Pro Asp Phe Ser Pro Val Ile Ser Thr Glu Ser Asn Val Lys Leu
 180 185 190
 Asp Leu His Arg Glu Glu Leu Ile Thr Leu Leu Lys Gln Val Ala Leu
 195 200 205
 Phe Thr Asn Glu Ser Ser His Ser Val Lys Phe Ser Phe Leu Pro Gly
 210 215 220
 Glu Leu Thr Leu Thr Ala Asn Cys Thr Lys Val Gly Glu Gly Lys Val
 225 230 235 240
 Ser Met Ala Val Asn Tyr Ser Gly Glu Leu Leu Glu Ile Ala Phe Asn
 245 250 255
 Pro Phe Phe Phe Leu Asp Ile Leu Lys His Ser Lys Asp Glu Leu Val
 260 265 270
 Ser Leu Gly Ile Ser Asp Ser Tyr Asn Pro Gly Ile Ile Thr Asp Ser
 275 280 285
 Ala Ser Gly Leu Phe Val Ile Met Pro Met Arg Leu His Asp Asp
 290 295 300

<210>358

<211>316

<212>PRT

<213>Chlamydia pneumoniae

<400>358

Pro Leu Tyr Pro Leu Leu Ile Val Leu Ser Ser Arg Ser Ser Ala Glu
 1 5 10 15
 Lys Cys Ser Leu Lys Lys Gln Ala Asn Leu Asn Arg Gly Leu Trp Asp
 20 25 30
 Glu Gln Leu Val Lys His Gly Thr Tyr Leu Ser Ile Gln Arg Phe Leu
 35 40 45
 Cys Ser Gln Lys Leu Ser Asp Leu Ser Lys Glu Leu Trp Ser Asn Asn
 50 55 60
 Leu Lys Glu Gln Leu Ala Leu Lys Phe Lys Ser Ser Leu Ile Lys Asn
 65 70 75 80
 Ser Asp Ile Ser Glu Thr Ala Val Ala Glu Glu Phe His Lys Gln Leu
 85 90 95
 Ser Ile Ser Leu Pro Arg Asp Leu Glu Trp Gly Ser Thr Ser Val Gly
 100 105 110
 Pro His Arg Glu Asp Phe Leu Leu Thr Met Asn Gln Met Pro Val Ser
 115 120 125
 Gln Phe Ser Ser Glu Gly Gln Lys His Ser Leu Leu Ala Ile Leu Arg
 130 135 140
 Leu Ala Glu Cys Leu Tyr Leu Lys Gln Ser His His Val Ser Pro Leu
 145 150 155 160
 Val Cys Leu Asp Asp Ile His Ala Gly Leu Asp Asn Glu Arg Val Gly
 165 170 175
 Gln Leu Leu Asp Pro Ala Pro Thr Leu Gly Gln Thr Leu Ile Thr Ser
 180 185 190
 Thr His Met His Gly Glu Leu Pro Lys Thr Ser Leu Val Leu Ser Ile
 195 200 205
 Glu Asn Ala Gln Val Ser Glu Gln Ile Ile
 210 215

<210>359

<211>127

<212>PRT

<213>Chlamydia pneumoniae

<400>359

His Met Lys Lys Phe Leu Leu Thr Ile Leu Phe Leu Ala Val Gly Asn
 1 5 10 15
 Pro Leu Phe Ser Glu Thr Ser Val Ile Gln Thr Leu Pro Ser Gly Ile
 20 25 30
 Gly Gly Leu Lys Glu Thr Ser Lys Gln Lys Glu Ser Val Val Cys Val

25 40
 His Ala Phe Leu Arg Ser Tyr Thr Ser Leu Lys Pro Ile Ala Arg Val
 50 55 60
 Leu Glu Lys Glu His Tyr Asp Val Phe Ile Trp Asn Tyr Glu Thr Arg
 65 70 75 80
 Lys Phe Thr Leu Glu Lys His Ala Glu His Leu Asn Arg Leu Leu Lys
 85 90 95
 Lys Ile Ala Glu Leu Lys Pro Gly Val Pro Ile Asn Phe Val Thr His
 100 105 110
 Ser Ile Gly Gly Val Ile Val Arg Ala Leu Ala Glu Lys Asn Ser
 115 120 125

<210>360

<211>244

<212>PRT

<213>Chlamydia pneumoniae

<400>360

Leu Ile Leu Leu Glu Glu Ser Leu Phe Val Arg Leu Leu Lys Lys Ile
 1 5 10 15
 Ala Glu Leu Lys Pro Gly Val Pro Ile Asn Phe Val Thr His Ser Ile
 20 25 30
 Gly Gly Val Ile Val Arg Val Ala Leu Ala His Pro Asp Cys Pro Glu
 35 40 45
 Glu Ala Lys Lys Gly Lys Ala Ile Leu Met Ala Pro Pro Asn Ala Gly
 50 55 60
 Ser Thr Leu Ala Arg Arg Tyr Arg Cys Val Lys Phe Val Gln Phe Val
 65 70 75 80
 Phe Gly Gly Lys Leu Gly Arg Gln Leu Leu Thr Tyr Cys Pro Thr Lys
 85 90 95
 Met Leu Asn Val Gly Lys Leu Pro Ser Ser Leu Asp Val Leu Ile Leu
 100 105 110
 Ser Gly Asn Arg His Ser Lys Phe Leu Pro Phe Arg Leu Pro Tyr Glu
 115 120 125
 Asn Asp Gly Lys Val Cys Thr Ile Glu Thr Lys Leu Asp Thr Pro His
 130 135 140
 Lys Ala Tyr Val Ile His Thr Ser His Thr Tyr Ile Ile Thr Asn Arg
 145 150 155 160
 Lys Ser Leu Tyr Leu Met Lys Glu Phe Leu Lys Glu Gly Asn Thr Thr
 165 170 175
 Pro Ile Ile Glu His Val Pro Glu Ala Ala Leu Glu Gln Thr Val Met
 180 185 190
 Glu Asp Lys Gln Lys Asn Ser Arg Leu Lys Pro Tyr Pro Asn Gln Asp
 195 200 205
 Ile Tyr Val Ile His Cys Phe Gly Ser Arg Pro Tyr Asn Leu Tyr Gly
 210 215 220
 Phe Pro Lys Lys Trp Ser Leu Asn Gln Lys Asn Glu Ile Asn Pro Glu
 225 230 235 240
 Lys Leu Glu Lys

<210>361

<211>621

<212>PRT

<213>Chlamydia pneumoniae

<400>361

Met Thr Ile Ile Tyr Phe Ile Leu Ala Ala Leu Ala Leu Gly Ile Leu
 1 5 10 15
 Val Leu Ile His Glu Leu Gly His Leu Val Val Ala Lys Ala Val Gly
 20 25 30
 Met Ala Val Glu Ser Phe Ser Ile Gly Phe Gly Pro Ala Leu Phe Lys
 35 40 45
 Lys Arg Ile Gly Gly Ile Glu Tyr Arg Ile Gly Cys Ile Pro Phe Gly
 50 55 60
 Gly Tyr Val Arg Ile Arg Gly Met Glu Arg Thr Lys Glu Lys Gly Glu
 65 70 75 80
 Lys Gly Lys Ile Asp Ser Val Tyr Asp Ile Pro Gln Gly Phe Phe Ser

85 90 95
 Lys Ser Pro Trp Lys Arg Ile Leu Val Leu Val Ala Gly Pro Leu Ala
 100 105 110
 Asn Ile Leu Leu Ala Val Leu Ala Phe Ser Ile Leu Tyr Met Asn Gly
 115 120 125
 Gly Arg Ser Lys Asn Tyr Ser Asp Cys Ser Lys Val Val Gly Trp Val
 130 135 140
 His Pro Val Leu Gln Ala Glu Gly Leu Leu Pro Gly Asp Glu Ile Leu
 145 150 155
 Thr Cys Asn Gly Lys Pro Tyr Val Gly Asp Lys Asp Met Leu Thr Thr
 165 170 175
 Ser Leu Leu Glu Gly His Leu Asn Leu Glu Ile Lys Arg Pro Gly Tyr
 180 185 190
 Leu Thr Val Pro Ser Lys Glu Phe Ala Ile Asp Val Glu Phe Asp Pro
 195 200 205
 Thr Lys Phe Gly Val Pro Cys Ser Gly Ala Ser Tyr Leu Leu Tyr Gly
 210 215 220
 Asn Gln Val Pro Leu Thr Lys Asn Ser Pro Met Glu Asn Ser Glu Leu
 225 230 235
 Arg Pro Asn Asp Arg Phe Val Trp Met Asp Gly Thr Leu Leu Phe Ser
 245 250 255
 Met Ala Gln Ile Ser Gln Ile Leu Asn Glu Ser Tyr Ala Phe Val Lys
 260 265 270
 Val Ala Arg Asn Asp Lys Ile Phe Phe Ser Arg Gln Pro Arg Val Leu
 275 280 285
 Ala Ser Val Leu His Tyr Thr Pro Tyr Leu Arg Asn Glu Leu Ile Asp
 290 295 300
 Thr Gln Tyr Glu Ala Gly Leu Lys Gly Lys Trp Ser Ser Leu Tyr Thr
 305 310 315
 Leu Pro Tyr Val Ile Asn Ser Tyr Gly Tyr Ile Glu Gly Glu Leu Thr
 325 330 335
 Ala Ile Asp Pro Glu Ser Pro Leu Pro Gln Pro Gln Glu Arg Leu Gln
 340 345 350
 Leu Gly Asp Arg Ile Leu Ala Ile Asp Gly Thr Pro Val Ser Gly Ser
 355 360 365
 Val Asp Ile Leu Arg Leu Val Gln Asn His Arg Val Ser Ile Ile Val
 370 375 380
 Gln Gln Met Ser Pro Gln Glu Leu Glu Glu Val Asn Ser Arg Asp Ala
 385 390 395
 Asp Lys Arg Phe Ile Ala Ser Tyr His Ser Glu Asp Leu Leu Gln Ile
 405 410 415
 Leu Asn His Leu Gly Glu Ser His Pro Val Glu Val Ala Gly Pro Tyr
 420 425 430
 Arg Leu Leu Asp Pro Val Gln Pro Arg Pro Trp Ile Asp Val Tyr Ser
 435 440 445
 Ser Glu Ser Leu Asp Lys Gln Leu Glu Val Ala Lys Lys Ile Lys Asn
 450 455 460
 Lys Asp Lys Gln Arg Tyr Tyr Leu Glu Arg Leu Asp Ala Glu Lys Gln
 465 470 475
 Lys Pro Ser Leu Gly Ile Ser Leu Lys Asp Leu Lys Val Arg Tyr Asn
 485 490 495
 Pro Ser Pro Val Val Met Leu Ser Asn Ile Thr Lys Glu Ser Leu Ile
 500 505 510
 Thr Leu Lys Ala Leu Val Thr Gly His Leu Ser Pro Gln Trp Leu Ser
 515 520 525
 Gly Pro Val Gly Ile Val Gln Val Leu His Thr Gly Trp Ser Val Gly
 530 535 540
 Phe Ser Glu Val Leu Phe Trp Ile Gly Leu Ile Ser Met Asn Leu Ala
 545 550 555
 Val Leu Asn Leu Leu Pro Ile Pro Val Leu Asp Gly Gly Tyr Ile Leu
 565 570 575
 Leu Cys Leu Trp Glu Ile Val Thr Arg Arg Arg Leu Asn Met Lys Ile
 580 585 590
 Val Glu Arg Ile Leu Val Pro Phe Thr Phe Leu Leu Ile Ile Phe Phe

595
 Ile Phe Leu Thr Phe Gln Asp Leu Phe Arg Phe Phe Gly
 610 615 620
 <210>362
 <211>340
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>362
 Ser Lys Val Ile Phe Gln Gln Leu Gln Glu Phe Ala Pro Leu Ala Ala
 1 5 10 15
 Ala Val Tyr Asn Glu Glu Val Tyr Asn Glu Ala Cys Gln Arg Phe Pro
 20 25 30
 His Met Gln Phe Phe Leu Gly Gln Glu Gly Leu Thr Gln Leu Cys Ile
 35 40 45
 Met Asp Thr Val Thr Thr Val Val Ala Ala Ser Ser Gly Ile Glu Ala
 50 55 60
 Leu Pro Ala Ile Leu Glu Ser Met Lys Lys Gly Lys Ala Leu Ala Leu
 65 70 75 80
 Ala Asn Lys Glu Ile Leu Val Cys Ala Gly Glu Leu Val Ser Lys Thr
 85 90 95
 Ala Lys Glu Asn Gly Ile Lys Val Leu Pro Ile Asp Ser Glu His Asn
 100 105 110
 Ala Leu Tyr Gln Cys Leu Glu Gly Arg Thr Ile Glu Gly Ile Lys Lys
 115 120 125
 Leu Ile Leu Thr Ala Ser Gly Gly Pro Leu Leu Asn Lys Ser Leu Glu
 130 135 140
 Glu Leu Ser Cys Val Thr Lys Gln Asp Val Leu Asn His Pro Ile Trp
 145 150 155 160
 Asn Met Gly Ser Lys Val Thr Val Asp Ser Ser Thr Leu Val Asn Lys
 165 170 175
 Gly Leu Glu Ile Ile Glu Ala Tyr Trp Leu Phe Gly Leu Glu Asn Val
 180 185 190
 Glu Ile Leu Ala Val Ile His Pro Gln Ser Leu Ile His Gly Met Val
 195 200 205
 Glu Phe Leu Asp Gly Ser Val Ile Ser Ile Met Asn Pro Pro Asp Met
 210 215 220
 Leu Phe Pro Ile Gln Tyr Ala Leu Thr Ala Pro Glu Arg Phe Ala Ser
 225 230 235 240
 Pro Arg Asp Gly Met Asp Phe Ser Lys Lys Gln Thr Leu Glu Phe Phe
 245 250 255
 Pro Val Asp Glu Glu Arg Phe Pro Ser Ile Arg Leu Ala Gln Gln Val
 260 265 270
 Leu Glu Lys Gln Gly Ser Ser Gly Ser Phe Phe Asn Ala Ala Asn Glu
 275 280 285
 Val Leu Val Arg Arg Phe Leu Cys Glu Glu Ile Ser Trp Cys Asp Ile
 290 295 300
 Leu Arg Lys Leu Thr Thr Leu Met Glu Cys His Lys Val Tyr Ala Cys
 305 310 315 320
 His Ser Leu Glu Asp Ile Leu Glu Val Asp Gly Glu Ala Arg Ala Leu
 325 330 335
 Ala Gln Glu Ile
 340
 <210>363
 <211>329
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>363
 Lys Lys Gly Ser Leu Met Ala Leu Gly Pro Ser Pro Tyr Tyr Gly Val
 1 5 10 15
 Ser Phe Phe Gln Phe Phe Ser Val Phe Phe Ser Arg Leu Phe Ser Gly
 20 25 30
 Ser Leu Phe Thr Gly Ser Leu Tyr Ile Asp Asp Ile Gln Ile Ile Val
 35 40 45
 Phe Leu Ala Ile Ser Cys Ser Gly Ala Phe Ala Gly Thr Phe Leu Val

50 55 60
 Leu Arg Lys Met Ala Met Tyr Ala Asn Ala Val Ser His Thr Val Leu
 65 70 75 80
 Phe Gly Leu Val Cys Val Cys Leu Phe Thr His Glu Leu Thr Thr Leu
 85 90 95
 Ser Leu Gly Thr Leu Thr Leu Ala Ala Met Ala Thr Ala Met Leu Thr
 100 105 110
 Gly Phe Leu Ile Tyr Phe Ile Arg Asn Thr Phe Lys Val Ser Glu Glu
 115 120 125
 Ser Ser Thr Ala Leu Val Phe Ser Leu Leu Phe Ser Leu Ser Leu Val
 130 135 140
 Leu Leu Val Phe Met Thr Lys Asn Ala His Ile Gly Thr Glu Leu Val
 145 150 155 160
 Leu Gly Asn Ala Asp Ser Leu Thr Lys Glu Asp Ile Phe Pro Val Thr
 165 170 175
 Ile Val Ile Leu Ala Asn Ala Val Ile Thr Ile Phe Ala Phe Arg Ser
 180 185 190
 Leu Val Cys Ser Ser Phe Asp Ser Val Phe Ala Ser Ser Leu Gly Ile
 195 200 205
 Pro Ile Arg Leu Val Asp Tyr Leu Ile Ile Phe Glu Leu Ser Ala Cys
 210 215 220
 Leu Val Gly Ala Phe Lys Ala Val Gly Val Leu Met Ala Leu Ala Phe
 225 230 235 240
 Leu Ile Ile Pro Ser Leu Ile Ala Lys Val Ile Ala Lys Ser Ile Arg
 245 250 255
 Ser Leu Met Ala Trp Ser Leu Val Phe Ser Ile Xaa Thr Ala Phe Leu
 260 265 270
 Ala Pro Ala Ser Ser Arg Ala Ile Leu Ser Ala Tyr Asp Leu Gly Leu
 275 280 285
 Ser Thr Ser Gly Ile Ser Val Val Phe Leu Thr Met Met Tyr Ile Val
 290 295 300
 Val Lys Phe Ile Ser Tyr Phe Arg Gly Tyr Phe Ser Lys Asn Phe Glu
 305 310 315 320
 Lys Ile Ser Glu Lys Ser Ser Gln Tyr
 325

<210>364

<211>391

<212>PRT

<213>Chlamydia pneumoniae

<400>364

Trp Arg Asn Met Phe Ser His Cys Lys Leu Leu Phe Phe Gly Leu Cys
 1 5 10 15
 Cys Leu Gly Val Leu Leu Arg Tyr Leu Val Met Gly Ile Ile Val Phe
 20 25 30
 Leu Gly Lys Val Cys Lys Leu His Lys Asp Ser Ala Leu Cys Phe Val
 35 40 45
 Leu Val Val Phe Phe Ala Ile Gly Val Ile Leu Ala Ser Tyr Val Lys
 50 55 60
 Glu Ser Ser Pro Thr Leu Tyr Asn Arg Ile Asn Ala Tyr Leu Tyr Gly
 65 70 75 80
 Gln Ala Ala Thr Leu Gly Phe Leu Glu Ala Thr Leu Ala Ala Ile Val
 85 90 95
 Phe Cys Ala Ser Leu Phe Ala Leu Trp Trp Trp Tyr Arg Gln Ile Val
 100 105 110
 Val Thr Thr Phe Asp Lys Asp Phe Ala Val Thr Cys Gly Leu Lys Thr
 115 120 125
 Val Leu Tyr Glu Ala Leu Ser Leu Ile Phe Ile Ser Leu Val Ile Val
 130 135 140
 Ser Gly Val Arg Ser Val Gly Ile Val Leu Ile Ser Ala Met Phe Val
 145 150 155 160
 Ala Pro Ser Leu Gly Ala Arg Gln Leu Ser Asp Arg Leu Ser Thr Ile
 165 170 175
 Leu Ile Leu Ser Ala Phe Phe Gly Gly Ile Ser Gly Ala Leu Gly Ser
 180 185 190

Tyr	Ile	Ser	Val	Ala	Phe	Thr	Cys	Arg	Ala	Ile	Ile	Gln	Gln	Ala
	195						200					205		
Val	Pro	Val	Thr	Leu	Pro	Thr	Gly	Pro	Leu	Val	Val	Ile	Cys	Ala
	210						215					220		
Leu	Leu	Ala	Gly	Leu	Cys	Leu	Leu	Phe	Ser	Pro	Lys	Ser	Gly	Trp
225					230					235				240
Ile	Arg	Phe	Val	Arg	Arg	Lys	His	Phe	Ser	Phe	Ser	Lys	Asp	Gln
			245					250						255
His	Leu	Leu	Lys	Val	Phe	Trp	His	Ile	Ser	His	Asn	Arg	Leu	Glu
			260					265						270
Ile	Ser	Val	Arg	Asp	Phe	Val	Cys	Ser	Tyr	Lys	Tyr	Gln	Glu	Tyr
	275						280					285		
Gly	Pro	Lys	Pro	Phe	Pro	Arg	Trp	Arg	Val	Gln	Ile	Leu	Glu	Trp
	290					295					300			
Gly	Tyr	Val	Lys	Lys	Glu	Gln	Asp	Tyr	Tyr	Arg	Leu	Thr	Lys	Lys
305					310					315				320
Arg	Ser	Glu	Ala	Leu	Arg	Leu	Val	Arg	Ala	His	Arg	Leu	Trp	Glu
			325						330					335
Tyr	Leu	Val	Asn	Ser	Leu	Asp	Phe	Ser	Lys	Glu	Ser	Val	His	Glu
			340					345						350
Ala	Glu	Glu	Ile	Glu	His	Val	Leu	Thr	Glu	Glu	Leu	Asp	His	Thr
	355						360					365		
Thr	Glu	Ile	Leu	Asn	Asp	Pro	Cys	Tyr	Asp	Pro	His	Arg	Gln	Ile
	370				375						380			
Pro	Asn	Lys	Lys	Lys	Glu	Val								
385					390									

<210>365

<211>113

<212>PRT

<213>Chlamydia pneumoniae

<400>365

Thr	Phe	Gly	Thr	Asn	Pro	Glu	Ala	Leu	Ser	Arg	Lys	Thr	Ile	Trp
1				5					10					15
Val	Leu	Ile	Met	Leu	Ser	Cys	Val	Phe	Ser	Asp	Thr	Ile	Phe	Leu
		20						25					30	
Ser	Phe	Leu	Ala	Val	Thr	Leu	Ile	Cys	Met	Thr	Thr	Ala	Leu	Trp
		35					40					45		
Thr	Ile	Leu	Leu	Ile	Ser	Lys	Gln	Pro	Leu	Leu	Ser	Glu	Ser	Leu
	50					55					60			
His	Ala	Ser	Tyr	Pro	Gly	Leu	Leu	Val	Gly	Ala	Leu	Met	Ala	Gln
65					70				75					80
Val	Phe	Ser	Leu	Gln	Ala	Ser	Ile	Phe	Trp	Ile	Val	Leu	Phe	Gly
			85						90					95
Ala	Ala	Ser	Val	Phe	Gly	Tyr	Gly	Asp	His	Cys	Phe	Leu	Arg	Glu
			100					105						110

Met

<210>366

<211>259

<212>PRT

<213>Chlamydia pneumoniae

<400>366

Leu	Asn	Val	Lys	Asp	Glu	Thr	Phe	Trp	Ser	Val	His	Asn	Leu	Cys
1				5					10					15
Asn	Tyr	Glu	His	Ala	Ala	Val	Leu	Tyr	His	Ile	Ser	Phe	Ser	Leu
		20						25					30	
Lys	Gly	Ser	Leu	Thr	Ala	Ile	Leu	Gly	Pro	Asn	Gly	Ala	Gly	Lys
		35					40					45		
Thr	Leu	Leu	Lys	Ala	Ser	Leu	Gly	Leu	Ile	Lys	Pro	Ser	Ser	Gly
	50					55					60			
Val	Tyr	Phe	Phe	Asn	Gln	Lys	Phe	Lys	Lys	Val	Arg	Gln	Arg	Ile
65					70				75					80
Tyr	Met	Pro	Gln	Arg	Ala	Ser	Val	Asp	Trp	Asp	Phe	Pro	Met	Thr
				85					90					95

Leu Asp Leu Ala Leu Met Gly Cys Tyr Ser Tyr Lys Gly Met Trp Gly
 100 105 110
 Arg Ile Ser Ser Asp Asp Arg Arg Glu Ala Phe His Ile Leu Glu Arg
 115 120 125
 Val Gly Leu Glu Ser Val Ala Asp Arg Gln Ile Gly Gln Leu Ser Gly
 130 135 140
 Gly Gln Gln Gln Arg Ala Phe Leu Ala Arg Ala Leu Met Gln Lys Ala
 145 150 155 160
 Asp Leu Tyr Leu Met Asp Glu Leu Phe Ser Ala Ile Asp Met Ala Ser
 165 170 175
 Phe Lys Thr Ser Val Gly Val Leu Gln Glu Leu Arg Asp Gln Gly Lys
 180 185 190
 Thr Ile Val Val Val His His Asp Leu Ser His Val Arg Gln Leu Phe
 195 200 205
 Asp His Val Val Leu Leu Asn Lys Arg Leu Ile Cys Cys Gly Pro Thr
 210 215 220
 Asp Glu Cys Leu Asn Gly Asp Thr Ile Phe Gln Thr Tyr Gly Cys Glu
 225 230 235 240
 Ile Glu Leu Leu Glu Gln Thr Leu Lys Leu Ser Arg Gly Lys Gln Phe
 245 250 255
 Gly Ser Cys

<210>367

<211>336

<212>PRT

<213>Chlamydia pneumoniae

<400>367

Trp Ile Leu Lys Asn Ala Ser Arg Glu Met Asp Ala Lys Met Gly Tyr
 1 5 10 15
 Ile Phe Lys Val Met Arg Trp Ile Phe Cys Phe Val Ala Cys Gly Ile
 20 25 30
 Thr Phe Gly Cys Thr Asn Ser Gly Phe Gln Asn Ala Asn Ser Arg Pro
 35 40 45
 Cys Ile Leu Ser Met Asn Arg Met Ile His Asp Cys Val Glu Arg Val
 50 55 60
 Val Gly Asn Arg Leu Ala Thr Ala Val Leu Ile Lys Gly Ser Leu Asp
 65 70 75 80
 Pro His Ala Tyr Glu Met Val Lys Gly Asp Lys Asp Lys Ile Ala Gly
 85 90 95
 Ser Ala Val Ile Phe Cys Asn Gly Leu Gly Leu Glu His Thr Leu Ser
 100 105 110
 Leu Arg Lys His Leu Glu Asn Asn Pro Asn Ser Val Lys Leu Gly Glu
 115 120 125
 Arg Leu Ile Ala Arg Gly Ala Phe Val Pro Leu Glu Glu Asp Gly Ile
 130 135 140
 Cys Asp Pro His Ile Trp Met Asp Leu Ser Ile Trp Lys Glu Ala Val
 145 150 155 160
 Ile Glu Ile Thr Glu Val Leu Ile Glu Lys Phe Pro Glu Trp Ser Ala
 165 170 175
 Glu Phe Lys Ala Asn Ser Glu Glu Leu Val Cys Glu Met Ser Ile Leu
 180 185 190
 Asp Ser Trp Ala Lys Gln Cys Leu Ser Thr Ile Pro Glu Asn Leu Arg
 195 200 205
 Tyr Leu Val Ser Gly His Asn Ala Phe Ser Tyr Phe Thr Arg Arg Tyr
 210 215 220
 Leu Ala Thr Pro Glu Glu Val Ala Ser Gly Ala Trp Arg Ser Arg Cys
 225 230 235 240
 Ile Ser Pro Glu Gly Leu Ser Pro Glu Ala Gln Ile Ser Val Arg Asp
 245 250 255
 Ile Met Ala Val Val Asp Tyr Ile Asn Glu His Asp Val Ser Val Val
 260 265 270
 Phe Pro Glu Asp Thr Leu Asn Gln Asp Ala Leu Lys Lys Ile Val Ser
 275 280 285
 Ser Leu Lys Lys Ser His Leu Val Arg Leu Ala Gln Lys Pro Leu Tyr

210 215 220
 Gly Val Asp Pro Trp Gly Ile Ser Leu Arg Leu Leu Met Ala Met Thr
 225 230 235 240
 Ile Val Ser Gly Leu Val Leu Met Ala Ser Tyr Trp Trp Ile Asn Lys
 245 250 255
 Asn Val Leu Thr Asp Pro Arg Phe Tyr Asn Pro Glu Glu Met Gln Lys
 260 265 270
 Gly Lys Lys Gly Ala Lys Pro Lys Met Asn Met Lys Asp Ser Phe Leu
 275 280 285
 Tyr Leu Ala Arg Ser Pro Tyr Ile Leu Leu Leu Ala Leu Leu Val Ile
 290 295 300
 Ala Tyr Gly Ile Cys Ile Asn Leu Ile Glu Val Thr Trp Lys Ser Gln
 305 310 315 320
 Leu Lys Leu Gln Tyr Pro Asn Met Asn Asp Tyr Ser Glu Phe Met Gly
 325 330 335
 Asn Phe Ser Phe Trp Thr Gly Val Val Ser Val Leu Ile Met Leu Phe
 340 345 350
 Val Gly Gly Asn Val Ile Arg Lys Phe Gly Trp Leu Thr Gly Ala Leu
 355 360 365
 Val Thr Pro Val Met Val Leu Leu Thr Gly Ile Val Phe Phe Ala Leu
 370 375 380
 Val Ile Phe Arg Asn Gln Ala Ser Gly Leu Val Ala Met Phe Gly Thr
 385 390 395 400
 Thr Pro Leu Met Leu Ala Val Val Val Gly Ala Ile Gln Asn Ile Leu
 405 410 415
 Ser Lys Ser Thr Lys Tyr Ala Leu Phe Asp Ser Thr Lys Glu Met Ala
 420 425 430
 Tyr Ile Pro Leu Asp Gln Glu Gln Lys Val Lys Gly Lys Ala Ala Ile
 435 440 445
 Asp Val Val Ala Ala Arg Phe Gly Lys Ser Gly Gly Ala Leu Ile Gln
 450 455 460
 Gln Gly Leu Leu Val Ile Cys Gly Ser Ile Gly Ala Met Thr Pro Tyr
 465 470 475 480
 Leu Ala Val Ile Leu Leu Phe Ile Ile Ala Ile Trp Leu Val Ser Ala
 485 490 495
 Thr Lys Leu Asn Lys Leu Phe Leu Ala Gln Ser Ala Leu Lys Glu Gln
 500 505 510
 Glu Val Ala Gln Glu Asp Ser Ala Pro Ala Ser Ser
 515 520

<210>370

<211>448

<212>PRT

<213>Chlamydia pneumoniae

<400>370

Leu Pro Phe His Glu Phe Val Arg Phe Phe Gln Ser Lys Lys Val Ile
 1 5 10 15
 Ile Thr Val Arg His Ser Gly Cys Thr Met Lys Cys Ser Pro Leu Thr
 20 25 30
 Leu Val Pro His Ile Phe Leu Lys Asn Asp Cys Glu Cys His Arg Ser
 35 40 45
 Cys Ser Leu Lys Ile Arg Thr Ile Ala Arg Leu Ile Leu Gly Leu Val
 50 55 60
 Leu Ala Leu Val Ser Ala Leu Ser Phe Val Phe Leu Ala Ala Pro Ile
 65 70 75 80
 Ser Tyr Ala Ile Gly Gly Thr Leu Ala Leu Ala Ala Ile Val Ile Leu
 85 90 95
 Ile Ile Thr Leu Val Val Ala Leu Leu Ala Lys Ser Lys Val Leu Pro
 100 105 110
 Ile Pro Asn Glu Leu Gln Lys Ile Ile Tyr Asn Arg Tyr Pro Lys Glu
 115 120 125
 Val Phe Tyr Phe Val Lys Thr His Ser Leu Thr Val Asn Glu Leu Lys
 130 135 140
 Ile Phe Ile Asn Cys Trp Lys Ser Gly Thr Asp Leu Pro Pro Asn Leu
 145 150 155 160

His	Lys	Lys	Ala	Glu	Ala	Phe	Gly	Ile	Asp	Ile	Leu	Ser	Ile	Asp	
				165					170				175		
Leu	Thr	Leu	Phe	Pro	Glu	Phe	Glu	Glu	Ile	Leu	Leu	Gln	Asn	Cys	Pro
			180					185					190		
Leu	Tyr	Trp	Leu	Ser	His	Phe	Ile	Asp	Lys	Thr	Glu	Ser	Val	Ala	Gly
		195					200					205			
Glu	Ile	Gly	Leu	Asn	Lys	Thr	Gln	Lys	Val	Tyr	Gly	Leu	Leu	Gly	Pro
	210					215					220				
Leu	Ala	Phe	His	Lys	Gly	Tyr	Thr	Thr	Ile	Phe	His	Ser	Tyr	Thr	Arg
225					230					235					240
Pro	Leu	Leu	Thr	Leu	Ile	Ser	Glu	Ser	Gln	Tyr	Lys	Phe	Leu	Tyr	Ser
			245						250					255	
Lys	Ala	Ser	Lys	Asn	Gln	Trp	Asp	Ser	Pro	Ser	Val	Lys	Lys	Thr	Cys
			260					265					270		
Glu	Glu	Ile	Phe	Lys	Glu	Leu	Pro	His	Asn	Met	Ile	Phe	Arg	Lys	Asp
		275					280					285			
Val	Gln	Gly	Ile	Ser	Gln	Phe	Leu	Phe	Leu	Phe	Phe	Ser	His	Gly	Ile
	290					295					300				
Thr	Trp	Glu	Gln	Ala	Gln	Met	Ile	Gln	Leu	Ile	Asn	Pro	Asp	Asn	Trp
305					310						315				320
Lys	Met	Leu	Cys	Gln	Phe	Asp	Lys	Ala	Gly	Gly	His	Cys	Ser	Met	Ala
				325					330					335	
Thr	Phe	Gly	Gly	Phe	Leu	Asn	Thr	Glu	Thr	Asn	Met	Phe	Asp	Pro	Val
			340					345					350		
Ser	Ser	Asn	Tyr	Glu	Pro	Thr	Val	Asn	Phe	Met	Thr	Trp	Lys	Glu	Leu
		355					360						365		
Lys	Val	Leu	Leu	Glu	Lys	Val	Lys	Glu	Ser	Pro	Met	His	Pro	Ala	Ser
	370					375					380				
Ala	Leu	Val	Gln	Lys	Ile	Cys	Val	Asn	Thr	Thr	His	His	Gln	Asn	Leu
385					390					395					400
Leu	Lys	Arg	Trp	Gln	Phe	Val	Arg	Asn	Thr	Ser	Ser	Gln	Trp	Thr	Ser
			405						410					415	
Ser	Leu	Pro	Gln	Tyr	Ala	Phe	His	Ala	Gln	Thr	Tyr	Lys	Leu	Glu	Lys
			420					425					430		
Lys	Asn	Arg	Lys	Gln	Ser	Pro	Tyr	Thr	Ile	Phe	Pro	Ile	Arg	Gly	Val
		435					440					445			

<210>371

<211>365

<212>PRT

<213>Chlamydia pneumoniae

<400>371

Ile	Lys	Glu	Phe	Asn	His	Tyr	Ser	Tyr	Cys	Tyr	Gln	Cys	His	Leu	Thr
1				5					10					15	
Leu	Arg	Thr	Leu	Ile	Ala	Phe	Leu	Cys	Val	Ala	Ala	Pro	Val	Ser	Tyr
			20					25					30		
Ile	Leu	Ser	Gly	Ala	Leu	Leu	Gly	Leu	Gly	Leu	Leu	Ile	Ala	Leu	Ile
		35					40					45			
Gly	Val	Ile	Leu	Gly	Ile	Lys	Lys	Ile	Thr	Pro	Met	Ile	Ser	Ser	Lys
	50					55					60				
Glu	Gln	Val	Phe	Pro	Gln	Glu	Leu	Val	Asn	Arg	Ile	Arg	Ala	His	Tyr
65					70					75					80
Pro	Lys	Phe	Val	Ser	Asp	Phe	Val	Ser	Glu	Ala	Lys	Pro	Asn	Leu	Lys
			85						90					95	
Asp	Leu	Ile	Ser	Phe	Ile	Asp	Leu	Leu	Asn	Gln	Leu	His	Ser	Glu	Val
			100					105					110		
Gly	Ser	Ser	Thr	Asn	Tyr	Asn	Val	Ser	Glu	Glu	Leu	Gln	Cln	Lys	Ile
		115					120					125			
Asp	Thr	Phe	Glu	Gly	Ile	Ala	Arg	Leu	Lys	Asn	Glu	Val	Arg	Thr	Ala
		130				135					140				
Ser	Leu	Lys	Arg	Leu	Glu	Ser	Ala	Ala	Ser	Ser	Arg	Pro	Leu	Phe	Pro
145					150					155					160
Ser	Leu	Pro	Lys	Ile	Leu	Gln	Lys	Val	Phe	Pro	Phe	Phe	Trp	Leu	Gly
			165					170						175	
Glu	Phe	Ile	Ser	Ala	Gly	Ser	Lys	Val	Val	Glu	Leu	His	Arg	Val	Lys

180 185 190
 Lys Ile Gly Gly Ser Leu Glu Glu Asp Leu Ser Asp Tyr Ile Lys Pro
 195 200 205
 Glu Met Leu Pro Thr Tyr Trp Leu Ile Pro Leu Asp Phe Arg Pro Thr
 210 215 220
 Asn Ser Ser Ile Leu Asn Leu His Thr Leu Val Leu Ala Arg Val Leu
 225 230 235 240
 Thr Arg Asp Val Phe Gln His Leu Lys Tyr Ala Ala Leu Asn Gly Glu
 245 250 255
 Trp Asn Leu Asn His Ser Asp Leu Asn Thr Met Lys Gln Gln Leu Phe
 260 265 270
 Ala Lys Tyr His Ala Ala Tyr Gln Ser Tyr Lys His Leu Ser Gln Pro
 275 280 285
 Ser Leu Gln Glu Asp Glu Phe Tyr Asn Leu Leu Leu Cys Ile Phe Lys
 290 295 300
 His Arg Tyr Ser Trp Lys Gln Met Ser Leu Ile Lys Thr Val Pro Ala
 305 310 315 320
 Asp Leu Trp Glu Asn Leu Cys Cys Leu Thr Leu Asp His Thr Gly Arg
 325 330 335
 Pro Gln Asp Met Glu Phe Ala Ser Leu Ile Gly Thr Leu Tyr Thr Gln
 340 345 350
 Gly Leu Ile His Lys Glu Ser Glu His Phe Phe Leu His
 355 360 365

<210>372

<211>455

<212>ERT

<213>Chlamydia pneumoniae

<400>372

Ile Arg Asp Phe Tyr Leu His Ile Ile Tyr Thr Ala Phe Asn Arg Ser
 1 5 10 15
 Ile Ser Lys Glu Leu Ala Met Ser Met Thr Ile Val Pro His Ala Leu
 20 25 30
 Phe Lys Asn His Cys Glu Cys His Ser Thr Phe Pro Leu Ser Ser Arg
 35 40 45
 Thr Ile Val Arg Ile Ala Ile Ala Ser Leu Phe Cys Ile Gly Ala Leu
 50 55 60
 Ala Ala Leu Gly Cys Leu Ala Pro Pro Val Ser Tyr Ile Val Gly Ser
 65 70 75 80
 Val Leu Ala Phe Ile Ala Phe Val Ile Leu Ser Leu Val Ile Leu Ala
 85 90 95
 Leu Ile Phe Gly Glu Lys Lys Leu Pro Pro Thr Pro Arg Ile Ile Pro
 100 105 110
 Asp Arg Phe Thr His Val Ile Asp Glu Ala Tyr Gly Leu Ser Ile Ser
 115 120 125
 Ala Phe Val Arg Glu Gln Gln Val Thr Leu Ala Glu Phe Arg Gln Phe
 130 135 140
 Ser Thr Ala Leu Leu Cys Asn Ile Ser Pro Glu Glu Lys Ile Lys Gln
 145 150 155 160
 Leu Pro Ser Glu Leu Arg Ser Lys Val Glu Ser Phe Gly Ile Ser Arg
 165 170 175
 Leu Ala Gly Asp Leu Glu Lys Asn Asn Trp Pro Ile Phe Glu Asp Leu
 180 185 190
 Leu Ser Gln Thr Cys Pro Leu Tyr Trp Leu Gln Lys Phe Ile Ser Ala
 195 200 205
 Gly Asp Pro Gln Val Cys Arg Asp Leu Gly Val Pro Arg Glu Cys Tyr
 210 215 220
 Gly Tyr Tyr Trp Leu Gly Pro Leu Gly Tyr Ser Thr Ala Lys Ala Thr
 225 230 235 240
 Ile Phe Cys Lys Glu Thr His His Ile Leu Gln Gln Leu Thr Lys Glu
 245 250 255
 Asp Val Leu Leu Lys Asn Lys Ala Leu Gln Glu Lys Trp Asp Thr
 260 265 270
 Asp Glu Val Lys Ala Ile Val Glu Arg Ile Tyr Thr Thr Tyr Thr Ala
 275 280 285

390
 <210>374
 <211>607
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>374
 Thr Leu Gln Tyr Ile Leu Lys Glu Tyr Lys Ile Glu Asn Ile Arg Asn
 1 5 10 15
 Phe Ser Ile Ile Ala His Ile Asp His Gly Lys Ser Thr Ile Ala Asp
 20 25 30
 Arg Leu Leu Glu Ser Thr Ser Thr Val Glu Glu Arg Glu Met Arg Glu
 35 40 45
 Gln Leu Leu Asp Ser Met Asp Leu Glu Arg Glu Arg Gly Ile Thr Ile
 50 55 60
 Lys Ala His Pro Val Thr Met Thr Tyr Leu Tyr Glu Gly Glu Val Tyr
 65 70 75 80
 Gln Leu Asn Leu Ile Asp Thr Pro Gly His Val Asp Phe Ser Tyr Glu
 85 90 95
 Val Ser Arg Ser Leu Ser Ala Cys Glu Gly Ala Leu Leu Ile Val Asp
 100 105 110
 Ala Ala Gln Gly Val Gln Ala Gln Ser Leu Ala Asn Val Tyr Leu Ala
 115 120 125
 Leu Glu Arg Asp Leu Glu Ile Ile Pro Val Leu Asn Lys Ile Asp Leu
 130 135 140
 Pro Ala Ala Asp Pro Val Arg Ile Ala Gln Gln Ile Glu Asp Tyr Ile
 145 150 155 160
 Gly Leu Asp Thr Thr Asn Ile Ile Ala Cys Ser Ala Lys Thr Gly Gln
 165 170 175
 Gly Ile Pro Ala Ile Leu Lys Ala Ile Ile Asp Leu Val Pro Pro Pro
 180 185 190
 Lys Ala Pro Ala Glu Thr Glu Leu Lys Ala Leu Val Phe Asp Ser His
 195 200 205
 Tyr Asp Pro Tyr Val Gly Ile Met Val Tyr Val Arg Ile Ile Ser Gly
 210 215 220
 Glu Leu Lys Lys Gly Asp Arg Ile Thr Phe Met Ala Ala Lys Gly Ser
 225 230 235 240
 Ser Phe Glu Val Leu Gly Ile Gly Ala Phe Leu Pro Lys Ala Thr Phe
 245 250 255
 Ile Glu Gly Ser Leu Arg Pro Gly Gln Val Gly Phe Phe Ile Ala Asn
 260 265 270
 Leu Lys Lys Val Lys Asp Val Lys Ile Gly Asp Thr Val Thr Lys Thr
 275 280 285
 Lys His Pro Ala Lys Thr Pro Leu Glu Gly Phe Lys Glu Ile Asn Pro
 290 295 300
 Val Val Phe Ala Gly Ile Tyr Pro Ile Asp Ser Ser Asp Phe Asp Thr
 305 310 315 320
 Leu Lys Asp Ala Leu Gly Arg Leu Gln Leu Asn Asp Ser Ala Leu Thr
 325 330 335
 Ile Glu Gln Glu Ser Ser His Ser Leu Gly Phe Gly Phe Arg Cys Gly
 340 345 350
 Phe Leu Gly Leu Leu His Leu Glu Ile Ile Phe Glu Arg Ile Ile Arg
 355 360 365
 Glu Phe Asp Leu Asp Ile Ile Ala Thr Ala Pro Ser Val Ile Tyr Lys
 370 375 380
 Val Val Leu Lys Asn Gly Lys Val Leu Asp Ile Asp Asn Pro Ser Gly
 385 390 395 400
 Tyr Pro Asp Pro Ala Ile Ile Glu His Val Glu Glu Pro Trp Val His
 405 410 415
 Val Asn Ile Ile Thr Pro Gln Glu Tyr Leu Ser Asn Ile Met Asn Leu
 420 425 430
 Cys Leu Asp Lys Arg Gly Ile Cys Val Lys Thr Glu Met Leu Asp Gln
 435 440 445
 His Arg Leu Val Leu Ala Tyr Glu Leu Pro Leu Asn Glu Ile Val Ser
 450 455 460

Asp Phe Asn Asp Lys Leu Lys Ser Val Thr Lys Gly Tyr Gly Ser Phe
 465 470 475 480
 Asp Tyr Arg Leu Gly Asp Tyr Arg Lys Gly Ser Ile Ile Lys Leu Glu
 485 490 495
 Val Leu Ile Asn Glu Glu Pro Ile Asp Ala Phe Ser Cys Leu Val His
 500 505 510
 Arg Asp Lys Ala Glu Ser Arg Gly Arg Ser Ile Cys Glu Lys Leu Val
 515 520 525
 Asp Val Ile Pro Gln Gln Leu Phe Lys Ile Pro Ile Gln Ala Ala Ile
 530 535 540
 Asn Lys Lys Val Ile Ala Arg Glu Thr Ile Arg Ala Leu Ser Lys Asn
 545 550 555 560
 Val Thr Ala Lys Cys Tyr Gly Gly Asp Ile Thr Arg Lys Arg Lys Leu
 565 570 575
 Trp His Lys Gln Lys Lys Gly Lys Lys Arg Met Lys Glu Phe Gly Lys
 580 585 590
 Val Ser Ile Pro Asn Thr Ala Phe Ile Glu Val Leu Lys Leu Asp
 595 600 605
 <210>375
 <211>332
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>375
 Gly Val Ala Ile Ser Gly Ser Tyr Phe Ser Ile Asn Ser Ser Lys Ser
 1 5 10 15
 Thr Gly Pro Ser Leu Leu Phe Leu Gly Arg Asn Trp Arg Cys Arg Pro
 20 25 30
 Leu Cys Lys Gly Cys Ser Gln Trp Tyr Arg Ile Arg Arg Tyr Pro Val
 35 40 45
 Asp Met Arg Thr Tyr Gly Ile Leu Arg Asp Phe Leu Lys Leu Ser Ala
 50 55 60
 Thr Ala Val Ala Thr Ile Leu Lys Glu Trp Asn Thr Leu Glu Leu Glu
 65 70 75 80
 Ser Tyr Leu Ile Arg Ile Ala Ser Glu Val Leu Ala Leu Lys Asp Pro
 85 90 95
 Glu Gly Ile Pro Val Ile Asp Thr Ile Leu Asp Val Val Gly Gln Lys
 100 105 110
 Gly Thr Gly Lys Trp Thr Ala Ile Asp Ala Leu Asn Ser Gly Val Pro
 115 120 125
 Leu Ser Leu Ile Ile Gly Ala Val Leu Ala Arg Phe Leu Ser Ser Trp
 130 135 140
 Lys Glu Ile Arg Glu Gln Ala Ala Arg Asn Tyr Pro Gly Thr Pro Leu
 145 150 155 160
 Ile Phe Glu Met Pro His Asp Pro Ser Val Phe Ile Gln Asp Val Phe
 165 170 175
 His Ala Leu Tyr Ala Ser Lys Ile Ile Ser Tyr Ala Gln Gly Phe Met
 180 185 190
 Leu Leu Gly Glu Ala Ser Lys Glu Tyr Asn Trp Gly Leu Asp Leu Gly
 195 200 205
 Glu Ile Ala Leu Met Trp Arg Gly Gly Cys Ile Ile Gln Ser Ala Phe
 210 215 220
 Leu Asp Val Ile His Lys Gly Phe Ala Ala Asn Pro Glu Asn Thr Ser
 225 230 235 240
 Leu Ile Phe Gln Glu Tyr Phe Arg Gly Ala Leu Arg His Ala Glu Met
 245 250 255
 Gly Trp Arg Arg Thr Val Val Thr Ala Ile Gly Ala Gly Leu Pro Ile
 260 265 270
 Pro Cys Leu Ala Ala Ala Ile Thr Phe Tyr Asp Gly Tyr Arg Thr Ala
 275 280 285
 Ser Ser Ser Met Ser Leu Ala Gln Gly Leu Arg Asp Tyr Phe Gly Ala
 290 295 300
 His Thr Tyr Glu Arg Asn Asp Arg Pro Arg Gly Glu Phe Tyr His Thr
 305 310 315 320
 Asp Trp Val His Thr Lys Thr Thr Glu Arg Val Lys

<210>376

<211>304

<212>PRT

<213>Chlamydia pneumoniae

<400>376

Val Ala Leu Gln Thr Asn Ile Gly Leu Ile Gly Leu Ala Val Met Gly
 1 5 10 15
 Lys Asn Leu Val Leu Asn Met Ile Asp His Gly Phe Ser Val Ser Val
 20 25 30
 Tyr Asn Arg Thr Pro Glu Lys Thr Arg Asp Phe Leu Lys Glu Tyr Pro
 35 40 45
 Asn His Arg Glu Leu Val Gly Phe Glu Ser Leu Glu Asp Phe Val Asn
 50 55 60
 Ser Leu Glu Arg Pro Arg Lys Ile Met Leu Met Ile Gln Ala Gly Lys
 65 70 75 80
 Pro Val Asp Gln Ser Ile His Ala Leu Leu Pro Phe Leu Glu Pro Gly
 85 90 95
 Asp Val Ile Ile Asp Gly Gly Asn Ser Tyr Phe Lys Asp Ser Glu Arg
 100 105 110
 Arg Cys Lys Glu Leu Gln Glu Lys Gly Ile Leu Phe Leu Gly Val Gly
 115 120 125
 Ile Ser Gly Gly Glu Glu Gly Ala Arg His Gly Pro Ser Ile Met Pro
 130 135 140
 Gly Gly Asn Pro Glu Ala Trp Pro Leu Val Ala Pro Ile Phe Gln Ser
 145 150 155 160
 Ile Ala Ala Lys Val Gln Gly Arg Pro Cys Cys Ser Trp Val Gly Thr
 165 170 175
 Gly Gly Ala Gly His Tyr Val Lys Ala Val His Asn Gly Ile Glu Tyr
 180 185 190
 Gly Asp Ile Gln Leu Ile Cys Glu Leu Thr Val Ser
 195 200

<210>377

<211>422

<212>PRT

<213>Chlamydia pneumoniae

<400>377

Leu Ala Ile Leu Asn Tyr Val Arg Ser Leu Met Gln Ser Trp Leu Gln
 1 5 10 15
 Ser Leu Gln Glu Arg Asn Ile Leu Glu Asn Phe Thr Ala Gly Leu Glu
 20 25 30
 Ser Val Glu Gly Pro Ile Ala Ala Tyr Leu Gly Phe Asp Pro Thr Ala
 35 40 45
 Pro Ala Leu His Ile Gly His Trp Ile Gly Ile Cys Phe Leu Lys Arg
 50 55 60
 Leu Ala Ala Leu Gly Ile Thr Pro Ile Ala Leu Val Gly Gly Ala Thr
 65 70 75 80
 Gly Met Val Gly Asp Pro Ser Gly Lys Gln Ser Glu Arg Ser Leu Leu
 85 90 95
 Gln Thr Ser Glu Val Phe Asp Asn Ser Gln Lys Ile Thr Ala Cys Leu
 100 105 110
 Gln Arg Tyr Leu Pro Gly Val Thr Leu Val Asn Asn Ala Asp Trp Leu
 115 120 125
 Gln Glu Ile Ser Leu Ile Asp Phe Leu Arg Asp Ile Gly Lys His Phe
 130 135 140
 Arg Leu Gly Gln Met Leu Val Lys Asp Thr Ile Lys Gln Arg Val His
 145 150 155 160
 Ser Asp Glu Gly Ile Ser Tyr Thr Glu Phe Ser Tyr Leu Ile Leu Gln
 165 170 175
 Ser Tyr Asp Phe Tyr His Leu Phe Lys Asn Tyr Gly Thr Ile Leu Gln
 180 185 190
 Cys Gly Gly Ser Asp Gln Trp Gly Asn Ile Thr Ser Gly Ile Asp Phe
 195 200 205
 Ile Arg Arg Lys Gly Leu Gly Gln Ala Tyr Gly Leu Thr Tyr Pro Leu

210	315	230
Leu Thr Asn Ala Gln Gly Lys Lys Ile Gly Lys Thr Glu Ser Gly Thr		
235	310	235
Val Trp Leu Asp Ser Asp Leu Thr Ser Pro Phe Glu Leu Tyr Gln Tyr		240
245	250	255
Leu Leu Arg Leu Pro Asp Asp Thr Ile Pro Lys Ile Ala Arg Thr Leu		270
260	265	270
Thr Leu Leu Ser Asn Glu Glu Ile Gln Asp Ile Asp Arg Arg Val Gln		285
275	280	285
Thr Asp Pro Val Ala Val Lys Glu Phe Val Ala Gln Asp Ile Leu Ser		300
290	295	300
Ala Ile His Gly Asp Leu Gly Leu Glu Glu Ala Leu Ser Val Thr Arg		320
305	310	315
Ser Met His Pro Gly Asn Leu Ser Ser Leu Ser Glu Lys Asp Phe His		335
325	330	335
Glu Leu Phe Ala Gly Gly Met Gly Ala Ser Leu Asp Lys Ser Glu Val		350
340	345	350
Leu Gly Lys Arg Trp Leu Asp Leu Phe Leu Val Leu Gly Leu Cys Lys		365
355	360	365
Ser Lys Gly Glu Ile Arg Arg Leu Ile Glu Gln Lys Gly Val Tyr Ile		380
370	375	380
Asn Asn Val Pro Ile Ala Asn Glu His Ser Val Cys Glu Glu Gln Asp		400
385	390	395
Ile Cys Tyr Gly His Tyr Val Leu Leu Ala Gln Gly Lys Lys Arg Lys		415
405	410	415
Leu Val Leu Tyr Leu Asn		
420		

<210>378

<211>103

<212>PRT

<213>Chlamydia pneumoniae

<400>376

Val Ala Met Ser Thr Ser Pro Ile Gly Val Pro Ser Met Leu Asn Ala		
1	5	10
Ala Thr Ser Leu Asn Ala Thr Thr Ser Lys Ala Pro Leu Pro Thr Ser		15
20	25	30
Thr Leu Ala Glu Arg Ile Lys Glu Trp Leu Pro Arg Ile Leu Leu Leu		45
35	40	45
Ile Val Gly Ala Ile Phe Thr Ile Ala Gly Cys Ile Val Met Ala Leu		60
50	55	60
Thr Lys Gln Ile Leu Tyr Gly Leu Leu Cys Val Val Gly Gly Leu Leu		80
65	70	75
Leu Ala Leu Gly Leu Leu Lys Pro Glu Asn Cys Ile Tyr Arg Asn		95
85	90	95
Ala Glu Ser Leu Arg Glu Ala		
100		

<210>379

<211>291

<212>PRT

<213>Chlamydia pneumoniae

<400>379

Leu Asp Lys Lys Lys Phe Val Lys Thr Gln Gln Thr Gln Asn Ile Ile		
1	5	10
Glu Val Trp Asn Phe Tyr Trp Glu Thr Gln Glu Ile Glu Tyr Arg Asp		15
20	25	30
Ser Leu Ile Glu Phe Tyr Leu Pro Leu Val Lys Ser Val Val His Arg		45
35	40	45
Leu Ile Ser Gly Met Pro Ser His Val Lys Thr Glu Asp Leu Tyr Ala		60
50	55	60
Ser Gly Val Glu Gly Leu Val Arg Ala Val Glu Arg Tyr Asn Pro Glu		80
65	70	75
Arg Ser Arg Arg Phe Glu Gly Tyr Ala Val Phe Leu Ile Lys Ala Ala		95
85	90	95
Ile Ile Asp Asp Leu Arg Lys Gln Asp Trp Val Pro Arg Ser Val His		

100 105 110
 Gln Lys Ala Asn Lys Leu Ser Gly Ala Met Asp Ser Leu Arg Gln Ser
 115 120 125
 Leu Gly Lys Glu Pro Thr Asp Leu Glu Leu Cys Glu Tyr Leu Asn Ile
 130 135 140
 Ser Gln Gln Glu Leu Ser Gly Trp Phe Val Ser Ala Arg Pro Ala Leu
 145 150 155 160
 Ile Val Ser Leu Asn Glu Glu Trp Pro Ser Gln Ser Asp Glu Gly Ala
 165 170 175
 Gly Met Ala Leu Glu Glu Arg Ile Pro Asp Glu Arg Ala Glu Thr Gly
 180 185 190
 Tyr Asp Val Val Asp Lys Gln Glu Phe Ser Leu Cys Leu Ala Asn Ala
 195 200 205
 Ile Gln Glu Leu Glu Glu Lys Glu Arg Lys Val Met Ala Leu Tyr Tyr
 210 215 220
 Tyr Glu Glu Leu Val Leu Lys Glu Ile Gly Lys Val Leu Gly Val Ser
 225 230 235 240
 Glu Ser Arg Val Ser Gln Ile His Ser Lys Ala Leu Leu Lys Leu Arg
 245 250 255
 Ala Arg Ser Leu His Phe Asp Lys Tyr Ser Ser Gln Val Leu Arg Ala
 260 265 270
 Val Leu Glu Leu Gly Glu Ala Leu Leu Arg His Arg Val Ile Arg Lys
 275 280 285
 Glu Phe Val
 290
 <210>280
 <211>544
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>380
 Phe Cys Ile Val Phe Thr Asn Gly Leu Leu Gly Leu Tyr Leu Lys Phe
 1 5 10 15
 Lys Gln Phe Ser Glu Val Phe Pro Pro Phe Phe Leu Tyr Leu Cys Leu
 20 25 30
 Leu Arg Leu Gly Leu Asn Leu Ala Ser Thr Arg Trp Ile Val Ser Ser
 35 40 45
 Gly Thr Ala Ser Ser Leu Ile Val Ser Leu Gly Ser Phe Phe Ser Leu
 50 55 60
 Gly Ser Leu Trp Ala Ala Thr Phe Ala Cys Leu Leu Leu Phe Phe Val
 65 70 75 80
 Asn Phe Leu Met Val Ser Lys Gly Ser Glu Arg Ile Ala Glu Val Arg
 85 90 95
 Ser Arg Phe Phe Leu Glu Ala Leu Pro Ala Lys Gln Met Ala Leu Asp
 100 105 110
 Ser Asp Leu Val Ser Gly Arg Ala Ser Tyr Lys Ala Val Lys Lys Gln
 115 120 125
 Lys Asn Ala Leu Ile Glu Glu Gly Asp Phe Phe Ser Ala Met Glu Gly
 130 135 140
 Val Phe Arg Phe Val Lys Gly Asp Ala Ile Ile Ser Cys Ile Leu Leu
 145 150 155 160
 Leu Val Asn Val Val Ser Val Thr Cys Leu Tyr Tyr Thr Ser Gly Tyr
 165 170 175
 Ala Leu Glu Gln Met Trp Phe Thr Val Leu Gly Asp Ala Leu Val Ser
 180 185 190
 Gln Val Pro Ala Leu Leu Thr Ser Cys Ala Ala Ala Thr Leu Ile Ser
 195 200 205
 Lys Ile Asp Lys Glu Glu Ser Leu Leu Asn Tyr Leu Phe Glu Tyr Tyr
 210 215 220
 Lys Gln Leu Arg Gln His Phe Arg Val Val Ser Leu Leu Ile Phe Ser
 225 230 235 240
 Leu Cys Cys Ile Pro Ser Ser Pro Lys Phe Pro Ile Val Leu Leu Ala
 245 250 255
 Ser Leu Leu Trp Leu Ala Tyr Arg Lys Glu Glu Pro Ala Ser Glu Asp
 260 265 270

Ser Cys Ile Glu Arg Ala Phe Ser Tyr Val Glu Gly Ala Cys Pro Lys
 275 280 285
 Glu Gln Glu Ser Gln Phe Tyr Gln Val Tyr Arg Ala Ala Ser Glu Glu
 290 295 300
 Val Phe Glu Asp Leu Gly Val Arg Leu Pro Val Leu Thr Ser Leu Arg
 305 310 315 320
 Ile Glu Glu Arg Pro Trp Leu Arg Val Phe Gly Gln Asn Val Tyr Leu
 325 330 335
 Asp Glu Met Thr Pro Glu Ala Val Leu Pro Phe Leu Arg Asn Ile Ala
 340 345 350
 His Glu Ala Leu Asn Ala Glu Val Val Gln Lys Tyr Leu Glu Glu Ser
 355 360 365
 Gln Arg Val Phe Gly Ile Ala Val Glu Asp Ile Val Pro Lys Lys Ile
 370 375 380
 Ser Leu Ser Ser Leu Val Val Leu Ser Arg Leu Leu Val Arg Glu Arg
 385 390 395 400
 Val Ser Leu Lys Leu Xaa Pro Lys Ile Leu Glu Ala Val Ala Val Tyr
 405 410 415
 Gln Asn Ser Gly Asp Ser Leu Glu Ile Leu Ala Glu Lys Val Arg Lys
 420 425 430
 Ser Leu Gly Tyr Trp Ile Gly Arg Ser Leu Trp Asp Gln Lys Gln Thr
 435 440 445
 Leu Glu Val Ile Thr Ile Asp Phe His Val Glu Glu Leu Ile Asn Ser
 450 455 460
 Ser Tyr Ser Lys Ser Asn Pro Val Met Gln Glu Asn Val Ile Arg Arg
 465 470 475 480
 Val Asp Ser Leu Leu Glu Arg Ser Val Phe Lys Asp Phe Arg Ala Ile
 485 490 495
 Val Thr Ser Cys Glu Thr Arg Phe Glu Met Lys Lys Met Leu Asp Pro
 500 505 510
 His Phe Pro Asp Leu Leu Val Leu Ser His Asp Glu Leu Pro Lys Glu
 515 520 525
 Ile Pro Ile Ser Phe Leu Gly Ile Val Ser Asp Glu Val Leu Val Pro
 530 535 540

<210>381

<211>93

<212>PRT

<213>Chlamydia pneumoniae

<400>381

Met Ala Lys Leu Val Ile Thr Ser Asp Asp Glu Gln Gln Glu Phe Glu
 1 5 10 15
 Leu Glu Asp Asn Ser Glu Ile Ala Glu Pro Cys Glu Ser Met Gly Ile
 20 25 30
 Pro Phe Ala Cys Thr Glu Gly Val Cys Gly Thr Cys Val Glu Glu Val
 35 40 45
 Leu Glu Gly Arg Glu Asn Leu Ser Glu Phe Thr Glu Pro Glu Tyr Asp
 50 55 60
 Phe Leu Gly Glu Pro Glu Asp Ser Asn Glu Arg Leu Ala Cys Gln Cys
 65 70 75 80
 Arg Ile Lys Gly Gly Cys Val Lys Val Thr Phe
 85 90

<210>382

<211>191

<212>PRT

<213>Chlamydia pneumoniae

<400>382

Phe Lys Gly Thr Gln Val Asn Ser Leu Ile Met Ala Thr Ile Ser Pro
 1 5 10 15
 Ile Ser Leu Thr Val Asp His Pro Leu Val Asp Thr Lys Lys Lys Ser
 20 25 30
 Cys Ser Asn Phe Asp Lys Ile Gln Ser Arg Ile Leu Leu Ile Thr Ala
 35 40 45
 Ile Phe Ala Val Leu Val Thr Ile Gly Thr Leu Leu Ile Gly Leu Leu
 50 55 60

Leu Asn Ile Pro Val Ile Tyr Phe Leu Thr Gly Ile Ser Phe Ile Ala
 65 70 75 80
 Val Val Leu Ser Asn Phe Ile Leu Tyr Lys Arg Ala Thr Thr Leu Leu
 85 90 95
 Lys Pro Arg Ala Cys Gly Lys His Lys Glu Ile Lys Pro Lys Arg Val
 100 105 110
 Ser Thr Asn Leu Gln Tyr Ser Ser Ile Ser Ile Ala Ile Asn Arg Ser
 115 120 125
 Lys Glu Asn Trp Glu His Gln Pro Lys Asp Leu Gln Asn Leu Pro Ala
 130 135 140
 Pro Ser Ala Leu Leu Thr Asp Asn Pro Tyr Glu Ile Trp Lys Ala Lys
 145 150 155 160
 His Ser Leu Phe Ser Leu Val Ser Leu Leu Pro Gly Gly Asn Pro Lys
 165 170 175
 Thr Ser Leu Lys Phe Lys Leu Pro Lys Ile Tyr Glu Arg Leu Cys
 180 185 190

<210>383

<211>158

<212>PRT

<213>Chlamydia pneumoniae

<400>383

Leu Lys Lys Pro Arg Lys Met Arg Leu Tyr Pro Pro Tyr Val Asp Thr
 1 5 10 15
 Thr Pro Ser Pro Lys Ser Leu Leu Asn Glu Ala Ile Gln Glu Thr Arg
 20 25 30
 Val Glu Ile Asn Thr Glu Leu Pro Ala Gly Asp Ser Gly Glu Arg Leu
 35 40 45
 Tyr Trp Gln Pro Asp Phe Arg Gly Arg Val Phe Leu Pro Gln Ile Pro
 50 55 60
 Thr Thr Pro Glu Ala Ile Tyr Gln Tyr Tyr Tyr Ala Leu Tyr Val Thr
 65 70 75 80
 Tyr Ile Gln Thr Ala Ile Asn Thr Asn Thr Gln Ile Ile Gln Ile Pro
 85 90 95
 Leu Tyr Ser Leu Arg Glu His Leu Tyr Ser Arg Glu Leu Pro Pro Gln
 100 105 110
 Ser Arg Met Gln Gln Ser Leu Ala Met Ile Thr Ala Val Lys Tyr Met
 115 120 125
 Ala Glu Leu His Pro Glu Tyr Pro Leu Thr Ile Ala Cys Val Glu Arg
 130 135 140
 Ser Leu Ala Gln Leu Pro Gln Glu Ser Ile Glu Asp Leu Ser
 145 150 155

<210>384

<211>155

<212>PRT

<213>Chlamydia pneumoniae

<400>384

Met Gly Tyr Leu Pro Val Ser Ala Thr Asp Val Leu Phe Glu Ser Pro
 1 5 10 15
 Ala Ala Pro Leu Ile Asn Ser Ala Asn Thr Gln Asn Gln Lys Leu Ile
 20 25 30
 Glu Leu Lys Gly Lys Gln Gln Ala Glu Ser Ser Pro Arg Thr Ile Thr
 35 40 45
 Ser Val Ile Leu Glu Val Leu Leu Val Ile Gly Cys Cys Leu Ile Val
 50 55 60
 Leu Ser Leu Leu Ala Ile Arg Pro Ala Leu Gln Phe Thr Leu Glu Thr
 65 70 75 80
 Gly His Pro Ala Ala Ile Ala Val Leu Ala Val Ser Gly Thr Ile Leu
 85 90 95
 Leu Val Ala Val Ile Ile Leu Phe Cys Phe Leu Ala Ala Val Pro Phe
 100 105 110
 Ala Ala Lys Lys Thr Tyr Lys Tyr Val Lys Thr Val Asp Asp Tyr Ala
 115 120 125
 Ser Trp His Ser His Gln Gln Thr Pro Thr Leu Gly Thr Ile Phe Ser
 130 135 140

Gly Ile Val Tyr Ala Glu Ser Gln Ala Gln Leu
 145 150 155
 <210>385
 <211>253
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>385
 Ser Phe Pro Leu Asn Arg Tyr Phe Met Thr Lys Thr Thr Ser Ile Pro
 1 5 10 15
 Asp Val His Glu Asn Gln Ser His Leu Ser Val Asp Glu Arg Leu Ile
 20 25 30
 Ser Glu Ser Pro Val Leu Thr Lys Lys Glu Val Ile Ala Lys Ile Ile
 35 40 45
 Lys Leu Thr Ala Leu Ile Leu Ala Leu Ala Ile Ala Val Gly Thr Ala
 50 55 60
 Val Val Ala Gly Val Leu Gly Met Pro Leu Met Ala Ile Ala Thr Gly
 65 70 75 80
 Ala Ala Leu Leu Ala Ala Val Val Leu Ser Cys Leu Leu Leu Arg Arg
 85 90 95
 Arg Glu Pro Ser Lys Pro Thr Glu Glu Leu Leu Gly Pro Gln Lys His
 100 105 110
 Val Pro Lys Asp Ile Ala Ala Gln Val Gln Pro Ser Val Pro Leu Asp
 115 120 125
 Tyr Gln Lys Leu Leu Arg Asn Glu Trp Thr Leu Val Asn Thr Leu Ser
 130 135 140
 Glu Ile Asn Ile Ser Trp Thr Leu Gln Asp Pro Asn Gln Arg Tyr Tyr
 145 150 155 160
 Val Trp Glu His Gln Gly Ala Pro Ile Thr Leu Val Ala Thr Thr Gly
 165 170 175
 Asp Ile Ala Lys Pro Arg Leu Lys Thr Ser Gly Arg Val Met Ile Val
 180 185 190
 Asn Ala Ala Asn Ser Asn Met Gln Ser Gly Gly Ala Gly Thr Asn Ala
 195 200 205
 Ala Leu Ser Ala Ala Thr His Pro Thr Cys Trp Asn Asn Thr Arg Thr
 210 215 220
 Ser Gly Gly Lys Ile Asn Thr Gly Lys Gly Leu Ser Val Gly Glu Cys
 225 230 235 240
 Arg Ser Ala Pro Trp Ile Asn Arg Asp Trp Thr Asn Lys
 245 250

<210>386
 <211>114
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>386

Thr Leu Ala Lys Asp Tyr Leu Trp Val Asn Ala Ala Gln His Pro Gly
 1 5 10 15
 Ser Ile Glu Thr Gly Arg Ile Asn Asp Thr Asn Pro Gly Glu Ala His
 20 25 30
 Phe Leu Ala Gln Leu Leu Gly Pro Lys Tyr Glu Gly Glu Leu Lys Ala
 35 40 45
 His Pro Glu Lys Leu Ser Asn Val Ile Lys Lys Ala Tyr Leu Asn Cys
 50 55 60
 Phe Asp Glu Ala Leu Asn Asn Gln Ala Thr Val Val Gln Val Pro Leu
 65 70 75 80
 Ile Ser Ser Ser Ile Tyr Ser Pro Gly Gly Lys Leu Glu Leu Glu Pro
 85 90 95
 Val Asn Gln Thr Lys Pro Asn Ser Ser Ala Tyr Lys Leu Tyr His Ile
 100 105 110
 Arg Thr

<210>387
 <211>406
 <212>PRT
 <213>Chlamydia pneumoniae

<400>387

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Asn Ile Met Thr Asp Ser Asn Pro Leu Pro Ser Tyr Thr Asp Ala Ser
 1           5           10           15
Leu Tyr Arg Thr Pro Ala Lys His Ser Tyr Pro Ile Arg Leu Pro Leu
          20           25           30
Asn Arg Thr Asp Arg Ile Glu Lys Ile Leu Lys Ile Val Thr Leu Thr
          35           40           45
Leu Ala Leu Ala Cys Ala Leu Gly Phe Ser Ile Ala Ala Gly Ile Leu
          50           55           60
Ala Met Pro Ile Phe Ser Ala Val Val Val Ile Thr Leu Ala Ile Ala
          65           70           75           80
Ala Val Ser Leu Tyr Ser Leu Leu Lys Lys Pro Lys Leu Tyr Glu Ile
          85           90           95
Leu Pro Gln Ile Glu Pro Glu Ser Glu Gln Ser Ser Leu Ser Pro Ser
          100          105          110
Pro Gln Pro Pro Glu Gln Gln Asp Leu Pro Leu Gln Ile Asp Pro Leu
          115          120          125
Pro Asp Pro Glu Ser Leu Pro Glu Val Ser Leu Ala Asp Leu Thr Thr
          130          135          140
Pro Pro Glu Glu Leu Thr Ala Ile Thr Val Thr Pro Gly Tyr Glu Ala
          145          150          155          160
Leu Leu Glu Gln Asn Trp Asp Leu Leu Pro Ser Leu Ala Ala Val Asp
          165          170          175
Pro Ser Phe Thr Thr Glu Thr Pro Gln Gln Pro Cys Phe Ile Trp Lys
          180          185          190
Leu Lys Asp Ser Lys Leu Ile Phe Ile Ser Thr Ser Gly Asp Ile Ala
          195          200          205
Val Pro Arg Ile Lys Thr Gln Gly Arg Val Met Ile Val Asn Ala Ala
          210          215          220
Asn Glu Asn Ile Ser Arg Glu Gly Gly Gly Thr Asn Lys Ala Leu Ser
          225          230          235          240
Leu Ala Thr Ser Leu Gln Cys Trp Asn Ala Ser Arg Leu Pro Arg Ala
          245          250          255
His Ser Arg Ser Gly Ser Gln Leu Gln Pro Gly Glu Cys Arg Ser Ala
          260          265          270
Lys Trp Glu Asn Ser Asp His Thr Ser Asn Asp His Val Pro Gly Lys
          275          280          285
Ala His Phe Leu Ala Gln Leu Leu Gly Pro Glu Ala Ala Lys Cys Asn
          290          295          300
Asn Asp Pro Lys Gln Ala Phe Glu Val Ser Lys Lys Ala Phe His Asn
          305          310          315          320
Leu Phe Gln Glu Ala Glu Ile Ile Gly Val Asp Val Ile Gln Leu Pro
          325          330          335
Leu Ile Gly Cys Asn Leu Phe Ala Pro Ser Arg Leu Leu Asn Leu Gly
          340          345          350
Lys Thr Arg Ala Glu Trp Ile Glu Ala Ile Lys Leu Ala Leu Ile Thr
          355          360          365
Ser Leu Gln Asp Phe Gly Trp Glu Gln Asp Asn Gln Glu Glu Gln Lys
          370          375          380
Ile Ile Ile Leu Thr Asp Lys Asp Gln Pro Pro Ile Ile Pro Pro Arg
          385          390          395          400
Phe Asp Leu Thr Thr Pro
          405

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<210>388

<211>386

<212>PRT

<213>Chlamydia pneumoniae

<400>388

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Lys Arg Ile Phe Phe Lys Leu Phe Val Phe Tyr Leu Lys Ser Phe Met
 1           5           10           15
Ser Thr Thr Glu Pro Asn Leu Thr Asn Val Asn Leu Thr Met Leu Ile
          20           25           30
Ser Ser Glu Ser Met Pro Thr Gln Leu Ala Ser His Lys Leu Lys Gly
          35           40           45

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Leu Asp Leu Val Ala Phe Ile Leu Ile Ile Gly Ile Ala Val Ser Ser
 50 55 60
 Gly Thr Ala Ala Ile Ile Leu Gly Ile Pro Leu Leu Phe Ile Leu Thr
 65 70 75 80
 Ala Leu Ala Val Leu Ala Phe Ser Ile Leu Leu Tyr Phe Leu Leu Arg
 85 90 95
 Glu Pro Lys Ser Pro Ile Ser Val Thr His Gln Pro Thr Pro Ile Ile
 100 105 110
 Lys Asp Thr Asp Leu Pro Pro Val Pro Pro Leu Ala Leu Thr Pro Val
 115 120 125
 Pro Thr Glu Ala Val Leu Glu Glu Pro Pro Leu Pro Ser Pro Arg Thr
 130 135 140
 His Gln Thr Leu Leu Gln Glu Asn Trp Asp Arg Ile Pro Asp Leu Gln
 145 150 155 160
 Ala Asn Thr Asp Met Pro Phe Ile Ala Ala Asp Asn Gln Thr Gly Tyr
 165 170 175
 Ala Trp His Leu Lys Asn Ser Asn Leu Thr Leu Ile Ser Thr Leu Gly
 180 185 190
 Pro Ile Glu Lys Pro Arg Tyr Lys Thr Gln Gly Ile Val Met Ile Val
 195 200 205
 Asn Ala Ala Thr Pro Asn Met Ala Asn Asn Val Lys Gly Thr Ser Leu
 210 215 220
 Ala Leu Ala Lys Ala Thr Ser Val Arg Cys Trp Glu Asn Ser Lys Lys
 225 230 235 240
 Ser Pro Asp Pro Leu Arg Ser Lys Gln Pro Leu Gln Leu Gly Glu Cys
 245 250 255
 Arg Ser Ala Lys Trp Glu Asn Leu Asn Gly Thr Thr Asn Ala Gly Lys
 260 265 270
 Ala Gly Leu Pro Gln Phe Leu Gly Gln Leu Leu Gly Pro Lys Ala Ser
 275 280 285
 Asp Tyr Asn Tyr Asn Pro Asn Asp Ala Phe Thr Phe Cys Arg Gln Ala
 290 295 300
 Tyr Leu Asn Cys Leu Asn Glu Ala Lys Arg Arg Lys Thr Thr Val Val
 305 310 315 320
 Gln Leu Pro Leu Leu Ser Ser His Phe Pro Gly Ser Pro Lys Asp Glu
 325 330 335
 Glu Thr Thr Ser Leu Arg Leu Gln Trp Ile Asp Gly Val Lys Leu Ala
 340 345 350
 Leu Ile Asp Ala Leu Gln Thr Phe Gly Ser Glu Ala Glu Asn Gln Asn
 355 360 365
 Glu Pro Trp Val Ile Ile Leu Thr Thr Leu Ala Arg His Pro Leu Ile
 370 375 380
 Thr Pro
 385
 <310>389
 <211>621
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>369
 Asn Ser Glu Ile Phe Glu Ile Phe Met Thr Leu Ile Thr Pro Ala Ile
 1 5 10 15
 Asn Ser Ser Arg Arg Lys Thr His Thr Val Arg Ile Gly Asn Leu Tyr
 20 25 30
 Ile Gly Ser Asp His Ser Ile Lys Thr Gln Ser Met Thr Thr Thr Leu
 35 40 45
 Thr Thr Asp Ile Asp Ser Thr Val Glu Gln Ile Tyr Ala Leu Ala Glu
 50 55 60
 His Asn Cys Asp Ile Val Arg Val Thr Val Gln Gly Ile Lys Glu Ala
 65 70 75 80
 Gln Ala Cys Glu Lys Ile Lys Glu Arg Leu Ile Ala Leu Gly Leu Asn
 85 90 95
 Ile Pro Leu Val Ala Asp Ile His Phe Pro Gln Ala Ala Met Leu
 100 105 110
 Val Ala Asp Phe Ala Asp Lys Val Arg Ile Asn Pro Gly Asn Tyr Ile

115	120	125
Asp Lys Arg Asn Met Phe	Lys Gly Thr Lys Ile Tyr	Thr Glu Ala Ser
130	135	140
Tyr Ala Gln Ser Leu Leu	Arg Leu Glu Glu Lys Phe	Ala Pro Leu Val
145	150	155
Glu Lys Cys Lys Arg Leu	Gly Lys Ala Met Arg Ile	Gly Val Asn His
165	170	175
Gly Ser Leu Ser Glu Arg	Ile Met Gln Lys Tyr Gly	Asp Thr Ile Glu
180	185	190
Gly Met Val Ala Ser Ala	Ile Glu Tyr Ile Ala Val	Cys Glu Lys Leu
195	200	205
Asn Tyr Arg Asp Val Val	Phe Ser Met Lys Ser Ser	Asn Pro Lys Ile
210	215	220
Met Val Thr Ala Tyr Arg	Gln Leu Ala Lys Asp Leu	Asp Ala Arg Gly
225	230	235
Trp Leu Tyr Pro Leu His	Leu Gly Val Thr Glu Ala	Gly Met Gly Val
245	250	255
Asp Gly Ile Ile Lys Ser	Ala Val Gly Ile Gly Thr	Leu Leu Ala Glu
260	265	270
Gly Leu Gly Asp Thr Ile	Arg Cys Ser Leu Thr Gly	Cys Pro Thr Thr
275	280	285
Glu Ile Pro Val Cys Asp	Ser Leu Leu Arg His Thr	Lys Ile Tyr Leu
290	295	300
Asp Leu Pro Glu Lys Lys	Asn Pro Phe Ser Leu Gln	His Ser Glu Asn
305	310	315
Phe Val Ser Ala Ala Glu	Lys Pro Ala Lys Thr Thr	Leu Trp Gly Asp
325	330	335
Val Tyr Gly Val Phe Leu	Lys Leu Tyr Pro His His	Leu Thr Asp Phe
340	345	350
Thr Pro Glu Glu Leu Leu	Glu His Leu Gly Val Asn	Pro Val Thr Lys
355	360	365
Glu Lys Ala Phe Thr Thr	Pro Glu Gly Val Val Val	Pro Pro Glu Leu
370	375	380
Lys Asp Ala Pro Ile Thr	Asp Val Leu Arg Glu His	Phe Leu Val Phe
385	390	395
His His His Gln Val Pro	Cys Leu Tyr Glu His Asn	Glu Glu Ile Trp
405	410	415
Asp Ser Pro Ala Val His	Gln Ala Pro Phe Val His	Phe His Ala Ser
420	425	430
Asp Pro Phe Ile His Thr	Ser Arg Asp Phe Phe Glu	Lys Gln Gly His
435	440	445
Gln Gly Lys Pro Thr Lys	Leu Val Phe Ser Arg Asp	Phe Asp Asn Lys
450	455	460
Glu Glu Ala Ala Ile Ser	Ile Ala Thr Glu Phe Gly	Ala Leu Leu Leu
465	470	475
Asp Gly Leu Gly Glu Ala	Val Val Leu Asp Leu Pro	Asn Leu Pro Leu
485	490	495
Gln Asp Val Leu Lys Ile	Ala Phe Gly Thr Leu Gln	Asn Ala Gly Val
500	505	510
Arg Leu Val Lys Thr Glu	Tyr Ile Ser Cys Pro Met	Cys Gly Arg Thr
515	520	525
Leu Phe Asp Leu Glu Glu	Val Thr Thr Arg Ile Arg	Lys Arg Thr Gln
530	535	540
His Leu Pro Gly Leu Lys	Ile Ala Ile Met Gly Cys	Ile Val Asn Gly
545	550	555
Pro Gly Glu Met Ala Asp	Ala Asp Phe Gly Phe Val	Gly Ser Lys Thr
565	570	575
Gly Met Ile Asp Leu Tyr	Val Lys His Thr Cys Val	Lys Ala His Ile
580	585	590
Pro Met Glu Asp Ala Glu	Glu Glu Leu Ile Arg Leu	Leu Gln Glu His
595	600	605
Gly Val Trp Lys Asp Pro	Glu Glu Thr Lys Leu Thr	Val
610	615	620

<210>390

<211>251

<212>PRT

<213>Chlamydia pneumoniae

<400>390

Val	Asp	Ser	Met	Thr	Leu	Ser	Phe	His	Thr	His	Pro	Leu	Asn	Tyr	Trp
1				5					10					15	
Thr	Phe	Glu	Glu	Phe	Asp	Gly	Leu	Pro	Ile	Arg	His	Gly	Val	Phe	Ser
		20						25					30		
Lys	Gln	Lys	Asp	Ala	Glu	Gly	Thr	Val	Phe	Ala	Ala	Lys	Asn	Pro	Glu
		35					40					45			
Ile	Ala	Ser	Ala	Leu	Gln	Ser	Pro	Lys	Tyr	Cys	Asp	Leu	His	Gln	Arg
	50					55					60				
His	Gly	Thr	Ser	Val	Arg	Cys	Val	Thr	Pro	Thr	Ser	Pro	Thr	Tyr	Gln
	65				70					75					80
Pro	Ala	Asp	Gly	Leu	Cys	Thr	Gln	Ser	Pro	Leu	Leu	Ser	Leu	His	Ile
				85					90					95	
Arg	His	Ser	Asp	Cys	Gln	Ala	Ala	Ile	Phe	Tyr	Asp	Arg	Glu	His	His
		100						105					110		
Ala	Ile	Ala	Asn	Val	His	Ser	Gly	Tyr	Arg	Gly	Leu	Leu	Gly	Asn	Ile
	115						120					125			
Tyr	Ala	Val	Thr	Val	Gly	Thr	Met	Lys	Lys	Leu	Phe	His	Thr	Lys	Pro
	130				135						140				
Gln	Asp	Leu	Phe	Val	Ala	Ile	Gly	Pro	Ser	Ile	Gly	Pro	Asp	Tyr	Ala
	145				150					155					160
Ile	Tyr	Pro	Asp	Tyr	Ala	Thr	Leu	Phe	Pro	Arg	Ser	Phe	Leu	Pro	Phe
		165						170						175	
Met	Asn	Pro	Lys	Asn	His	Phe	Asp	Leu	Arg	Ala	Ile	Ala	Arg	Lys	Gln
		180						185					190		
Leu	Thr	Asn	Leu	Gly	Ile	Ser	Lys	Asp	Arg	Ile	Phe	Ile	Ser	Asp	Leu
	195					200						205			
Cys	Thr	Tyr	Thr	Glu	His	Asp	Ala	Phe	Phe	Ser	Ser	Arg	Tyr	Leu	Ala
	210					215					220				
His	His	Pro	Asp	Pro	Asn	Leu	Thr	Gly	Gln	His	Ser	Lys	Asn	Arg	Asn
	225				230					235					240
Asn	Val	Thr	Ala	Val	Leu	Leu	Leu	Pro	Arg	Asp					
				245					250						

<210>391

<211>168

<212>PRT

<213>Chlamydia pneumoniae

<400>391

Arg	Leu	Ser	Met	Lys	Leu	Gly	Ala	Ser	Thr	Asn	His	Lys	Val	His	Glu
1				5					10					15	
Pro	Val	Lys	Pro	Lys	Lys	Ala	Lys	Leu	Ala	Glu	Ile	Glu	Ala	Asa	Lys
		20						25					30		
Thr	Gln	Ala	Thr	Glu	Gly	Thr	Leu	Arg	Ser	Lys	Ser	Leu	Ala	Leu	Gln
	35					40						45			
Ile	Ala	Arg	Ala	Val	Leu	Tyr	Ile	Leu	Phe	Ala	Ala	Leu	Met	Leu	Ala
	50					55					60				
Ala	Gly	Ile	Thr	Phe	Val	Thr	Phe	Glu	Ala	Leu	Gly	Phe	Pro	Leu	Ile
	65				70					75				80	
Gln	Ala	Tyr	Ser	Ile	Ala	Gly	Ile	Ile	Thr	Leu	Val	Gly	Leu	Ala	Ile
		85						90					95		
Gly	Leu	Val	Leu	Leu	Ile	Leu	Ser	Leu	Leu	Pro	Lys	Glu	Asp	Glu	Glu
		100						105					110		
Ala	Asp	Ala	Leu	Ser	Arg	Asn	Ala	Leu	Leu	Pro	Leu	Thr	Ile	Ile	Val
	115					120						125			
Ile	Glu	Gln	Gln	Pro	Ile	Thr	Pro	Lys	Pro	Glu	Ile	Pro	Tyr	Ser	Tyr
	130				135						140				
Leu	Thr	Lys	Leu	Ala	Leu	Leu	Thr	Ser	Leu	Phe	Leu	Thr	Leu	Arg	Arg
	145				150					155				160	
Ser	Ser	Ser	Gln	Arg	Lys	Thr	His								
				165											

<210>392

<211>205

<213>PRT

<213>Chlamydia pneumoniae

<400>392

Phe Lys Val Val Thr Ala Lys Ala Pro Asn Leu Thr Glu Ile Arg Asp
 1 5 10 15
 His Gly Ala Arg Val Pro Ser Leu Phe Leu Ser Pro Glu Thr Ser
 20 25 30
 His Trp Lys Gly Asp Lys Glu Val Ser Ala Pro Leu Lys Cln Leu Gln
 35 40 45
 Asp Leu Leu Gly Glu Glu Gln Trp Glu Ala Met Lys Thr Lys Met Asn
 50 55 60
 Ser Arg Lys Lys Ala Gly Gln Trp Ala Ile Phe Asn Ser Pro Thr Pro
 65 70 75 80
 Gly Val Ser Ser Thr Leu Val Leu Ala Trp Thr Pro Trp Gly Tyr Tyr
 85 90 95
 Asp Lys Asp Val Gln Asp Ile Leu Glu Arg Lys Asp Pro Met Ser Ser
 100 105 110
 Ser Leu Ser Glu Lys Asp Ser Lys Glu Phe Leu Lys Asn Leu Phe Val
 115 120 125
 Asp Leu Leu Glu Asn Gly Phe Thr Ser Val His Ile His Ala Glu Glu
 130 135 140
 Ala Phe Thr Pro Leu Asp His Thr Gly Lys Pro His Phe Lys Arg Asp
 145 150 155 160
 Asn Val Tyr Leu Pro Gly Lys Leu Leu Gly Ala Leu Asn Glu Ala Ala
 165 170 175
 Val Gln Ala Asn Val Ser Ala Asp Thr Gln Phe Thr Leu Phe Leu Thr
 180 185 190
 Gln Asp Glu Cys Asn Pro Phe His Asp Lys Lys Arg Gly
 195 200 205

<210>393

<211>147

<213>PRT

<213>Chlamydia pneumoniae

<400>393

Trp Arg Gly Asp Cys Tyr Arg His Tyr Tyr Asp Ile Ser Ile Ala Val
 1 5 10 15
 Gly Ile Asp Arg Gly Leu Val Val Pro Val Ile Arg Asp Cys Asp Lys
 20 25 30
 Leu Ser Asn Gly Glu Ile Glu Gln Lys Leu Ala Asp Leu Ser Leu Arg
 35 40 45
 Ala Arg Glu Gly Leu Leu Ala Ile Ala Glu Leu Glu Gly Gly Gly Phe
 50 55 60
 Thr Ile Thr Asn Gly Gly Val Tyr Gly Ser Leu Leu Ser Thr Pro Ile
 65 70 75 80
 Ile Asn Pro Pro Gln Val Gly Ile Leu Gly Met His Lys Ile Glu Lys
 85 90 95
 Arg Pro Val Val Leu Asp Asn Glu Ile Val Ile Ala Asp Met Met Tyr
 100 105 110
 Val Ala Leu Ser Tyr Asp His Arg Leu Ile Asp Gly Lys Glu Ala Val
 115 120 125
 Gly Phe Leu Val Lys Val Lys Glu Gly Leu Glu Asn Pro Ala Ser Leu
 130 135 140
 Leu Asp Leu
 145

<210>394

<211>233

<213>PRT

<213>Chlamydia pneumoniae

<400>394

Ile Met Thr Thr Glu Val Arg Ile Pro Asn Ile Ala Glu Ser Ile Ser
 1 5 10 15
 Glu Val Thr Val Ala Ser Leu Leu Val Thr Glu Gly Ala Leu Ile Gln
 20 25 30

Glu Asn Glu Gly Leu Leu Glu Ile Glu Ser Asp Lys Val Asn Gln Leu
 25 40 45
 Ile Tyr Ala Pro Val Ser Gly Arg Ile Phe Trp Glu Val Ser Glu Gly
 50 55 60
 Asp Val Val Pro Val Gly Val Val Gly Lys Ile Glu Pro Ala Gly
 65 70 75 80
 Glu Gly Glu Glu Leu Gly Asp Ser Gln Ser Lys Glu Thr Ile Glu Ala
 85 90 95
 Glu Ile Ile Cys Phe Pro Gln Ser Gly Val Arg Gln Ser Pro Pro Glu
 100 105 110
 Asn Lys Thr Phe Ile Pro Leu Arg Asp Gln Met Asp Gln Gly Ser Gln
 115 120 125
 Gly Leu Ser Ala Gly Asp Arg Gly Glu Thr Arg Glu Arg Met Thr Ser
 130 135 140
 Ile Arg Lys Thr Ile Ser Arg Arg Leu Leu Ser Ala Leu His Glu Ser
 145 150 155 160
 Ala Met Leu Thr Thr Phe Asn Glu Val Tyr Met Thr Pro Leu Phe His
 165 170 175
 Leu Arg Lys Glu Lys Gln Glu Glu Phe Leu Ser Arg Tyr Gly Val Lys
 180 185 190
 Leu Gly Phe Met Ser Phe Phe Val Lys Ala Val Leu Glu Ala Leu Lys
 195 200 205
 Ala Tyr Pro Arg Val Asn Ala Tyr Ile Asp Gly Glu Glu Ile Val Thr
 210 215 220
 Val Thr Ile Met Thr Phe Leu Leu Leu
 225 230

<210>385

<211>815

<212>PRT

<213>Chlamydia pneumoniae

<400>395

Ile Val Phe Ile Glu Phe Asn Tyr Phe Met Asp Ser Glu Phe Val Gly
 1 5 10 15
 Gln Val Tyr Ser Ser Asp Met Asp Trp Ile Glu Ser Met Tyr Gln Arg
 20 25 30
 Phe Met Asn His Glu Thr Leu Asp Pro Ser Trp Lys Tyr Phe Phe Glu
 35 40 45
 Gly Tyr Gln Leu Gly Gln Ala Ser Pro Ser Glu Ala Ser Thr Lys
 50 55 60
 Ile Ser Gly Asn Glu Thr Ile Ala Met Leu Gln Glu Gln Lys Ser Gln
 65 70 75 80
 Phe Leu Cys Thr Ile Tyr Arg Tyr Tyr Gly Tyr Leu Gln Ser Gln Ile
 85 90 95
 Ser Thr Leu Ala Pro Thr Thr Asp Ser Arg Phe Ile Gln Glu Lys Ile
 100 105 110
 Ala Lys Ile Asp Leu Asp Glu Gln Val Pro Ser Ala Gly Leu Leu Pro
 115 120 125
 Lys Ala Gln Val Ser Val Arg Glu Leu Ile Glu Ala Leu Lys Lys Cys
 130 135 140
 Tyr Cys Gly Ser Leu Thr Leu Glu Thr Leu Thr Cys Thr Pro Glu Leu
 145 150 155 160
 Gln Glu Phe Val Trp Asn Leu Met Glu Lys Arg Gln Val Glu Arg Phe
 165 170 175
 Ala Glu Gln Leu Leu Arg Ser Tyr Lys Asp Leu Cys Lys Ala Thr Phe
 180 185 190
 Phe Glu Glu Phe Leu Gln Ile Lys Phe Thr Gly Gln Lys Arg Phe Ser
 195 200 205
 Leu Glu Gly Gly Glu Thr Leu Val Pro Met Leu Glu His Leu Val His
 210 215 220
 Tyr Gly Ser Ala Leu Gly Ile Ser Asn Tyr Val Leu Gly Met Ala His
 225 230 235 240
 Arg Gly Arg Leu Asn Val Leu Thr Asn Val Leu Gly Lys Pro Tyr Arg
 245 250 255
 Tyr Val Phe Met Glu Phe Glu Asp Asp Pro Ala Ala Arg Gly Leu Glu

600

770 775 780
 Gly Gly Phe Arg Ala Ile Leu Glu Asp Ala Asp Pro Asn Tyr Asp Ala
 785 790 795 800
 Ser Ile Leu Val Leu Cys Ser Gly Lys Ile Tyr Tyr Asp Tyr Ala Glu
 805 810 815
 Met Leu Pro Gln Asp Arg Arg Lys Asp Phe Ser Cys Leu Arg Ile Glu
 820 825 830
 Ser Leu Tyr Pro Leu Ala Leu Glu Asp Leu Val Ser Leu Ile Asp Lys
 835 840 845
 Tyr Ser His Leu Lys His Phe Val Trp Leu Gln Glu Ser Lys Asn
 850 855 860
 Met Gly Ala Tyr Asp Tyr Met Phe Met Ala Leu Gln Asp Ile Leu Pro
 865 870 875 880
 Glu Lys Leu Leu Tyr Ile Gly Arg Pro Arg Ser Ser Ser Thr Ala Ser
 885 890 895
 Gly Ser Ala Lys Ser Val Val Lys Ser Trp Ser Arg Val Trp Lys Pro
 900 905 910
 Ser Phe Leu
 915
 <210>396
 <211>394
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>396
 Met Lys Thr Leu Ser Ala Ile Ala Ile Ala Gly Asp Ala Val Val Ser
 1 5 10 15
 Leu Ile Pro Met Leu Met Asn Gly Lys Ala Pro Leu Ala Leu Tyr Ile
 20 25 30
 His Ile Pro Phe Cys Thr Lys Lys Cys Arg Tyr Cys Ser Phe Tyr Thr
 35 40 45
 Ile Pro Tyr Lys Ser Glu Ser Val Ser Leu Tyr Cys Asn Ala Val Ile
 50 55 60
 Gln Glu Gly Leu Arg Lys Leu Ala Pro Ile Gln Glu Thr His Phe Ile
 65 70 75 80
 Glu Thr Val Phe Phe Gly Gly Gly Thr Pro Ser Leu Val Ser Pro Leu
 85 90 95
 Asp Leu Lys Arg Ile Leu Lys Glu Leu Ala Pro His Ala Arg Glu Ile
 100 105 110
 Thr Leu Glu Ala Asn Pro Glu Asn Leu Thr Val Ser Tyr Leu Arg Gln
 115 120 125
 Leu Gln Glu Thr Pro Ile Asn Arg Ile Ser Val Gly Val Gln Thr Phe
 130 135 140
 Asp Asp Ser Ile Leu Gln Leu Leu Gly Arg Thr His Ser Ser Ser Ala
 145 150 155 160
 Ala Ile Thr Ala Leu Gln Glu Cys Gln Asn His Gly Phe Ser Asn Leu
 165 170 175
 Ser Ile Asp Leu Ile Tyr Gly Leu Pro Thr Gln Ser Leu Glu Ile Phe
 180 185 190
 Leu Ser Asp Leu His Gln Ala Leu Thr Leu Pro Ile Thr His Ile Ser
 195 200 205
 Leu Tyr Asn Leu Thr Ile Asp Pro His Thr Ser Phe Tyr Lys His Arg
 210 215 220
 Lys Ile Leu Val Pro Thr Ile Ala Gln Glu Glu Ile Leu Ala Glu Met
 225 230 235 240
 Ser Leu Leu Ala Glu Asn Leu Leu Leu Ser Gln Gly Phe Gln Arg Tyr
 245 250 255
 Glu Leu Ala Ser Tyr Ala Lys Pro Asp Tyr Pro Ala Lys His Asn Leu
 260 265 270
 Tyr Tyr Trp Thr Asp Arg Pro Phe Leu Gly Leu Gly Val Ser Ala Ser
 275 280 285
 Gln Tyr Leu His Gly Glu Arg Ser Lys Asn Tyr Ser His Ile Ser His
 290 295 300
 Tyr Leu Arg Ala Val Arg Lys Asn Leu Pro Thr Gln Glu Thr Ser Glu
 305 310 315 320

Ile Leu Pro Lys Lys Glu Arg Ile Lys Glu Ala Leu Ala Leu Arg Leu
 325 330 335
 Arg Leu Leu Glu Gly Ala Asp Leu Ala Glu Phe Pro Ser Thr Leu Ile
 340 345 350
 Ser Met Leu Thr Gln Asp Val Lys Leu Gln Asn Leu Phe Ser Val His
 355 360 365
 Gly Gln Lys Leu Ala Leu Asn Arg Gln Gly Arg Leu Phe His Asp Thr
 370 375 380
 Ile Ala Glu Glu Ile Met Gly Tyr Ser Phe
 385 390
 <210>397
 <211>600
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>297
 Ser Leu Pro Asn Lys Phe Arg Ala Leu Met Thr Ala Pro Thr Glu Ser
 1 5 10 15
 Arg Ser Ser Pro Thr Leu Leu Gln Glu Thr Glu Pro Leu Ser Pro
 20 25 30
 Asn Pro Ile Pro Ala Asp Ile Gln Ile Pro Arg Ile Thr Ile Ser Pro
 35 40 45
 Pro Ser Leu Asp Val Ser Thr Val Ala Ser Ser Ala Glu Asp Ile Ser
 50 55 60
 Val Phe Ile Ala Gly Gly Pro Arg Ser Ser Ser Ala Ser Val Ala
 65 70 75 80
 Ser Asp Val Tyr Glu Leu Val Cys Leu Cys Gly Gly Asp Glu Asp Pro
 85 90 95
 Glu Pro Pro Asp Ser Glu Val Arg Thr Leu Tyr Val Asn Gly Ser Trp
 100 105 110
 Gln Thr His Gln Glu Ala Val Gln Glu Leu Leu Tyr Ile Ser Glu Val
 115 120 125
 Arg Gly Glu Ala Val Arg Leu Leu Tyr Asn Asp Gly Ser Gly Met Ser
 130 135 140
 Pro Trp Pro Ile Ser Pro Cys Arg Thr Leu Pro Thr Leu Asp His Pro
 145 150 155 160
 Leu Cys Gln Ala Leu Leu Thr Val Trp Glu Gln Phe Phe Ser Ala Pro
 165 170 175
 Glu Asn Gln Asn Arg Glu Phe Leu Val Ile Phe Tyr Gly Asp Ala Ser
 180 185 190
 Pro Tyr Ile Gln Gln Ala Leu Thr Gln Ser Arg His Ser Pro Arg Ile
 195 200 205
 Val Val Val Gly Ile Ser Pro Thr Val Phe Ile Gln Gly Asp Phe Arg
 210 215 220
 Val His Asn Tyr Arg Val Ser Gly Asp Phe Phe Ser Ser Leu Asp Cys
 225 230 235 240
 Arg Gly Thr Arg Ala Glu Asn Thr Thr Ile Leu Pro Tyr Ser Ser Gly
 245 250 255
 Leu Glu Gly Val Phe Leu Pro Ser Ile Arg Cys Pro Ser Phe Thr Trp
 260 265 270
 Ala Val Arg Phe Gly Glu Gln Cys Leu Val Ala Asn Arg Gly Glu Asp
 275 280 285
 Val Glu Asp Arg Gly Gly Leu Ser Gln Asp Ala Glu Arg Ser Gln Leu
 290 295 300
 Pro His Ser Glu Arg Asp Leu Ala Val Val Ile Asp Ser Thr Asp Pro
 305 310 315 320
 Ser Ser Met Ser Arg Leu Val Glu Trp Leu Asn Gln Gly Ser Pro Ser
 325 330 335
 Ser Asp Met Glu Ile Asn Pro Tyr Pro Gln Arg Cys Pro Asp Val Ala
 340 345 350
 Leu Ser Ala Leu Tyr Ala Ile Ser Arg Val Ser Gly Leu Ala Gln Glu
 355 360 365
 Trp Ile Leu Ala Ser Val His Glu Gly Leu Asp Leu Gln Ile Cys Tyr
 370 375 380
 Ser Leu Ile Leu Met His Thr Thr Phe Ala Val Arg Tyr Phe Phe Leu

Ala Asp Pro Gly Ala Ser Leu Val Arg Arg Ala Arg Ala Leu Gly Ile
 100 105 110
 Pro Val Gln Ala Phe Ser Gly Pro Cys Ser Ile Thr Leu Ala Leu Met
 115 120 125
 Leu Ser Gly Leu Pro Ser Gln Ser Phe Thr Phe Leu Gly Tyr Leu Pro
 130 135 140
 Gln Ser Pro Lys Glu Arg Val Lys Ser Ile Lys Lys Ala Ala Thr Ser
 145 150 155 160
 Lys Glu Val Ser Thr Ser Val Cys Ile Glu Thr Pro Tyr Arg Asn Val
 165 170 175
 Tyr Thr Phe Glu Ser Leu Leu Asp Thr Leu Pro Ser Tyr Ala Glu Leu
 180 185 190
 Cys Val Ala Ser Asp Leu Ser Gly Pro Ser Glu Leu Val Leu Thr Arg
 195 200 205
 Gln Val Gln Ser Trp Arg Thr Thr Glu Asp Leu Gly Ser Val Lys Gln
 210 215 220
 Ser Ile Thr Lys Val Pro Thr Ile Phe Leu Phe His Ile Pro Asn
 225 230 235

<210>400

<211>98

<212>PRT

<213>Chlamydia pneumoniae

<400>400

Gly Val Ser Ile His Thr Glu Val Asp Thr Ser Leu Glu Val Ala Ala
 1 5 10 15
 Phe Phe Ile Asp Phe Thr Arg Ser Leu Gly Leu Cys Gly Arg Tyr Pro
 20 25 30
 Lys Asn Val Lys Leu Trp Glu Gly Lys Pro Glu Ser Met Ser Ala Asn
 35 40 45
 Val Ile Glu Gln Gly Pro Glu Lys Ala Cys Thr Gly Ile Pro Lys Ala
 50 55 60
 Arg Ala Arg Arg Thr Lys Leu Ala Pro Gly Ser Ala Ile Gln Gly Arg
 65 70 75 80
 Pro Ala Ser Glu Ile Ser Pro Gln Phe Ser Pro Cys Phe Thr Ile Gly
 85 90 95

Ser Arg

<210>401

<211>321

<212>PRT

<213>Chlamydia pneumoniae

<400>401

Val Gln Asp Thr Thr Phe Leu Thr Leu Pro Met Gln Lys Ser Leu Thr
 1 5 10 15
 Ser Phe Asp Asp Phe Ser Gln Ala Tyr Ala Glu Lys Val Pro Ala Ile
 20 25 30
 Ala Leu Ile Gly Ser Ala Leu Glu Asp Asp Lys Asp Ala Leu Ile Glu
 35 40 45
 Leu Leu Val Ser Glu Ser Phe Lys Glu Leu Gly Gly Gln Gly Leu Met
 50 55 60
 Pro Ala Thr Leu Met Ser Trp Thr Glu Thr Phe Ala Leu Phe Gln Glu
 65 70 75 80
 His Glu Thr Leu Gly Ile Ile His Ala Glu Lys Phe Pro Leu Ala Thr
 85 90 95
 Lys Glu Phe Leu Ser Arg Tyr Ala Arg Asn Pro Gln Pro His Leu Thr
 100 105 110
 Ile Leu Ile Phe Thr Thr Lys Gln Glu Cys Phe Arg Glu Leu Ser Lys
 115 120 125
 Ala Leu Pro Ser Ala Leu Ser Leu Ser Leu Phe Gly Glu Trp Pro Ala
 130 135 140
 Asp Arg Gln Lys Arg Ile Ile Arg Leu Leu Leu Gln Arg Ala Glu Arg
 145 150 155 160
 Val Gly Ile Ser Cys Ser Gln Ser Leu Ala Ser Leu Phe Leu Arg Ala

165 170 175
 Leu Ala Ser Thr Ser Leu Pro Asp Ile Leu Ser Glu Phe Asp Lys Leu
 180 185 190
 Leu Cys Ser Val Gly Lys Lys Thr Ser Leu Asp His Ser Asp Ile Lys
 195 200 205
 Glu Leu Val Val Lys Lys Glu Lys Ala Ser Leu Trp Lys Phe Arg Asp
 210 215 220
 Ser Leu Leu Lys Arg Asp Pro Val Glu Gly His Gln Gln Leu His Phe
 225 230 235 240
 Leu Leu Glu Asp Gly Glu Asp Pro Leu Gly Ile Ile Thr Phe Leu Arg
 245 250 255
 Thr Gln Cys Leu Tyr Gly Leu Arg Ser Ile Glu Glu Gly Ser Lys Glu
 260 265 270
 Asn Lys His Arg Met Phe Val Leu Tyr Gly Lys Glu Arg Leu His Gln
 275 280 285
 Ala Leu Asn Ser Leu Phe Tyr Ala Glu Thr Leu Ile Lys Asn Asn Val
 290 295 300
 Gln Asp Pro Ile Val Ala Val Glu Thr Leu Val Ile Arg Met Val Asn
 305 310 315 320
 Leu

<210>402

<211>182

<212>PRT

<213>Chlamydia pneumoniae

<400>402

Val Ile Thr Cys Leu Ile Arg Gly Ile Lys Met Ile Gly Ala Gln Lys
 1 5 10 15
 Lys Gln Ser Gly Lys Lys Thr Ala Ser Arg Ala Val Arg Lys Pro Ala
 20 25 30
 Lys Lys Val Ala Ala Lys Arg Thr Val Lys Lys Ala Thr Val Arg Lys
 35 40 45
 Thr Ala Val Lys Lys Pro Ala Val Arg Lys Thr Ala Ala Lys Lys Thr
 50 55 60
 Val Ala Lys Lys Thr Thr Ala Lys Arg Thr Val Arg Lys Thr Val Ala
 65 70 75 80
 Lys Lys Pro Ala Val Lys Lys Val Ala Ala Lys Arg Val Val Lys Lys
 85 90 95
 Thr Val Ala Lys Lys Thr Thr Ala Lys Arg Ala Val Arg Lys Thr Val
 100 105 110
 Ala Lys Lys Pro Val Ala Arg Lys Thr Thr Val Ala Lys Gly Ser Pro
 115 120 125
 Lys Lys Ala Ala Ala Cys Ala Leu Ala Cys His Xaa Asn His Lys His
 130 135 140
 Thr Ser Ser Cys Lys Arg Val Cys Ser Ser Thr Ala Thr Arg Lys His
 145 150 155 160
 Gly Ser Lys Ser Arg Val Arg Thr Ala Xaa Gly Trp Arg His Gln Leu
 165 170 175
 Ile Lys Met Met Ser Arg
 180

<210>403

<211>197

<212>PRT

<213>Chlamydia pneumoniae

<400>403

Arg Gln Pro Xaa Ala Val Arg Thr Arg Leu Leu Glu Pro Cys Phe Leu
 1 5 10 15
 Val Ala Val Glu Gln Thr Arg Leu Gln Leu Asp Val Cys Leu Trp
 20 25 30
 Phe Xaa Trp His Ala Lys Ala Gln Ala Ala Ala Phe Leu Gly Glu Pro
 35 40 45
 Leu Ala Thr Val Val Phe Leu Ala Thr Gly Phe Leu Ala Thr Val Leu
 50 55 60
 Arg Thr Ala Leu Leu Ala Val Val Phe Phe Ala Thr Val Phe Phe Thr

65 70 75 80
 Thr Arg Leu Ala Ala Thr Phe Leu Thr Ala Gly Phe Leu Ala Thr Val
 85 95
 Leu Arg Thr Val Leu Leu Ala Val Val Phe Phe Ala Thr Val Phe Leu
 100 105 110
 Ala Ala Val Leu Arg Thr Ala Gly Phe Phe Thr Ala Val Leu Arg Thr
 115 120 125
 Val Ala Phe Leu Thr Val Arg Leu Ala Ala Thr Phe Leu Ala Gly Phe
 130 135 140
 Arg Thr Ala Leu Glu Ala Val Phe Leu Pro Leu Cys Phe Phe Cys Ala
 145 150 155 160
 Pro Ile Ile Phe Ile Pro Leu Ile Arg Glu Val Ile Thr Tyr Leu Ile
 165 170 175
 Tyr Arg Glu Gly Arg Leu Lys Thr Leu Ile Lys Lys Met Thr Phe Ile
 180 185 190
 Leu Lys Lys Leu Lys
 195

<210>404

<211>192

<212>PRT

<213>Chlamydia pneumoniae

<400>404

Met Ser Arg Gly Ser Phe Leu Leu Thr Glu Asn Ala Ile Asp Gly Ala
 1 5 10 15
 Ser Tyr Lys Met Gly Asp Val Tyr Val Gly Met Ser Gly Leu Ser Val
 20 25 30
 Glu Ile Cys Ser Thr Asp Ala Glu Gly Arg Leu Ile Leu Ala Asp Ala
 35 40 45
 Ile Thr Tyr Ala Leu Lys Tyr Cys Lys Pro Thr Arg Ile Ile Asp Phe
 50 55 60
 Ala Thr Leu Thr Gly Ala Met Val Val Ser Leu Gly Glu Glu Val Ala
 65 70 75 80
 Gly Phe Phe Ser Asn Asn Asp Val Leu Ala Glu Asp Leu Leu Glu Ala
 85 90 95
 Ser Ala Glu Thr Ser Glu Pro Leu Trp Arg Leu Pro Leu Val Lys Lys
 100 105 110
 Tyr Asp Lys Thr Leu His Ser Asp Ile Ala Asp Met Lys Asn Leu Gly
 115 120 125
 Ser Asn Arg Ala Gly Ala Ile Thr Ala Ala Leu Phe Leu Glu Arg Phe
 130 135 140
 Leu Glu Glu Ser Ser Val Ala Trp Ala His Leu Asp Ile Ala Gly Thr
 145 150 155 160
 Ala Tyr His Glu Lys Glu Glu Asp Arg Tyr Pro Lys Tyr Ala Ser Gly
 165 170 175
 Phe Gly Val Arg Ser Ile Leu Tyr Tyr Leu Glu Asn Ser Leu Ser Lys
 180 185 190

<210>405

<211>325

<212>PRT

<213>Chlamydia pneumoniae

<400>405

Val Val Leu Phe His Ala Glu Ala Ser Gly Arg Asn Arg Val Lys Ala
 1 5 10 15
 Asp Ala Ile Val Leu Pro Phe Trp His Phe Lys Asp Ala Lys Asn Ala
 20 25 30
 Ala Ser Phe Glu Ala Glu Phe Glu Pro Ser Tyr Leu Pro Ala Leu Glu
 35 40 45
 Asn Phe Glu Gly Lys Thr Gly Glu Ile Glu Leu Leu Tyr Ser Ser Pro
 50 55 60
 Lys Ala Lys Glu Lys Arg Ile Val Leu Leu Gly Leu Gly Lys Asn Glu
 65 70 75 80
 Glu Leu Thr Ser Asp Val Val Phe Glu Thr Tyr Ala Thr Leu Thr Arg
 85 90 95
 Val Leu Arg Lys Ala Lys Cys Ser Thr Val Asn Ile Ile Leu Pro Thr

100 105 110
 Ile Ser Glu Leu Arg Leu Ser Ala Glu Glu Phe Leu Val Gly Leu Ser
 115 120 125
 Ser Gly Ile Leu Ser Leu Asn Tyr Asp Tyr Pro Arg Tyr Asn Lys Val
 130 135 140
 Asp Arg Asn Leu Glu Thr Pro Leu Ser Lys Val Thr Val Ile Gly Ile
 145 150 155 160
 Val Pro Lys Met Ala Asp Ala Ile Phe Arg Lys Glu Ala Ala Ile Phe
 165 170 175
 Glu Gly Val Tyr Leu Thr Arg Asp Leu Val Asn Arg Asn Ala Asp Glu
 180 185 190
 Ile Thr Pro Lys Lys Leu Ala Glu Val Ala Leu Asn Leu Gly Lys Glu
 195 200 205
 Phe Pro Ser Ile Asp Thr Lys Val Leu Gly Lys Asp Ala Ile Ala Lys
 210 215 220
 Glu Lys Met Gly Leu Leu Leu Ala Val Ser Lys Gly Ser Cys Val Asp
 225 230 235 240
 Pro His Phe Ile Val Val Arg Tyr Gln Gly Arg Pro Lys Ser Lys Asp
 245 250 255
 His Thr Val Leu Ile Gly Lys Gly Val Thr Phe Asp Ser Gly Gly Leu
 260 265 270
 Asp Leu Lys Pro Gly Lys Ser Met Leu Thr Met Lys Glu Asp Met Ala
 275 280 285
 Gly Gly Ala Thr Val Leu Gly Ile Leu Ser Ala Leu Ala Xaa Leu Glu
 290 295 300
 Leu Pro Ile Asn Val Thr Gly Ile Ile Pro Ala Tyr Arg Glu Cys Tyr
 305 310 315 320
 Arg Trp Arg Leu Leu
 325

<210>406

<211>105

<212>PRT

<213>Chlamydia pneumoniae

<400>406

Asp Ala Ser Leu Leu Glu Glu Arg Leu Arg Ser His Cys Cys Trp Arg
 1 5 10 15
 Tyr Leu Cys Arg Glu Leu His Glu Gln Arg Trp Phe His Arg Asn Ser
 20 25 30
 Ser Leu Val Ile Ser Val Asp Ser Leu Lys Phe Ser Pro Phe Gly Arg
 35 40 45
 Asn Glu Gly Ser Arg Ser Pro Ser Leu Glu Asp Asn His Gln Gln Val
 50 55 60
 Gly Tyr Glu Ser Val Ser Val Gly Phe Glu Gly Glu Ala Leu Asp Ala
 65 70 75 80
 Glu Ala Ile Lys Asp Lys Asp Met Tyr Ala Gly Tyr Gly Gln Glu Gln
 85 90 95
 Gln Tyr Val Cys Glu Asp Val Pro Phe
 100 105

<210>407

<211>89

<212>PRT

<213>Chlamydia pneumoniae

<400>407

Met Met Phe Gly His Phe Ala Gly Tyr Leu Gly Ala Asp Pro Glu Glu
 1 5 10 15
 Arg Met Thr Ser Lys Gly Lys Arg Val Ile Thr Leu Arg Leu Gly Val
 20 25 30
 Lys Thr Arg Val Gly Met Lys Asp Glu Thr Val Trp Cys Lys Cys Asn
 35 40 45
 Ile Trp His Asn Arg Tyr Asp Lys Met Leu Pro Tyr Leu Lys Lys Gly
 50 55 60
 Ser Gly Val Il Val Ala Gly Asp Ile Ser Val Glu Ser Tyr Met Ser
 65 70 75 80
 Lys Asp Gly Phe Thr Ala Ile Leu Leu

85

<210>408

<211>179

<212>PRT

<213>Chlamydia pneumoniae

<400>408

Leu Glu Thr Thr Thr Ile Tyr Tyr Lys Glu Ile Pro Ser Cys Pro Arg
 1 5 10 15
 Gln Asn Ala Glu Glu Asn Leu Lys Asn Phe Ala Lys Glu Leu Lys Leu
 20 25 30
 Pro Asp Val Ala Phe Asp Gln Asn Thr Cys Ile Leu Phe Val Asp
 35 40 45
 Gly Glu Phe Ser Leu His Leu Thr Tyr Glu Glu His Ser Asp Arg Leu
 50 55 60
 Tyr Val Tyr Ala Pro Leu Leu Asp Gly Leu Pro Asp Asn Thr Cln Arg
 65 70 75 80
 Lys Leu Ala Leu Tyr Glu Lys Leu Leu Glu Gly Ser Met Leu Gly Gly
 85 90 95
 Gln Met Ala Gly Gly Gly Val Gly Val Ala Thr Lys Glu Gln Leu Ile
 100 105 110
 Leu Met His Cys Val Leu Asp Met Lys Tyr Ala Glu Thr Asn Leu Leu
 115 120 125
 Lys Ala Phe Ala Gln Leu Phe Ile Glu Thr Val Val Lys Trp Arg Thr
 130 135 140
 Val Cys Ala Asp Ile Cys Ala Gly Arg Glu Pro Ser Val Asp Thr Met
 145 150 155 160
 Pro Gln Met Pro Gln Gly Gly Gly Gly Met Gln Pro Pro Pro Thr Gly
 165 170 175
 Ile Arg Ala

<210>409

<211>666

<212>PRT

<213>Chlamydia pneumoniae

<400>409

Ser Thr Met Glu Lys Val Ser Ser Tyr Pro Ser Val Pro Leu Pro Leu
 1 5 10 15
 Gly Ala Ser Lys Ile Ser Pro Asn Arg Tyr Arg Phe Ala Leu Tyr Ala
 20 25 30
 Ser Gln Ala Thr Glu Val Ile Leu Ala Leu Thr Asp Glu Asn Ser Glu
 35 40 45
 Val Ile Glu Val Pro Leu Tyr Pro Asp Thr His Arg Thr Gly Ala Ile
 50 55 60
 Trp His Ile Glu Ile Glu Gly Ile Ser Asp Gln Ser Ser Tyr Ala Phe
 65 70 75 80
 Arg Val His Gly Pro Lys Lys His Gly Met Gln Tyr Ser Phe Lys Glu
 85 90 95
 Tyr Leu Ala Asp Pro Tyr Ala Lys Asn Ile His Ser Pro Gln Ser Phe
 100 105 110
 Gly Ser Arg Lys Lys Gln Gly Asp Tyr Ala Phe Cys Tyr Leu Lys Glu
 115 120 125
 Glu Pro Phe Pro Trp Asp Gly Asp Gln Pro Leu His Leu Pro Lys Glu
 130 135 140
 Glu Met Ile Ile Tyr Glu Met His Val Arg Ser Phe Thr Gln Ser Ser
 145 150 155 160
 Ser Ser Arg Val His Ala Pro Gly Thr Phe Leu Gly Ile Ile Glu Lys
 165 170 175
 Ile Asp His Leu His Lys Leu Gly Ile Asn Ala Val Glu Leu Leu Pro
 180 185 190
 Ile Phe Glu Phe Asp Glu Thr Ala His Pro Phe Arg Asn Ser Lys Phe
 195 200 205
 Pro Tyr Leu Cys Asn Tyr Trp Gly Tyr Ala Pro Leu Asn Phe Phe Ser
 210 215 220
 Pro Cys Arg Arg Tyr Ala Tyr Ala Ser Asp Pro Cys Ala Pro Ser Arg

225 230 235 240
 Glu Phe Lys Thr Leu Val Lys Thr Leu His Gln Glu Gly Ile Glu Val
 245 250 255
 Ile Leu Asp Val Val Phe Asn His Thr Gly Leu Gln Gly Thr Thr Cys
 260 265 270
 Ser Leu Pro Trp Ile Asp Thr Pro Ser Tyr Tyr Ile Leu Asp Ala Gln
 275 280 285
 Gly His Phe Thr Asn Tyr Ser Gly Cys Gly Asn Thr Leu Asn Thr Asn
 290 295 300
 Arg Ala Pro Thr Thr Gln Trp Ile Leu Asp Ile Leu Arg Tyr Trp Val
 305 310 315 320
 Glu Glu Met His Val Asp Gly Phe Arg Phe Asp Leu Ala Ser Val Phe
 325 330 335
 Ser Arg Gly Pro Ser Gly Ser Pro Leu Gln Phe Ala Pro Val Leu Glu
 340 345 350
 Ala Ile Ser Phe Asp Pro Leu Leu Ala Ser Thr Lys Ile Ile Ala Glu
 355 360 365
 Pro Trp Asp Ala Gly Gly Leu Tyr Gln Val Gly Tyr Phe Pro Thr Leu
 370 375 380
 Ser Pro Arg Trp Ser Glu Trp Asn Gly Pro Tyr Arg Asp Asn Val Lys
 385 390 395 400
 Ala Phe Leu Asn Gly Asp Gln Asn Leu Ile Gly Thr Phe Ala Ser Arg
 405 410 415
 Ile Ser Gly Ser Gln Asp Ile Tyr Pro His Gly Ser Pro Thr Asn Ser
 420 425 430
 Ile Asn Tyr Val Ser Cys His Asp Gly Phe Thr Leu Cys Asp Thr Val
 435 440 445
 Thr Tyr Asn His Lys His Asn Glu Ala Asn Gly Glu Asp Asn Arg Asp
 450 455 460
 Gly Thr Asp Ala Asn Tyr Ser Tyr Asn Phe Gly Thr Glu Gly Lys Thr
 465 470 475 480
 Glu Asp Pro Gly Ile Leu Gln Val Arg Glu Arg Gln Leu Arg Asn Phe
 485 490 495
 Phe Leu Thr Leu Met Val Ser Gln Gly Ile Pro Met Ile Gln Ser Gly
 500 505 510
 Asp Glu Tyr Ala His Thr Ala Glu Gly Asn Asn Asn Arg Trp Ala Leu
 515 520 525
 Asp Ser Asn Ala Asn Tyr Phe Leu Trp Asp Glu Leu Thr Ala Lys Pro
 530 535 540
 Thr Leu Met His Phe Leu Cys Asp Leu Ile Ala Phe Arg Lys Lys Tyr
 545 550 555 560
 Lys Thr Leu Phe Asn Arg Gly Phe Leu Ser Asn Lys Glu Ile Ser Trp
 565 570 575
 Val Asp Ala Met Gly Asn Pro Met Thr Trp Arg Pro Gly Asn Phe Leu
 580 585 590
 Ala Phe Lys Ile Lys Ser Pro Lys Ala His Val Tyr Val Ala Phe His
 595 600 605
 Val Gly Ala Gln Asp Gln Leu Ala Thr Leu Pro Lys Ala Ser Ser Asn
 610 615 620
 Phe Leu Pro Tyr Gln Ile Val Ala Glu Ser Gln Gln Gly Phe Val Pro
 625 630 635 640
 Gln Asn Val Ala Thr Pro Thr Val Ser Leu Gln Pro His Thr Thr Leu
 645 650 655
 Ile Ala Ile Ser His Ala Lys Glu Val Thr
 660 665

<210>410

<211>312

<212>PRT

<213>Chlamydia pneumoniae

<400>410

Thr Val Phe Asn Phe Lys Arg Phe Tyr Gln Lys Asn Ser Gln Arg Gln
 1 5 10 15
 Asn Gly Asn Thr Thr Cys Leu Arg Pro Phe Lys Lys Thr Cys Lys Glu
 20 25 30

Leu Ile Glu Phe Arg Arg Arg Thr Val Lys Leu Leu Lys Asn Val Leu
 35 40 45
 Leu Gly Leu Phe Phe Ser Met Ser Ile Ser Gly Phe Ser Glu Val Lys
 50 55 60
 Val Ser Asp Thr Phe Val Lys Glu Asp Thr Val Val Glu Pro Lys Ile
 65 70 75 80
 Arg Val Leu Leu Ser Asn Glu Ser Thr Thr Ala Leu Ile Glu Ala Lys
 85 90 95
 Gly Pro Tyr Arg Ile Tyr Gly Asp Asn Val Leu Leu Asp Thr Ala Ile
 100 105 110
 Gln Gly Glu Arg Cys Val Val His Ala Leu Tyr Glu Gly Ile Arg Trp
 115 120 125
 Gly Glu Phe Tyr Pro Gly Leu Gln Cys Leu Lys Ile Glu Pro Val Asp
 130 135 140
 Asp Thr Ala Ser Leu Phe Phe Asn Gly Ile Gln Tyr Gln Gly Ser Leu
 145 150 155 160
 Tyr Val His Arg Lys Asp Asn His Cys Ile Met Val Ser Asn Glu Val
 165 170 175
 Thr Ile Glu Asp Tyr Leu Lys Ser Val Leu Ser Ile Lys Tyr Leu Glu
 180 185 190
 Glu Leu Asp Lys Glu Ala Leu Ser Ala Cys Ile Ile Leu Glu Arg Thr
 195 200 205
 Ala Leu Tyr Glu Lys Leu Leu Ala Arg Asn Pro Gln Asn Phe Trp His
 210 215 220
 Val Lys Ala Glu Glu Glu Gly Tyr Ala Gly Phe Gly Val Thr Lys Gln
 225 230 235 240
 Phe Tyr Gly Val Glu Glu Ala Ile Asp Trp Thr Ala Arg Leu Val Val
 245 250 255
 Asp Ser Pro Gln Gly Leu Ile Ile Asp Ala Gln Gly Leu Leu Gln Ser
 260 265 270
 Asn Val Asp Arg Leu Ala Ile Glu Gly Phe Asn Ala Arg Gln Ile Leu
 275 280 285
 Glu Lys Phe Tyr Lys Asp Val Asp Phe Val Val Ile Glu Ser Trp Asn
 290 295 300
 Glu Glu Leu Asp Gly Glu Ile Arg
 305 310

<210>411

<211>337

<212>PRT

<213>Chlamydia pneumoniae

<400>411

Met Thr His Gln Val Ala Val Leu His Gln Asp Lys Lys Phe Asp Val
 1 5 10 15
 Ser Leu Arg Pro Lys Gly Leu Glu Glu Phe Tyr Gly Gln His His Leu
 20 25 30
 Lys Glu Arg Leu Asp Leu Phe Leu Cys Ala Ala Leu Gln Arg Gly Glu
 35 40 45
 Val Pro Gly His Cys Leu Phe Phe Gly Pro Pro Gly Leu Gly Lys Thr
 50 55 60
 Ser Leu Ala His Ile Val Ala Tyr Thr Val Gly Lys Gly Leu Val Leu
 65 70 75 80
 Ala Ser Gly Pro Gln Leu Ile Lys Pro Ser Asp Leu Leu Gly Leu Leu
 85 90 95
 Thr Ser Leu Gln Glu Gly Asp Val Phe Phe Ile Asp Glu Ile His Arg
 100 105 110
 Met Gly Lys Val Ala Gln Glu Tyr Leu Tyr Ser Ala Met Glu Asp Phe
 115 120 125
 Lys Val Asp Il Thr Ile Asp Ser Gly Pro Gly Ala Arg Ser Val Arg
 130 135 140
 Val Asp Leu Ala Pro Phe Thr Leu Val Gly Ala Thr Thr Arg Ser Gly
 145 150 155 160
 Met Leu Ser Glu Pro Leu Arg Thr Arg Phe Ala Phe Ser Ala Arg Leu
 165 170 175
 Ser Tyr Tyr Ser Asp Gln Asp Leu Lys Gln Ile Leu Val Arg Ser Ser

180 185 190
 His Leu Leu Gly Ile Glu Ala Asp Ser Ser Ala Leu Leu Glu Ile Ala
 195 200 205
 Lys Arg Ser Arg Gly Thr Pro Arg Leu Ala Asn His Leu Leu Arg Trp
 210 215 220
 Val Arg Asp Phe Ala Gln Ile Arg Glu Gly Asn Cys Ile Asn Gly Asp
 225 230 235 240
 Val Ala Glu Lys Ala Leu Ala Met Leu Leu Ile Asp Asp Trp Gly Leu
 245 250 255
 Asn Glu Ile Asp Ile Lys Leu Leu Thr Thr Ile Ile Asp Tyr Tyr Gln
 260 265 270
 Gly Gly Pro Val Gly Ile Lys Thr Leu Ser Val Ala Val Gly Glu Asp
 275 280 285
 Ile Lys Thr Leu Glu Asp Val Tyr Glu Pro Phe Leu Ile Leu Lys Gly
 290 295 300
 Phe Ile Lys Lys Thr Pro Arg Gly Arg Met Val Thr Gln Leu Ala Tyr
 305 310 315 320
 Asp His Leu Lys Arg His Ala Lys Asn Leu Leu Ser Leu Gly Glu Gly
 325 330 335
 Gln

<210>412

<211>190

<212>PRT

<213>Chlamydia pneumoniae

<400>412

Met Ser Ile Lys Glu Asp Lys Trp Ile Arg Glu Met Ala Leu Asn Ala
 1 5 10 15
 Asp Met Ile His Pro Phe Val Asn Gly Gln Val Asn Val Asn Glu Glu
 20 25 30
 Thr Gly Glu Lys Leu Ile Ser Tyr Gly Leu Ser Ser Tyr Gly Tyr Asp
 35 40 45
 Leu Arg Leu Ser Arg Glu Phe Lys Val Phe Thr Asn Val Tyr Asn Ser
 50 55 60
 Val Val Asp Pro Lys Cys Phe Thr Glu Asp Ile Phe Ile Ser Ile Thr
 65 70 75 80
 Asp Asp Val Cys Ile Val Pro Pro Asn Ser Phe Ala Leu Ala Arg Ser
 85 90 95
 Val Glu Tyr Phe Arg Ile Pro Arg Asn Val Leu Thr Met Cys Ile Gly
 100 105 110
 Lys Ser Thr Tyr Ala Arg Cys Gly Ile Ile Val Asn Val Thr Pro Phe
 115 120 125
 Glu Pro Glu Trp Glu Gly His Val Thr Ile Glu Ile Ser Asn Thr Thr
 130 135 140
 Pro Leu Pro Ala Lys Ile Tyr Ala Asn Glu Gly Ile Ala Gln Val Leu
 145 150 155 160
 Phe Phe Glu Ser Ser Thr Thr Cys Glu Val Ser Tyr Ala Asp Arg Lys
 165 170 175
 Gly Lys Tyr Gln Lys Gln Gln Gly Ile Thr Val Pro Cys Val
 180 185 190

<210>413

<211>165

<212>PRT

<213>Chlamydia pneumoniae

<400>413

Lys Phe Leu Thr Leu Arg His Cys Gln Arg Lys Phe Thr Leu Met Lys
 1 5 10 15
 Gly Leu Pro Arg Ser Tyr Ser Leu Ser Leu Val Arg Pro Ala Arg Phe
 20 25 30
 Leu Met Gln Thr Glu Lys Glu Ser Ile Lys Ser Asn Lys Ala Ser Pro
 35 40 45
 Tyr Leu Val Ser Lys Val Ser Val Arg Lys Lys Asn Trp Gly Phe Arg
 50 55 60
 Leu Leu Glu Glu Val Met Ile Lys Ser Trp Trp Val Ile Phe Ser Ile

65		70		75		80									
Leu	Ile	Gly	Gly	Phe	Val	Tyr	Asp	Arg	Ala	Ile	Gln	Glu	Leu	Arg	Thr
				85					90					95	
Glu	Glu	Leu	Arg	Leu	Gln	Ser	Lys	Val	Ser	Ser	Leu	Cys	Gln	Asp	Ile
			100					105					110		
Leu	Ser	Ala	Gln	Glu	Lys	Gln	Arg	Gln	Leu	Gln	Leu	His	Leu	Gln	His
		115					120					125			
Trp	Gln	Asp	Ser	Ala	Ala	Ile	Glu	Ala	Ala	Leu	Ile	Gln	Arg	Leu	Gly
	130					135					140				
Leu	Ile	Pro	Lys	Gly	Tyr	Lys	Lys	Leu	Cys	Val	Ser	Pro	Lys	Gln	Gln
145					150					155					160
Ser	Glu	Asn	Lys	Asp											
				165											

<210>414

<211>414

<212>PRT

<213>Chlamydia pneumoniae

<400>414

Lys	Glu	Thr	Met	Ile	Pro	Thr	Met	Leu	Met	Phe	Phe	Ile	Ile	Cys	Phe
1				5					10					15	
Thr	Leu	Cys	Ser	Gly	Phe	Ile	Ser	Leu	Ser	Gln	Ile	Ala	Leu	Phe	Ser
			20					25					30		
Leu	Pro	Thr	Ser	Leu	Ile	Ser	His	Tyr	Lys	Arg	Ser	Lys	Ser	Lys	Lys
		35					40					45			
Gln	Gln	Arg	Val	Ala	Thr	Leu	Leu	Leu	His	Pro	His	His	Leu	Leu	Ile
	50					55				60					
Thr	Leu	Ile	Phe	Cys	Asp	Ile	Gly	Leu	Asn	Ile	Ala	Ile	Gln	Asn	Cys
65					70					75				80	
Phe	Ala	Ile	Leu	Phe	Gly	Asp	Ala	Ala	Ser	Trp	Trp	Phe	Thr	Val	Gly
			85						90					95	
Leu	Pro	Leu	Ala	Ile	Thr	Leu	Ile	Leu	Gly	Glu	Ile	Leu	Pro	Lys	Ala
		100						105					110		
Val	Ala	Leu	Pro	Phe	Asn	Thr	Gln	Ile	Ala	Ser	Ser	Val	Ala	Pro	Leu
	115						120					125			
Ile	Leu	Cys	Val	Thr	Lys	Ile	Phe	Lys	Pro	Leu	Leu	His	Trp	Gly	Ile
	130					135					140				
Val	Gly	Ile	Asn	Tyr	Val	Val	Gln	Trp	Ile	Leu	Ser	Lys	Gln	Gln	Ile
145				150					155					160	
Asp	Ile	Ile	Gln	Pro	Gln	Glu	Leu	Lys	Glu	Val	Leu	Gln	Ser	Cys	Lys
			165					170						175	
Asp	Phe	Gly	Val	Val	Asn	Gln	Glu	Glu	Ser	Arg	Leu	Leu	Tyr	Gly	Tyr
		180						185					190		
Leu	Ser	Leu	Ser	Asp	Cys	Ser	Val	Lys	Glu	Arg	Met	Gln	Pro	Arg	Gln
	195						200					205			
Asp	Ile	Leu	Phe	Tyr	Asp	Ile	Gln	Thr	Pro	Leu	Glu	Asn	Leu	Tyr	Leu
	210					215					220				
Leu	Phe	Ser	Lys	Gln	His	Cys	Ser	Arg	Val	Pro	Ile	Cys	Asn	Asp	Asn
225				230						235				240	
Leu	Gln	Asn	Leu	Leu	Gly	Ile	Cys	Thr	Ala	Arg	Ser	Leu	Leu	Leu	His
			245					250						255	
Asp	Lys	Pro	Leu	Gln	Ser	Ser	Asp	Asp	Leu	Leu	Pro	Leu	Leu	Lys	Lys
		260						265					270		
Pro	Tyr	Tyr	Met	Pro	Glu	Thr	Ile	Ser	Ala	Lys	Met	Ala	Leu	Cys	Gln
	275						280					285			
Met	Ala	Ala	Glu	Asp	Glu	Thr	Leu	Gly	Met	Ile	Ile	Asp	Glu	Tyr	Gly
	290					295					300				
Ser	Ile	Glu	Gly	Leu	Ile	Thr	Gln	Glu	Asp	Leu	Phe	Glu	Ile	Val	Ala
305				310						315				320	
Gly	Glu	Ile	Val	Asp	Gln	Arg	Asp	Asn	Lys	Ile	Leu	Tyr	Thr	Thr	S r
			325					330						335	
Gly	Ala	Asp	Val	Ile	Ile	Ala	Ser	Gly	Thr	Leu	Glu	Leu	Arg	Glu	Phe
		340						345					350		
Ser	Glu	Ile	Phe	Asp	Ile	Asn	Leu	Pro	Thr	Asn	Asn	Asn	Ile	Ala	Thr
	355						360					365			

Ile Gly Gly Trp Leu Ile Glu Gln Ile Gly Thr Ile Pro Thr Thr Gly
 370 375 380
 Met Lys Leu Ser Trp Asn Asn Leu Leu Phe Gln Val Leu Asp Ala Ala
 385 390 395 400
 Pro Asn Arg Ile Arg Arg Val Tyr Ile Arg Lys Leu Tyr Asp
 405 410

<210>415

<211>404

<212>PR"

<213>Chlamydia pneumoniae

<400>415

Met Thr Asn Ser Ala Leu Phe Trp Ile Gly Val Asn Ile Ile Cys Ile
 15
 Val Leu Gln Gly Phe Tyr Ser Met Met Glu Met Ala Cys Val Ser Phe
 20 25 30
 Asn Arg Val Arg Leu Gln Tyr Tyr Leu Thr Lys Asp His Lys Lys Ala
 35 40 45
 Arg Tyr Ile Asn Phe Leu Ile Arg Arg Pro Tyr Arg Leu Phe Gly Thr
 50 55 60
 Val Met Leu Gly Val Asn Ile Ala Leu Gln Val Gly Ser Glu Ser Ser
 65 70 75 80
 Arg Asn Cys Tyr Arg Ala Leu Gly Ile Thr Pro Asp Tyr Ala Pro Phe
 85 90 95
 Thr Gln Ile Phe Ile Val Val Ile Phe Ala Gln Leu Leu Pro Leu Thr
 100 105 110
 Ile Ser Arg Lys Ile Pro Gln Lys Leu Ala Leu Trp Gly Ala Pro Ile
 115 120 125
 Leu Tyr Tyr Ser His Tyr Ile Phe Tyr Pro Leu Ile Gln Leu Ile Gly
 130 135 140
 Ser Leu Thr Glu Gly Leu Tyr Tyr Leu Leu Asn Ile Arg Lys Glu Lys
 145 150 155 160
 Leu Asn Ser Thr Leu Ser Arg Asp Glu Phe Gln Lys Ala Leu Glu Thr
 165 170 175
 His His Glu Glu Asp Phe Asn Thr Ile Ala Thr Asn Ile Phe Ser
 180 185 190
 Leu Ser Ala Thr Cys Ala Asp Gln Val Cys Gln Pro Leu Glu Gln Val
 195 200 205
 Thr Met Leu Pro Ser Ser Ala Asn Val Lys Asp Phe Cys Arg Thr Ile
 210 215 220
 Lys Asn Thr Asp Ile Asn Phe Ile Pro Val Tyr His Lys Ala Arg Lys
 225 230 235 240
 Asn Val Ile Gly Ile Ala His Pro Lys Asp Phe Val Asn Lys Ala Leu
 245 250 255
 Asp Glu Pro Leu Ile Asn Asn Leu His Ser Pro Trp Phe Ile Thr Ala
 260 265 270
 Lys Ser Lys Leu Ile Arg Ile Leu Lys Glu Phe Arg Asp Asn Arg Ser
 275 280 285
 Ser Val Ala Val Val Leu Asn Ala Ser Gly Gln Pro Ile Gly Ile Leu
 290 295 300
 Ser Leu Asn Ala Ile Phe Lys Ile Leu Phe Asn Thr Thr Asn Ile Ala
 305 310 315 320
 His Leu Lys Pro Lys Thr Ile Ser Val Ile Glu Arg Thr Phe Pro Gly
 325 330 335
 Asn Ser Arg Ile Lys Asp Leu Gln Lys Gln Leu Asp Ile Gln Phe Pro
 340 345 350
 Gln Tyr Pro Val Glu Thr Leu Ala Gln Leu Val Leu Gln Leu Leu Asp
 355 360 365
 Ser Pro Ala Glu Val Gly Thr Ser Val Ile Ile Asn Asn Leu Leu Leu
 370 375 380
 Glu Val Lys Glu Met Ser Leu Ser Gly Ile Lys Thr Val Ser Ile Lys
 385 390 395 400
 Asn Leu Leu Ser

<210>416

<211>373

<212>PRT

<213>Chlamydia pneumoniae

<400>416

Tyr Ser Met Ile Tyr Leu Asp Asn Asn Ala Met Thr Pro Pro Glu Arg
 1 5 10 15
 Gly Leu Leu Glu Phe Leu Gln Lys Thr Phe Leu Ile Glu Gly Thr Tyr
 20 25 30
 Ala Asn Pro Ser Ser Val His Gln Leu Gly Lys Lys Ser Arg Gln Leu
 35 40 45
 Val Leu Glu Ala Ser His Trp Met Gln Lys Val Leu Ser Phe Gln Gly
 50 55 60
 Arg Val Leu Tyr Thr Ser Gly Ala Thr Glu Ser Leu Asn Leu Ala Ile
 65 70 75 80
 Ala Ser Leu Pro Lys Asp Ser His Val Ile Thr Ser Gly Ser Glu His
 85 90 95
 Pro Ala Ile Leu Glu Pro Leu Lys His Ser Ser Leu Ser Val Ser Tyr
 100 105 110
 Leu Asn Pro Glu Glu Gly Arg Cys Val Leu Thr Ile Glu Gln Ile Glu
 115 120 125
 Arg Ala Val Thr Pro Lys Thr Ser Ala Ile Ile Leu Gly Trp Val Asn
 130 135 140
 Ser Glu Thr Gly Ala Lys Ala Asp Ile Ala Ala Ile Ala His Phe Ala
 145 150 155 160
 Gln Glu Arg Gln Leu Gln Phe Ile Val Asp Ala Thr Ala Asn Val Gly
 165 170 175
 Lys Glu Arg Ile Val Leu Pro Ser Gly Val Thr Met Ala Ala Phe Ser
 180 185 190
 Gly His Lys Phe His Ala Leu Ser Gly Ile Gly Ala Leu Leu Val Ser
 195 200 205
 Pro Gly Val Lys Leu His Pro Gln Leu Trp Gly Gly Gly Gln Gln Gly
 210 215 220
 Gly Leu Arg Ala Gly Thr Glu Asn Leu Trp Gly Ile Ala Ser Leu Leu
 225 230 235 240
 Tyr Ile Phe Lys Tyr Leu Asp Leu His Gln Glu Arg Ile Ser Gln Glu
 245 250 255
 Ile Leu Thr His Arg Asn Gly Phe Glu Lys Ala Ile Lys Ala Arg Ile
 260 265 270
 Pro Asp Val His Ile His Cys Ala Asp Gln Pro Arg Ala Asn Asn Val
 275 280 285
 Ser Ala Ile Ala Phe Pro Pro Leu Glu Gly Glu Val Leu Gln Ile Ala
 290 295 300
 Leu Asp Ile Glu Gly Val Ala Cys Gly Tyr Gly Ser Ala Cys Ser Ser
 305 310 315 320
 Gly Ala Thr Ala Pro Phe Lys Ser Leu Val Ser Met Gly Val Asp Glu
 325 330 335
 Glu Leu Thr Leu Ala Thr Leu Arg Phe Ser Phe Ser His Leu Leu Leu
 340 345 350
 Gln Glu Asp Val Glu Arg Ala Val Gly Ile Ile Glu Lys Val Val Glu
 355 360 365
 Arg Leu Lys Asn Ser
 370

<210>417

<211>248

<212>PRT

<213>Chlamydia pneumoniae

<400>417

Glu His Phe Val Asp Phe Asp Tyr Phe Gly Leu Ser Asp Ile Gly Arg
 1 5 10 15
 Val Arg Ala Arg Asn Glu Asp Phe Trp Gln Val Asn Leu Met Ser Gln
 20 25 30
 Val Val Ala Ile Ala Asp Gly Val Gly Gly Arg Leu Gly Gly Asp Ile
 35 40 45
 Ala Ser Gln Glu Ala Val Thr Ser Leu Met Glu Leu Ile Asp Glu Gln

50 55 60
 Gln Ser Lys Leu Met Gly Tyr Glu Asp Asp Gln Tyr Lys Glu Thr Leu 90
 65 70 75
 Lys Lys Ile Leu Leu Glu Val Asn Gly Val Val Tyr Glu His Gly Gln 95
 85 90
 Met Glu Glu His Leu Gln Gly Met Gly Thr Thr Leu Ser Phe Ile Gln 110
 100 105
 Phe Arg Lys Asp Arg Ala Trp Leu Phe His Val Gly Asp Ser Arg Ile 125
 115 120
 Tyr Arg Ile Arg Glu Gly Glu Leu Arg Arg Leu Thr Glu Asp His Ser 140
 130 135
 Leu Glu Asn Gln Leu Lys Asn Arg Tyr Gly Leu Pro Lys Gln Ser Asp 160
 145 150 155
 Lys Val Tyr Ser Tyr Arg His Ile Leu Thr Asn Val Leu Gly Ser Arg 175
 165 170
 Pro Tyr Val Met Pro Asp Ile Arg Asn Leu Pro Cys Glu Lys Glu Asp 190
 180 185
 Leu Tyr Cys Leu Cys Ser Asp Gly Leu Thr Asn Met Val Pro Asp Ile 205
 195 200 205
 Asp Ile Arg Asp Ile Leu Asn Gln Pro Ala Thr Leu Glu Glu Arg Gly 220
 210 215 220
 Asn Ala Leu Ile Ser Leu Ala Asn Thr Arg Gly Gly Asp Asp Asn Ala 240
 225 230 235
 Thr Val Val Leu Val Arg Ile Gln 245
 245

<210>418

<211>255

<212>PRT

<213>Chlamydia pneumoniae

<400>418

Tyr Lys Leu Met Arg Val Leu Asn Gly Lys Ser Leu Asn Cys Glu Ser 15
 1 5 10
 Ile Asp Leu Lys Ser Lys Asn Phe Pro Arg Ala Arg Ile Phe Cys Lys 30
 20 25
 Ile Ser Asn Leu Arg Thr Val Thr Met Arg Lys Met Leu Val Leu Leu 45
 35 40
 Ala Ser Leu Gly Leu Leu Ser Pro Thr Leu Ser Ser Cys Thr His Leu 60
 50 55
 Gly Ser Ser Gly Ser Tyr His Pro Lys Leu Tyr Thr Ser Gly Ser Lys 90
 65 70 75
 Thr Lys Gly Val Ile Ala Met Leu Pro Val Phe His Arg Pro Gly Lys 95
 85 90
 Ser Leu Glu Pro Leu Pro Trp Asn Leu Glu Gly Glu Phe Thr Glu Glu 110
 100 105
 Ile Ser Lys Arg Phe Tyr Ala Ser Glu Lys Val Phe Leu Ile Lys His 125
 115 120
 Asn Ala Ser Pro Gln Thr Val Ser Gln Phe Tyr Ala Pro Ile Ala Asn 140
 130 135
 Arg Leu Pro Glu Thr Ile Ile Glu Gln Phe Leu Pro Ala Glu Phe Ile 160
 145 150 155
 Val Ala Thr Glu Leu Leu Glu Gln Lys Thr Gly Lys Glu Ala Gly Val 175
 165 170
 Asp Ser Val Thr Ala Ser Val Arg Val Arg Val Phe Asp Ile Arg His 190
 180 185
 His Lys Ile Ala Leu Ile Tyr Gln Glu Ile Ile Ile Glu Cys Ser Gln Pro 205
 195 200
 Leu Thr Thr Leu Val Asn Asp Tyr His Arg Tyr Gly Trp Asn Ser Lys 220
 210 215 220
 His Phe Asp Ser Thr Pro Met Gly Leu Met His Ser Arg Leu Phe Arg 240
 225 230 235
 Glu Val Val Ala Arg Val Glu Gly Tyr Val Cys Ala Asn Tyr Ser 245
 245 250 255

<210>419

<211>231

<212>PRT

<213>Chlamydia pneumoniae

<400>419

Gly Asn Val Gln Val Tyr Ser Ser Leu Val Pro Trp Arg Arg Cys Ser
 1 5 10 15
 Ser Phe Gln Lys Leu Leu Tyr Leu Ala Ser Thr Leu Trp Glu Asn Thr
 20 25 30
 Phe Lys Xaa Arg Gln Val Leu Phe Gly Gly Ala Leu Leu Val Phe Ser
 35 40 45
 Ser Leu Val Ala Leu Ser Val Ser Ser Gln Thr Ala Glu Leu Leu Ser
 50 55 60
 Thr Met Thr Gly Ile Ser Leu Ala Phe Ala Phe Leu Phe Tyr Leu Xaa
 65 70 75 80
 Phe Leu Pro Lys Asp Ile Thr Arg Ala Ile Leu Phe Ser Gly Glu Arg
 85 90 95
 Xaa Val Lys Thr Ser Trp Arg Ala Leu Gly Ser Ala Ile Arg Met Trp
 100 105 110
 Ile Ile Ile Ile Pro Val Thr Gln Leu Ile Gly Ile Met Met Ser Lys
 115 120 125
 Phe Ile Thr Leu Val Leu Pro Thr Gln Glu Ile His Thr Gln Glu Val
 130 135 140
 Thr Gln Glu Val Gln Asn Ser Leu Pro Ile Thr Gly His Tyr Ile Ser
 145 150 155 160
 Met Ile Leu Asn Leu Gly Val Leu Thr Pro Phe Gly Glu Glu Val Phe
 165 170 175
 Phe Arg Gly Ile Leu Gln Thr Phe Leu Lys Asn Lys Met Thr Arg Ile
 180 185 190
 Ala Ala Val Leu Cys Ser Ser Ile Ile Phe Ser Phe Ile His Ile Glu
 195 200 205
 His Ser Leu Gly Ser Trp Val Phe Cys Pro Arg Ala Leu Cys Phe Ser
 210 215 220
 Leu Ile Cys Arg Val Ser Ile
 225 230

<210>420

<211>130

<212>PRT

<213>Chlamydia pneumoniae

<400>420

Met Arg Asp His Ala Phe Ser Lys Leu Ile Gly Thr Val Arg Ala Met
 1 5 10 15
 Val Val Glu Gly Arg Cys Pro Trp Ser Leu Gln Gln Ser Leu Val Ser
 20 25 30
 Met Val Glu His Ile Leu Gly Glu Cys Gln Glu Phe His Glu Ala Val
 35 40 45
 Leu Gln Gly Lys Thr Val Gln Glu Val Gly Ser Glu Ala Gly Asp Val
 50 55 60
 Leu Thr Leu Val Leu Ile Leu Cys Phe Leu Leu Glu Arg Glu Gly Val
 65 70 75 80
 Leu Ala Ser Glu Asp Val Ala Asn Glu Ala Met Glu Lys Leu Arg Arg
 85 90 95
 Arg Ala Pro Tyr Ile Phe Ala Glu Asp Tyr Lys Pro Val Ser Ile Glu
 100 105 110
 Glu Ala Asp Arg Leu Trp Glu Leu Ala Lys His Arg Glu Lys Asn Glu
 115 120 125
 Ser Thr
 130

<210>421

<211>375

<212>PRT

<213>Chlamydia pneumoniae

<400>421

Asn Phe Lys Arg Phe Cys Met Thr Lys Il Ala Phe Ser Glu Lys Ala
 1 5 10 15
 Lys Asn Phe Pro Val Glu Ala Leu Lys Lys Trp Phe Glu Lys Asn Lys

20 25 30
 Arg Ser Leu Pro Trp Arg Asp Asn Pro Thr Pro Tyr Ser Val Trp Val
 35 40 45
 Ser Glu Val Met Leu Gln Gln Thr Arg Ala Glu Val Val Ile Asp Tyr
 50 55 60
 Phe Asn Gln Trp Met Glu Arg Phe Pro Thr Ile Glu Ser Leu Ala Ala
 65 70 75 80
 Ala Lys Glu Glu Asp Val Ile Lys Leu Trp Glu Gly Leu Gly Tyr Tyr
 85 90 95
 Ser Arg Ala Arg His Leu Leu Glu Gly Ala Arg Met Val Met Glu Glu
 100 105 110
 Phe His Gly Lys Ile Pro Asp Asp Ala Ile Ser Leu Ala Gln Ile Arg
 115 120 125
 Gly Val Gly Pro Tyr Thr Val His Ala Ile Leu Ala Phe Ala Phe Lys
 130 135 140
 Arg Arg Ala Ala Ala Val Asp Gly Asn Val Leu Arg Val Leu Ser Arg
 145 150 155 160
 Ile Phe Leu Ile Glu Thr Ser Ile Asp Leu Glu Ser Thr Arg Thr Trp
 165 170 175
 Val Ser Arg Ile Ala Gln Ala Leu Leu Pro His Lys Ser Pro Glu Val
 180 185 190
 Ile Ala Glu Ala Leu Ile Glu Leu Gly Ala Cys Ile Cys Lys Lys Val
 195 200 205
 Pro Gln Cys His Arg Cys Pro Val Arg Gln Ala Cys Gly Ala Trp Arg
 210 215 220
 Glu Asn Lys Gln Phe Val Leu Pro Val Arg His Ala Arg Lys Lys Val
 225 230 235 240
 Ile Phe Leu His Arg Leu Val Ala Ile Val Leu Tyr Asp Gly Ser Leu
 245 250 255
 Val Val Glu Lys Arg Arg Pro Lys Glu Met Met Ala Gly Leu Tyr Glu
 260 265 270
 Phe Pro Tyr Ile Glu Val Glu Pro Glu Glu Gly Leu Gln Asp Ile Glu
 275 280 285
 Gly Phe Thr Lys Lys Met Glu Leu Ser Leu Glu Ser Pro Leu Glu Phe
 290 295 300
 Leu Gly Asn Leu Lys Glu Gln Arg His Ala Phe Thr Asn His Lys Val
 305 310 315 320
 His Leu Cys Pro Ile Ile Phe Lys Ala Thr Ser Leu Pro Gln Phe Gly
 325 330 335
 Glu Leu His Leu Leu Ser Asp Ile Asp His Leu Ala Phe Ser Ser Gly
 340 345 350
 His Lys Lys Ile Lys Asp Ala Leu Leu Ile Tyr Leu Gly Asp Val Arg
 355 360 365
 Ser Arg Glu Ser Ile Gly Val
 370 375

<210>422

<211>234

<212>FRT

<213>Chlamydia pneumoniae

<400>422

Asn Phe Met Gln Leu Ser Asn Asp Lys Arg Ala Ala Leu Gln Tyr Phe
 1 5 10 15
 Met Glu Asn Phe Ser Trp Leu Ala Thr Gln Val Ser Arg Leu Ser Ser
 20 25 30
 Phe Leu Arg Ser Gln Leu Pro Asn His Ser Lys Gln Glu Ile Leu Ala
 35 40 45
 Ser Ile Arg Gln His Arg Cys Arg Val Asn Gly Phe Ile Glu Arg Phe
 50 55 60
 Glu Ser Tyr Lys Val Gln Pro Gly Asp Arg Val Ser Leu Ser Leu Ile
 65 70 75 80
 Pro Ser Thr Lys Gln Gln Pro Ser Ile Leu Trp Glu Asp Asp Tyr Ser
 85 90 95
 Ile Ile Tyr Glu Lys Pro Pro His Leu Thr Thr Glu Gln Met Ala His
 100 105 110

Met Thr Arg Phe Phe Thr Val His Arg Leu Asp Lys Gly Thr Ser Gly
 115 120 125
 Cys Leu Leu Met Gly Lys Ser Lys Gln Ala Ala Thr Glu Leu Met Lys
 130 135 140
 Leu Phe Lys Gln Arg Lys Ile His Lys Gln Tyr Ile Ala Phe Val Phe
 145 150 155 160
 Gly His Pro Lys Lys Lys Phe Gly Thr Val Lys Ser Tyr Thr Ala Pro
 165 170 175
 Val Tyr Arg Arg Cys Gly Ala Val Ile Phe Gly Ala Ala Gly Pro Ser
 180 185 190
 Gln Gly Glu Pro Ile Lys Ser Ala Tyr Lys Trp Asp Cys Trp Val Ile
 195 200 205
 Leu Leu Ser Glu Met Ser Thr Asp Leu Lys Asn Ser Leu Pro Arg
 210 215 220
 Ser Ser Ala Leu Ser Ser Met Leu Thr Pro
 225 230
 <210>422
 <211>364
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>422
 Glu Leu Glu Ala Leu Glu Gln Lys Tyr Gly Lys Ala Val Leu Leu Ile
 1 5 10 15
 Ala Leu Ser Glu Leu Gly Ile Asp Thr Met Ser Leu Leu Ser Gly His
 20 25 30
 Arg Leu Glu Gly Phe Pro Pro Ile Ala Glu Val Met Ala Ala Cys Asp
 35 40 45
 Arg Cys Ser Met Asp Phe Cys Glu Ile Leu Lys Ser Gln Ser Met Asp
 50 55 60
 Leu Trp Ala Asp Ala Ala Ser Cys Val Asp Gly Leu Leu Gln Asp Pro
 65 70 75 80
 Phe Trp Ser Thr Ala Ile Ala Ser Gly Ile Ala Lys Ser Ser Leu Gln
 85 90 95
 Glu Thr Glu Phe Glu Cys Glu Ser Lys Val Met Val Leu Ser Ser Trp
 100 105 110
 Gly Glu Gln Gly Ala Gln Val Cys Ser Pro Phe Asn Leu Glu Arg Ile
 115 120 125
 Cys Met Ser Phe Pro Ser Leu Lys Val Phe Ser Leu Lys Lys Asn Gly
 130 135 140
 Cys Glu Asn Met Gly Ile Gln Leu Ser Ala Ser Cys Met Asn Leu Leu
 145 150 155 160
 Met Ser Ile Phe Phe Val Ala Thr Asn Gly Gly Ser Thr Pro Ile Trp
 165 170 175
 Ile Thr Lys Glu Asn Leu Met Ala Leu Val Ala Leu Val Leu Ser His
 180 185 190
 Tyr Gln Cys Tyr Phe Val Pro Ala Thr Gly Asp Pro Gln Arg Gly Asn
 195 200 205
 Ile Leu Gly Asn Pro Glu Val Asn Ala Ile Leu Ala Arg Gly Met Gly
 210 215 220
 Met Arg Val Asp Leu Glu Arg Lys Arg Gly Gly Glu Ser Ser Ser Ser
 225 230 235 240
 Arg Tyr Leu Glu Leu Ala Ala Arg Cys Phe Glu Asn Ser Leu Thr Lys
 245 250 255
 Thr Ser Leu Leu Ser Asp Ala Asn Asn Val Gln Glu Arg Asp Lys Cys
 260 265 270
 Leu Leu Glu Met Ser Thr Ser Leu Met His Thr Ala Gly Leu Asn Leu
 275 280 285
 Gln Arg Pro Pro Val Pro Thr Pro Ser Gly Val Thr Ala His Pro Gln
 290 295 300
 Pro Gln Pro Asp Pro Val Val Thr Ser Gln Pro Ser Leu Leu Gly Ala
 305 310 315 320
 Arg Glu Arg Ser Pro Val Ser Ser Arg Gly Arg Phe Pro Val Val Leu
 325 330 335
 Pro Leu Ser Val Ile Ser Pro Arg Ser His Pro Gly Arg Val Glu Arg

115	120	125
Ser Leu Ala Asn Ser Pro Glu Ile Ser Lys Ser Leu Leu Glu Thr Ser		
130	135	140
Arg Lys Gly Tyr Leu Ala Ala Leu Ser Ala Ser Ser Tyr Ser Phe Val		
145	150	155
Ser Leu Leu Ser His Phe Gly Ser Ile Met Asn Arg Gly Gly Ser Thr		
165	170	175
Ile Ser Leu Thr Tyr Leu Ala Ser Met Arg Ala Val Pro Gly Tyr Gly		
180	185	190
Gly Gly Met Ser Ser Ala Lys Ala Ala Leu Glu Ser Asp Thr Lys Thr		
195	200	205
Leu Ala Trp Glu Ala Gly Arg Arg Trp Gly Ile Arg Val Asn Thr Ile		
210	215	220
Ser Ala Gly Pro Leu Ala Ser Arg Ala Gly Lys Ala Ile Gly Phe Ile		
225	230	235
Glu Arg Met Val Asp Tyr Tyr Glu Glu Trp Ala Pro Ile Pro Glu Ala		
245	250	255
Met Asn Ala Glu Gln Val Gly Ala Val Ala Ala Phe Leu Ala Ser Pro		
260	265	270
Leu Ala Ser Ala Ile Thr Gly Glu Thr Leu Tyr Val Asp His Gly Ala		
275	280	285
Asn Val Met Gly Ile Gly Pro Glu Met Phe Pro Lys Asp Ser		
290	295	300
<210>426		
<211>300		
<212>PRT		
<213>Chlamydia pneumoniae		
<400>426		
Asn Tyr Gly Asp Ala Met Glu Lys Leu Leu Val Thr Asp Ile Asp Gly		
1	5	10
Thr Ile Thr His Gln Ser His His Leu Asp Lys Lys Val Tyr Glu Arg		
20	25	30
Leu Tyr Ala Leu His Gln Ala Gly Trp Lys Leu Phe Phe Leu Thr Gly		
35	40	45
Arg Tyr Tyr Lys Tyr Ala Ala Arg Leu Phe Ser Asp Phe Asp Ala Pro		
50	55	60
Tyr Leu Leu Gly Cys Gln Asn Gly Ala Ser Val Trp Ser Ser Thr Ser		
65	70	75
Ser Asn Leu Leu Tyr Ser Lys Ser Leu Pro Ser Asp Leu Leu Cys Ile		
85	90	95
Leu Gln Asp Cys Met Glu Gly Ala Thr Ala Leu Phe Ser Val Glu Ser		
100	105	110
Gly Ala Pro Tyr Gly Asp His Tyr Arg Phe Ser Pro Thr Pro Ile		
115	120	125
Ala Gln Asp Leu His Glu Tyr Val Asp Pro Arg Tyr Phe Pro Asn Ala		
130	135	140
Lys Glu Arg Glu Ile Leu Phe Glu Thr Arg Ser Leu Lys Asp Asp Tyr		
145	150	155
Ala Phe Pro Ser Phe Ala Ala Ala Lys Val Phe Gly Leu Arg Asp Glu		
165	170	175
Val Ile Arg Ile Gln Lys Glu Leu Glu Arg Gln Glu Ala Leu Thr Ser		
180	185	190
Val Ala Thr Met Thr Leu Met Arg Trp Pro Phe Asp Phe Arg Tyr Ala		
195	200	205
Ile Leu Phe Leu Thr Asp Lys Ser Val Ser Lys Gly Lys Ala Leu Asp		
210	215	220
Arg Val Val Asn Ile Leu Tyr Asp Gly Lys Lys Pro Phe Val Met Ala		
225	230	235
Ser Gly Asp Asp Ala Asn Asp Leu Asp Leu Ile Glu Arg Gly Asp Phe		
245	250	255
Lys Ile Val Met Ser Ser Ala Pro Glu Glu Met His Val His Ala Asp		
260	265	270
Phe Leu Ala Pro Pro Ala Asp Lys Asn Gly Ile Leu Ser Ala Trp Glu		
275	280	285

Ala Gly Val Arg Tyr Tyr Asp Asp Leu Met Ser Leu
290 295 300

<210>427

<211>164

<212>PRT

<213>Chlamydia pneumoniae

<400>427

Ser Arg Val Leu His Met Phe Phe Asn Leu Phe Ser Leu Val Phe Lys
1 5 10 15
Leu Ser Asp Glu Leu Ala Leu Ala Glu Thr Ile Gln Glu Pro Ile Ser
20 25 30
Val His Glu Met Phe Pro Gly Ser Met Lys Leu Glu Met Phe Lys Met
35 40 45
Leu Gly Ser Leu Ile Leu Leu Leu Thr Ile Phe Gly Phe Gly Val Trp
50 55 60
Ala Phe Lys Lys Phe Val Arg Ser Arg Ser His Gly Phe Gly Gly Ser
65 70 75 80
Ser Gln Ile Lys Ile Leu Glu Arg Arg Ser Leu Thr Pro Lys Thr Ser
85 90 95
Ile Tyr Leu Ile Arg Val Val Asn Lys Thr Leu Val Ile Ala Glu Thr
100 105 110
Pro Glu Lys Ile Thr Leu Leu Thr Glu Phe Pro Pro Asp Thr Asp Ile
115 120 125
Asn His Leu Leu Gln Glu Asn Asn Lys Gln Ser Ser Ser Ala Thr
130 135 140
Ser Asp Phe Leu Ser Lys Ala Ile Gln Lys Ile Gln Lys Lys Gln Glu
145 150 155 160
Thr Asn Gln Asp

<210>428

<211>161

<212>PRT

<213>Chlamydia pneumoniae

<400>428

Met Thr Thr Trp Thr Leu Asn Gln Asn Asn Leu Thr Lys Phe Leu Lys
1 5 10 15
Ser Ser Asp Glu Glu Pro Phe Leu Glu Arg Glu Ser Gly Leu Thr Tyr
20 25 30
Ile Asn Ile Gln Ala Asn Gly Asn Glu Leu Pro Leu Phe Phe Val Ile
35 40 45
Arg Ser Glu Gly Glu Ile Leu Gln Leu Ile Cys Tyr Leu Pro Tyr Gln
50 55 60
Leu His Glu Ser His Lys Ala Ser Thr Ala Arg Leu Leu His Leu Leu
65 70 75 80
Asn Arg Asp Ile Asp Ile Pro Gly Phe Gly Met Asp Glu Glu Gln Gly
85 90 95
Leu Ile Phe Tyr Arg Leu Val Leu Pro Cys Leu Asn Gly Glu Ile His
100 105 110
Asp Thr Leu Leu Arg Ile Tyr Ile Asp Thr Ile Lys Leu Val Cys Asp
115 120 125
Ser Phe Ser His Ala Ile Gly Leu Ile Ser Ser Gly Asn Met Asn Leu
130 135 140
Asp Glu Leu Arg Arg Gln Ala Leu Gln Glu Gln Gln Glu Lys Arg Asn
145 150 155 160
Glu

<210>429

<211>249

<212>PRT

<213>Chlamydia pneumoniae

<400>429

Asp Val Arg Leu Phe Lys Ser Asn Lys Lys Asn Val Met Ser Ser Gln
1 5 10 15
Thr Met Asp Val Leu Ile Phe Tyr Asp Thr Glu Thr Thr Gly Thr Gln

20 25 30
 Ile Glu Arg Asp Arg Ile Ile Glu Ile Ala Ala Tyr Asn Ser Val Thr
 35 40 45
 Asp Glu Ser Phe Leu Thr Tyr Val Asn Pro Glu Ile Pro Ile Pro Asp
 50 55 60
 Glu Ala Ser Lys Ile His Gly Ile Thr Thr Asp Ala Val Leu Ser Ala
 65 70 75 80
 Pro Lys Phe Pro Glu Ala Tyr Glu Gly Phe Arg Lys Phe Cys Gly Glu
 85 90 95
 Asp Ser Ile Leu Val Ala His Asn Asn Asp Gly Phe Asp Phe Pro Leu
 100 105 110
 Leu Gly Lys Glu Cys Arg Arg His Ser Leu Glu Pro Leu Thr Asn Arg
 115 120 125
 Thr Ile Asp Ser Leu Lys Trp Ala Gln Lys Tyr Arg Pro Asp Leu Pro
 130 135 140
 Lys His Asn Leu Gln Tyr Leu Arg Gln Val Tyr Gly Phe Ala Glu Asn
 145 150 155 160
 Gln Ala His Arg Ala Leu Asp Asp Val Val Ile Leu His Lys Val Phe
 165 170 175
 Thr Ser Leu Ile Gly Asp Leu Pro Pro Gln Gln Val Leu Asp Leu Leu
 180 185 190
 Gln Gln Ser Tyr His Pro Lys Val Phe Lys Met Pro Phe Gly Lys Tyr
 195 200 205
 Lys Gly Gln Pro Leu Val Asp Ile Pro Lys Ser Tyr Phe Glu Trp Leu
 210 215 220
 Glu Asn Gln Gly Ala Leu Asp Lys Pro Glu Asn Lys Asp Ile Lys Ala
 225 230 235 240
 Ala Ile Ala Leu Leu His Gln Pro Thr
 245

<210>430

<211>259

<212>PRT

<213>Chlamydia pneumoniae

<400>430

Met Ile Leu Thr Ala Ala Phe Ser Pro Cys Pro Asn Asp Ile Phe Leu
 1 5 10 15
 Phe Arg Ser Phe Leu Lys Asp Pro Gln Phe Arg Pro Leu Leu Asn Gln
 20 25 30
 Val Thr Ile Ala Asp Ile Glu Thr Leu Asn Thr Leu Ala Leu Gln Arg
 35 40 45
 Arg Leu Ser Leu Met Lys Met Ser Ala Ala Leu Phe Pro Leu Val Ser
 50 55 60
 Asp Tyr Tyr Asn Leu Met Asp Val Gly Asn Thr Leu Gly Tyr Asn Ser
 65 70 75 80
 Gly Pro Ile Val Leu Ser Leu Asp Pro Glu Cys Ser Leu Asp Thr Leu
 85 90 95
 Ala Thr Pro Gly Glu Met Thr Thr Ala His Ala Leu Cys Lys Leu Tyr
 100 105 110
 Tyr Pro Lys Ala Lys Leu Ile Pro Met Pro Tyr Asp Lys Ile Leu Ser
 115 120 125
 Ala Ile Leu Gln Gly Lys Val Asp Gly Gly Ala Leu Ile His Glu Glu
 130 135 140
 Arg Phe Ser Tyr Asp Leu Gln Leu Thr Leu Arg Ala Asp Phe Gly Glu
 145 150 155 160
 Leu Trp Arg Arg Lys Thr Ile Phe Pro Leu Pro Leu Gly Cys Leu Ala
 165 170 175
 Ile Ala Lys Tyr Val Pro Met Ala Thr Val Asp Ala Leu Thr Ala Ala
 180 185 190
 Leu Arg Lys Ser Leu Ile Cys Ser Leu Lys Asp Pro Ile Thr Ala Gly
 195 200 205
 Ala Lys Ala Val Glu Tyr Ser Lys Asn Lys Asn Val Thr Val Ile His
 210 215 220
 Arg Phe Ile Gly Thr Tyr Ile Asn Lys Glu Thr Phe Gln Leu Ser Lys
 225 230 235 240

Thr Gly Lys Lys Ala Leu His Met Leu Tyr Lys Ala Asn Glu Cys Cys
 245 250 255
 Gln Tyr Thr

<210>431

<211>168

<212>PRT

<213>Chlamydia pneumoniae

<400>431

Glu Pro Ile Ser Thr Lys Lys Pro Phe Asn Tyr Leu Lys Leu Gly Lys
 1 5 10 15
 Lys Leu Tyr Ile Cys Ser Gly Arg Pro Met Asn Ala Val Asn Thr Pro
 20 25 30
 Lys Lys Ile Leu Cys Ile Val Ala Asp Tyr Arg Glu Ile Ser Pro Leu
 35 40 45
 Ile Glu Gln Leu Asp Phe Thr Gln Ile Asn Glu His Leu Tyr Ser Tyr
 50 55 60
 Arg Cys Thr Asp Tyr His Leu Asp Leu Tyr Ile Val His Val Trp Gly
 65 70 75 80
 Ser Thr Ala Val Leu Asn Ala Leu Gln Ser Tyr Cys Gln Ala Tyr Thr
 85 90 95
 Asp Tyr Asp Leu Trp Ile Asn Pro Gly Phe Val Gly Ala Cys Ser Pro
 100 105 110
 Glu Ile Pro Leu Gly Gln Cys Tyr Thr Ile Glu Lys Ile Ala Asn Leu
 115 120 125
 Thr Thr Asp Thr Pro Pro Val Leu Ser Glu Asp Pro Pro Tyr Ile Phe
 130 135 140
 Asp His Leu Pro Asp Ser Leu Pro Lys Ser Ser Leu Val Thr Ser Pro
 145 150 155 160
 Val Leu Tyr His Tyr Gly Phe Gln
 165

<210>432

<211>659

<212>PRT

<213>Chlamydia pneumoniae

<400>432

Met Lys Leu Leu Leu Lys Ala Val Leu Arg His Lys Asn His Leu Val
 1 5 10 15
 Ile Leu Gly Cys Ser Leu Leu Ala Ile Leu Gly Leu Thr Phe Ser Ser
 20 25 30
 Gln Met Glu Ile Phe Ser Leu Gly Met Ile Ala Lys Thr Gly Pro Asp
 35 40 45
 Ala Phe Leu Leu Phe Gly Arg Lys Glu Ser Gly Lys Leu Val Lys Val
 50 55 60
 Ser Glu Leu Ser Gln Lys Asp Ile Leu Glu Asn Trp Gln Ala Ile Ser
 65 70 75 80
 Lys Asp Ser Glu Thr Leu Thr Val Ser Asp Ala Thr Thr Tyr Ile Ala
 85 90 95
 Glu His Gly Lys Ser Thr Ala Ser Leu Thr Ser Lys Leu Ser Lys Phe
 100 105 110
 Val Arg Asn Tyr Ile Asp Val Ser Arg Phe Arg Gly Leu Ala Ile Phe
 115 120 125
 Leu Ile Cys Val Ala Ile Phe Lys Ala Val Thr Leu Phe Phe Gln Arg
 130 135 140
 Phe Leu Gly Gln Val Val Ala Ile Arg Val Ser Arg Asp Leu Arg Gln
 145 150 155 160
 Asp Tyr Phe Lys Ala Leu Gln Gln Leu Pro Met Thr Phe Phe His Asp
 165 170 175
 His Asp Ile Gly Asn Leu Ser Asn Arg Val Met Thr Asp Ser Ala Ser
 180 185 190
 Ile Ala Leu Ala Val Asn Ser Leu Met Ile Asn Tyr Ile Gln Ala Pro
 195 200 205
 Ile Thr Phe Ile Leu Thr Leu Gly Val Cys Leu Ser Ile Ser Tyr Lys
 210 215 220

Phe Ser Ile Leu Ile Cys Val Ala Phe Pro Ile Phe Ile Met Pro Ile
 225 230 235 240
 Val Val Ile Ala Arg Lys Ile Lys Asn Leu Ala Lys Arg Ile Gln Lys
 245 250 255
 Ser Gln Asp Ser Phe Ser Ser Val Leu Tyr Asp Phe Leu Ala Gly Val
 260 265 270
 Met Thr Val Lys Val Phe Arg Thr Glu Lys Phe Ala Phe Thr Lys Tyr
 275 280 285
 Cys Glu His Asn Asn Lys Ile Ser Ala Leu Glu Glu Lys Ser Ala Ala
 290 295 300
 Tyr Gly Leu Leu Pro Arg Pro Leu Leu His Thr Ile Ala Ser Leu Phe
 305 310 315 320
 Phe Ala Phe Val Val Val Ile Gly Ile Tyr Lys Phe Ala Ile Pro Pro
 325 330 335
 Glu Glu Leu Ile Val Phe Cys Gly Leu Leu Tyr Leu Ile Tyr Asp Pro
 340 345 350
 Ile Lys Lys Phe Gly Asp Glu Xaa Thr Ser Ile Met Arg Gly Cys Ala
 355 360 365
 Ala Ala Glu Arg Phe Tyr Glu Val Leu Asn His Pro Asp Leu His Ser
 370 375 380
 Gln Lys Glu Arg Glu Ile Glu Phe Leu Gly Leu Ser Asn Thr Ile Thr
 385 390 395 400
 Phe Glu Asn Val Ser Phe Gly Tyr Gln Glu Asp Lys His Ile Leu Lys
 405 410 415
 Asn Leu Ser Phe Thr Leu His Lys Gly Glu Ala Leu Gly Ile Val Gly
 420 425 430
 Pro Thr Gly Ser Gly Lys Thr Thr Leu Val Lys Leu Leu Pro Arg Leu
 435 440 445
 Tyr Glu Val Ser Gln Gly Lys Ile Leu Ile Asp Ser Leu Pro Ile Thr
 450 455 460
 Glu Tyr Asn Lys Gly Ser Leu Arg Asn His Ile Ala Cys Val Leu Gln
 465 470 475 480
 Asn Pro Phe Leu Phe Tyr Asp Thr Val Trp Asn Asn Leu Thr Cys Gly
 485 490 495
 Lys Asp Met Glu Glu Glu Ala Val Leu Glu Ala Leu Lys Arg Ala Tyr
 500 505 510
 Ala Asp Glu Phe Ile Leu Lys Leu Pro Lys Gly Val His Ser Val Leu
 515 520 525
 Glu Glu Ser Gly Lys Asn Leu Ser Gly Gly Gln Gln Gln Arg Leu Ala
 530 535 540
 Ile Ala Arg Ala Leu Leu Lys Asn Ala Ser Ile Leu Ile Leu Asp Glu
 545 550 555 560
 Ala Thr Ser Ala Leu Asp Ala Ile Ser Glu Asn Tyr Ile Lys Asn Ile
 565 570 575
 Ile Gly Glu Leu Lys Gly Gln Cys Thr Gln Ile Ile Ile Ala His Lys
 580 585 590
 Leu Thr Thr Leu Glu His Val Asp Arg Val Leu Tyr Ile Glu Asn Gly
 595 600 605
 Gln Lys Ile Ala Glu Gly Thr Lys Glu Glu Leu Leu Gln Thr Cys Pro
 610 615 620
 Glu Phe Leu Lys Met Trp Glu Leu Ser Gly Thr Lys Glu Tyr Asn Arg
 625 630 635 640
 Val Phe Val Pro Asp His Lys Leu Val Ala Asn Pro Thr Asp Met Ala
 645 650 655
 Ile Thr Thr

<210>433

<211>344

<212>PRT

<213>Chlamydia pneumoniae.

<400>433

Leu Cys Leu Arg Ile Val Cys Ile Lys Met Ile Leu Phe Ile Arg Gly
 1 5 10 15

Glu His Ile Leu Met Glu Leu Leu Pro His Glu Lys Gln Val Val Glu

20 35 30
 Tyr Glu Lys Ala Ile Ala Glu Phe Lys Glu Lys Asn Lys Lys Asn Ser
 35 40 45
 Leu Leu Ser Ser Ser Glu Ile Gln Lys Leu Glu Lys Arg Leu Asp Lys
 50 55 60
 Leu Lys Glu Lys Ile Tyr Ser Asp Leu Thr Pro Trp Glu Arg Val Gln
 65 70 75 80
 Ile Cys Arg His Pro Ser Arg Pro Arg Thr Val Asn Tyr Ile Glu Gly
 85 90 95
 Met Cys Glu Glu Phe Val Glu Leu Cys Gly Asp Arg Thr Phe Arg Asp
 100 105 110
 Asp Pro Ala Val Val Gly Gly Phe Val Lys Ile Gln Gly Gln Arg Phe
 115 120 125
 Val Leu Ile Gly Gln Glu Lys Gly Cys Asp Thr Ala Ser Arg Leu His
 130 135 140
 Arg Asn Phe Gly Met Leu Cys Pro Glu Gly Phe Arg Lys Ala Leu Arg
 145 150 155 160
 Leu Gly Lys Leu Ala Glu Lys Phe Gly Leu Pro Val Val Phe Leu Val
 165 170 175
 Asp Thr Pro Gly Ala Tyr Pro Gly Leu Thr Ala Glu Glu Arg Gly Gln
 180 185 190
 Gly Trp Ala Ile Ala Lys Asn Leu Phe Glu Leu Ser Arg Leu Ala Thr
 195 200 205
 Pro Val Ile Ile Val Val Ile Gly Glu Gly Cys Ser Gly Gly Ala Leu
 210 215 220
 Gly Met Ala Val Gly Asp Ser Val Ala Met Leu Glu His Ser Tyr Tyr
 225 230 235 240
 Ser Val Ile Ser Pro Glu Gly Cys Ala Ser Ile Leu Trp Lys Asp Pro
 245 250 255
 Lys Lys Asn Ser Glu Ala Ala Ser Met Leu Lys Met His Gly Glu Asn
 260 265 270
 Leu Lys Gln Phe Gly Ile Ile Asp Thr Val Ile Lys Glu Pro Ile Gly
 275 280 285
 Gly Ala His His Asp Pro Ala Leu Val Tyr Ser Asn Val Arg Glu Phe
 290 295 300
 Ile Ile Gln Glu Trp Leu Arg Leu Lys Asp Leu Ala Ile Glu Glu Leu
 305 310 315 320
 Leu Glu Lys Arg Tyr Glu Lys Phe Arg Ser Ile Gly Leu Tyr Glu Thr
 325 330 335
 Thr Ser Glu Ser Gly Pro Glu Ala
 340

<210>434

<211>434

<212>PRT

<213>Chlamydia pneumoniae

<400>434

Ser Gln Thr Gly Phe Leu Pro Gly Leu Thr Leu Ile Phe Val Ile Ile
 1 5 10 15
 Ile Val Trp Cys Asn Ala Phe Leu Ile Lys Leu Cys Val Ile Met Gly
 20 25 30
 Leu Gln Ser Arg Leu Gln His Cys Ile Glu Val Ser Gln Asn Ser Asn
 35 40 45
 Phe Asp Ser Gln Val Lys Gln Phe Ile Tyr Ala Cys Gln Asp Lys Thr
 50 55 60
 Leu Arg Gln Ser Val Leu Lys Ile Phe Arg Tyr His Pro Leu Leu Lys
 65 70 75 80
 Ile His Asp Ile Ala Arg Ala Val Tyr Leu Leu Met Ala Leu Glu Glu
 85 90 95
 Gly Glu Asp Leu Gly Leu Ser Phe Leu Asn Val Gln Gln Tyr Pro Ser
 100 105 110
 Gly Ala Val Glu Leu Phe Ser Cys Gly Gly Phe Pro Trp Lys Gly Leu
 115 120 125
 Pro Tyr Pro Ala Glu His Ala Glu Phe Gly Leu Leu Leu Gln Ile
 130 135 140

Ala Glu Phe Tyr Glu Glu Ser Gln Ala Tyr Val Ser Lys Met Ser His
 145 150 155 160
 Phe Gln Gln Ala Leu Phe Asp His Gln Gly Ser Val Phe Pro Ser Leu
 165 170 175
 Trp Ser Gln Glu Asn Ser Arg Leu Leu Lys Glu Lys Thr Thr Leu Ser
 180 185 190
 Gln Ser Phe Leu Phe Gln Leu Gly Met Gln Ile His Pro Glu Tyr Ser
 195 200 205
 Leu Glu Asp Pro Ala Leu Gly Phe Trp Met Gln Arg Thr Arg Ser Ser
 210 215 220
 Ser Ala Phe Val Ala Ala Ser Gly Cys Gln Ser Ser Leu Gly Ala Tyr
 225 230 235 240
 Ser Ser Gly Asp Val Gly Val Ile Ala Tyr Gly Pro Cys Ser Gly Asp
 245 250 255
 Ile Ser Asp Cys Tyr Tyr Phe Gly Cys Gly Ile Ala Lys Glu Phe
 260 265 270
 Val Cys Gln Xaa Ser His Gln Thr Thr Glu Ile Ser Phe Leu Thr Ser
 275 280 285
 Thr Gly Lys Pro His Pro Arg Asn Thr Gly Phe Ser Tyr Leu Arg Asp
 290 295 300
 Ser Tyr Val His Leu Pro Ile Arg Cys Lys Ile Thr Ile Ser Asp Lys
 305 310 315 320
 Gln Tyr Arg Val His Ala Ala Leu Ala Glu Ala Thr Ser Ala Met Thr
 325 330 335
 Phe Ser Ile Phe Cys Lys Gly Lys Asn Cys Gln Val Val Asp Gly Pro
 340 345 350
 Arg Leu Arg Ser Cys Ser Leu Asp Ser Tyr Lys Gly Pro Gly Asn Asp
 355 360 365
 Ile Met Ile Leu Gly Glu Asn Asp Ala Ile Asn Ile Val Ser Ala Ser
 370 375 380
 Pro Tyr Met Glu Ile Phe Ala Leu Gln Gly Lys Glu Lys Phe Trp Asn
 385 390 395 400
 Ala Asp Phe Leu Ile Asn Ile Pro Tyr Lys Glu Glu Gly Val Met Leu
 405 410 415
 Ile Phe Glu Lys Lys Val Thr Ser Glu Lys Gly Arg Phe Phe Thr Lys
 420 425 430
 Met Asn

<210>435

<211>85

<212>PRT

<213>Chlamydia pneumoniae

<400>435

Arg Arg Met Pro Asp Ser Leu His Lys Thr Leu Arg Ser Val Thr Gly
 1 5 10 15
 Val Gly Gln Ile Pro His Val Leu Gln Asp Lys Val Ile Leu Ser Lys
 20 25 30
 Glu Ile Pro His Lys Lys Thr Val Leu Gln His Leu Lys Gly Thr Ala
 35 40 45
 Val His Leu Lys Ser Leu Ser Leu Asn Pro Arg Leu Leu Leu Arg Pro
 50 55 60
 Ser Lys Asp Arg Arg Pro Glu Gln Tyr His Glu Phe Leu Val Lys Asp
 65 70 75 80
 Gly Ser Gly Lys Ser
 85

<210>436

<211>105

<212>PRT

<213>Chlamydia pneumoniae

<400>436

Glu Ala Leu Ser Asn Met Ala Thr Met Thr Lys Lys Lys Leu Ile Ser
 1 5 10 15
 Thr Ile Ser Gln Asp His Lys Ile His Pro Asn His Val Arg Thr Val
 20 25 30

Ile Gln Asn Phe Leu Asp Lys Met Thr Asp Ala Leu Val Lys Gly Asp
 35 40 45
 Arg Leu Glu Phe Arg Asp Phe Gly Val Leu Gln Val Val Glu Arg Lys
 50 55 60
 Pro Lys Val Gly Arg Asn Pro Arg Asn Ala Ala Val Pro Ile His Ile
 65 70 75 90
 Pro Ala Arg Arg Ala Val Lys Phe Thr Pro Gly Lys Arg Met Lys Arg
 85 90 95
 Leu Ile Glu Thr Pro Asn Lys His Ser
 100 105

<210>437

<211>264

<212>PRT

<213>Chlamydia pneumoniae

<400>437

Met Lys Leu Thr Lys Tyr Leu Asn Thr Lys Gln Leu Arg Ser Met Ile
 1 5 10 15
 Ser Arg Leu Phe Val Arg Tyr Ser Leu Pro Met Ser Lys Gln Leu Ser
 20 25 30
 Phe Phe Ala Leu Cys Val Leu Gly Ser His Pro Ile Phe Ala Gln Thr
 35 40 45
 Pro Asn Pro Pro Gln Arg Val Arg Arg Ser Glu Val Ile Phe Ile Asp
 50 55 60
 Pro Gly His Gly Gly Lys Asp Gln Gly Thr Ala Ser Lys Glu Leu His
 65 70 75 80
 Tyr Glu Glu Lys Ser Leu Thr Leu Ser Leu Ala Leu Thr Val Gln Ser
 85 90 95
 Tyr Leu Lys Arg Met Gly Tyr Lys Pro Gln Leu Thr Arg Ser Ser Asp
 100 105 110
 Val Tyr Val Asp Leu Gly Lys Arg Val Ala Leu Ser Asn Arg Gly Gln
 115 120 125
 Gly Asp Val Phe Ile Ser Ile His Cys Asn His Ser Ser Asn Ala Ala
 130 135 140
 Ala Phe Gly Thr Glu Val Tyr Phe Tyr Asn Gly Lys Val Gly Ser Pro
 145 150 155 160
 Thr Arg Asn Arg Met Ser Glu Val Leu Gly Lys Asn Ile Leu Ala Ala
 165 170 175
 Met Glu Lys Asn Gly Ile Leu Lys Ser Arg Gly Leu Lys Thr Ala Asn
 180 185 190
 Phe Val Val Ile Arg Asp Thr Ser Met Pro Ala Val Leu Val Glu Thr
 195 200 205
 Gly Phe Leu Ser Asn Ser Arg Glu Arg Ala Ala Leu Gln Asp Ala Arg
 210 215 220
 Tyr Arg Met His Val Ala Lys Gly Ile Ala Glu Gly Val His Asn Phe
 225 230 235 240
 Leu Ser Gly Pro Ser Phe Gln Lys Pro Lys Gln Asn Ile Ala Lys Ile
 245 250 255
 Arg Lys Pro Gln Ile Gln Ala Asn
 260

<210>438

<211>483

<212>PRT

<213>Chlamydia pneumoniae

<400>438

Met Asp Leu Lys Glu Leu Leu His Gly Val Gln Ala Lys Ile Tyr Gly
 1 5 10 15
 Lys Val Arg Pro Leu Glu Val Arg Asn Leu Thr Arg Asp Ser Arg Cys
 20 25 30
 Val Ser Val Gly Asp Ile Phe Ile Ala His Lys Gly Gln Arg Tyr Asp
 35 40 45
 Gly Asn Asp Phe Ala Val Asp Ala Leu Ala Asn Gly Ala Ile Ala Ile
 50 55 60
 Ala Ser Ser Leu Tyr Asn Pro Phe Leu Ser Val Val Gln Ile Ile Thr
 65 70 75 80

Pro Asn Leu Glu Glu Leu Glu Ala Glu Leu Ser Ala Lys Tyr Glu
 85 90 95
 Tyr Pro Ser Ser Lys Leu His Thr Ile Gly Val Thr Gly Thr Asn Gly
 100 105 110
 Lys Thr Thr Val Thr Cys Leu Ile Lys Ala Leu Leu Asp Ser Tyr Glu
 115 120 125
 Lys Pro Ser Gly Leu Leu Gly Thr Ile Glu His Ile Leu Gly Glu Gly
 130 135 140
 Val Ile Lys Asp Gly Phe Thr Thr Pro Thr Pro Ala Leu Leu Gln Lys
 145 150 155 160
 Tyr Leu Ala Thr Met Val Arg Gln Asn Arg Asp Ala Val Val Met Glu
 165 170 175
 Val Ser Ser Ile Gly Leu Ala Ser Gly Arg Val Ala Tyr Thr Asn Phe
 180 185 190
 Asp Thr Ala Val Leu Thr Asn Ile Thr Leu Asp His Leu Asp Phe His
 195 200 205
 Gly Thr Phe Glu Thr Tyr Val Ala Ala Lys Ala Lys Leu Phe Ser Leu
 210 215 220
 Val Pro Pro Ser Gly Met Val Val Ile Asn Thr Asp Ser Pro Tyr Ala
 225 230 235 240
 Ser Gln Cys Ile Glu Ser Ala Lys Ala Pro Val Ile Thr Tyr Gly Ile
 245 250 255
 Glu Ser Ala Ala Asp Tyr Arg Ala Thr Asp Ile Gln Leu Ser Ser Ser
 260 265 270
 Gly Thr Lys Tyr Thr Leu Val Tyr Gly Asp Gln Lys Ile Ala Cys Ser
 275 280 285
 Ser Ser Phe Ile Gly Lys Tyr Asn Val Tyr Asn Leu Leu Ala Ala Ile
 290 295 300
 Ser Thr Val His Ala Ser Leu Arg Cys Asp Leu Glu Asp Leu Leu Glu
 305 310 315 320
 Lys Ile Gly Leu Cys Gln Pro Pro Pro Gly Arg Leu Asp Pro Val Leu
 325 330 335
 Met Gly Pro Cys Pro Val Tyr Ile Asp Tyr Ala His Thr Pro Asp Ala
 340 345 350
 Leu Asp Asn Val Leu Thr Gly Leu His Glu Leu Leu Pro Glu Gly Gly
 355 360 365
 Arg Leu Ile Val Val Phe Gly Cys Gly Gly Asp Arg Asp Arg Ser Lys
 370 375 380
 Arg Lys Leu Met Ala Gln Val Val Glu Arg Tyr Gly Phe Ala Val Val
 385 390 395 400
 Thr Ser Asp Asn Pro Arg Ser Glu Pro Pro Glu Asp Ile Val Asn Glu
 405 410 415
 Ile Cys Asp Gly Phe Tyr Ser Lys Asn Tyr Phe Ile Glu Ile Asp Arg
 420 425 430
 Lys Gln Ala Ile Thr Tyr Ala Leu Ser Ile Ala Ser Asp Arg Asp Ile
 435 440 445
 Val Leu Ile Ala Gly Lys Gly His Glu Ala Tyr Gln Ile Phe Lys His
 450 455 460
 Gln Thr Val Ala Phe Asp Asp Lys Gln Thr Val Cys Glu Val Leu Ala
 465 470 475 480
 Ser Tyr Val

<210>439

<211>653

<212>PRT

<213>Chlamydia pneumoniae

<400>439

Met Ser Tyr Arg Lys Arg Ser Thr Leu Ile Val Leu Gly Val Phe Ala
 1 5 10 15
 Leu Tyr Ala Leu Leu Val Leu Arg Tyr Tyr Lys Xaa Gln Ile Cys Glu
 20 25 30
 Gly Asp His Trp Ala Ala Glu Ala Leu Gly Gln His Glu Phe Cys Val
 35 40 45
 Arg Asp Pro Phe Arg Arg Gly Thr Phe Phe Ala Asn Thr Thr Val Arg

50 55 60
 Lys Gly Asp Lys Asp Leu Gln Gln Pro Phe Ala Val Asp Ile Thr Lys
 65 70 75 80
 Phe His Leu Cys Ala Asp Pro Leu Ala Ile Pro Glu Cys His Arg Asp
 85 90 95
 Glu Ile Ile Gln Gly Ile Leu Cln Phe Ile Glu Gly Gln Thr Tyr Asp
 100 105 110
 Asp Leu Ser Leu Lys Leu Asp Lys Lys Ser Arg Tyr Cys Lys Leu Tyr
 115 120 125
 Pro Leu Leu Asp Val Ser Val His Asp Arg Leu Ser Leu Trp Trp Lys
 130 135 140
 Gly Tyr Ala Thr Lys His Arg Leu Pro Thr Asn Ala Leu Phe Phe Ile
 145 150 155 160
 Thr Asp Tyr Gln Arg Ser Tyr Pro Phe Gly Lys Leu Leu Gly Cln Val
 165 170 175
 Leu His Thr Leu Arg Glu Ile Lys Asp Glu Lys Thr Gly Lys Ala Phe
 180 185 190
 Pro Thr Gly Gly Met Glu Ala Tyr Phe Asn His Ile Leu Glu Gly Asp
 195 200 205
 Val Gly Glu Arg Lys Leu Leu Arg Ser Pro Leu Asn Arg Leu Asp Thr
 210 215 220
 Asn Arg Val Ile Lys Leu Pro Lys Asp Gly Ser Asp Ile Tyr Leu Thr
 225 230 235 240
 Ile Asn Pro Val Ile Gln Thr Ile Ala Glu Glu Glu Leu Glu Arg Gly
 245 250 255
 Val Leu Glu Ala Lys Ala Gln Gly Gly Arg Leu Ile Leu Met Asn Ser
 260 265 270
 Gln Thr Gly Glu Ile Leu Ala Leu Ala Gln Tyr Pro Phe Phe Asp Pro
 275 280 285
 Thr Asn Tyr Lys Glu Tyr Phe Asn Asn Lys Glu Arg Ile Glu His Thr
 290 295 300
 Lys Val Ser Phe Val Ser Asp Val Phe Glu Pro Gly Ser Ile Met Lys
 305 310 315 320
 Pro Leu Thr Val Ala Ile Ala Leu Gln Ala Asn Glu Glu Ala Ser Leu
 325 330 335
 Lys Ser Gln Lys Lys Ile Phe Asp Pro Glu Glu Pro Ile Asp Val Thr
 340 345 350
 Arg Thr Leu Phe Pro Gly Arg Lys Gly Ser Pro Leu Lys Asp Ile Ser
 355 360 365
 Arg Asn Ser Gln Leu Asn Met Tyr Met Ala Ile Gln Lys Ser Ser Asn
 370 375 380
 Val Tyr Val Ala Gln Leu Ala Asp Arg Ile Ile Gln Ser Leu Gly Val
 385 390 395 400
 Ala Trp Tyr Gln Gln Lys Leu Leu Ala Leu Gly Phe Gly Arg Lys Thr
 405 410 415
 Gly Ile Glu Leu Pro Ser Glu Ala Ser Gly Leu Val Pro Ser Pro His
 420 425 430
 Arg Phe His Ile Asn Gly Ser Leu Glu Trp Ser Leu Ser Thr Pro Tyr
 435 440 445
 Ser Leu Ala Met Gly Tyr Asn Ile Leu Ala Thr Gly Ile Gln Met Val
 450 455 460
 Gln Ala Tyr Ala Ile Leu Ala Asn Gly Gly Tyr Ala Val Arg Pro Thr
 465 470 475 480
 Leu Val Lys Lys Ile Val Ser Ala Ser Gly Glu Glu Tyr His Leu Pro
 485 490 495
 Thr Lys Glu Lys Thr Arg Leu Phe Ser Glu Glu Ile Thr Arg Glu Val
 500 505 510
 Val Arg Ala Met Arg Phe Thr Thr Leu Pro Gly Gly Ser Gly Phe Arg
 515 520 525
 Ala Ser Pro Lys His His Ser Ser Ala Gly Lys Thr Gly Thr Thr Glu
 530 535 540
 Lys Met Ile His Gly Lys Tyr Asp Lys Arg Arg His Ile Ala Ser Phe
 545 550 555 560
 Ile Gly Phe Thr Pro Val Glu Ser Ser Glu Gly Asn Phe Pro Pro Leu

			565				570				575				
Val	Met	Leu	Val	Ser	Ile	Asp	Asp	Pro	Glu	Tyr	Gly	Leu	Arg	Ala	Asp
			580					585					590		
Gly	Thr	Lys	Asn	Tyr	Met	Gly	Gly	Arg	Cys	Ala	Ala	Pro	Ile	Phe	Ser
		595					600					605			
Arg	Val	Ala	Asp	Arg	Thr	Leu	Leu	Tyr	Leu	Gly	Ile	Leu	Pro	Asp	Lys
	610					615					620				
Lys	Leu	Arg	Asn	Cys	Asp	Glu	Glu	Ala	Ala	Ala	Leu	Lys	Arg	Leu	Tyr
625					630					635					640
Glu	Glu	Trp	Asn	Arg	Ser	Pro	Lys	Gln	Gly	Gly	Thr	Arg			
			645					650							

<210>440

<211>300

<212>PRT

<213>Chlamydia pneumoniae

<400>440

Glu	Ile	Leu	Met	Ser	Glu	Arg	Ala	His	Ile	Pro	Val	Leu	Val	Glu	Glu
1				5					10					15	
Cys	Leu	Ala	Leu	Phe	Ala	Gln	Arg	Pro	Pro	Gln	Thr	Phe	Arg	Asp	Val
			20					25					30		
Thr	Leu	Gly	Ala	Gly	Gly	His	Ala	Tyr	Ala	Phe	Leu	Glu	Ala	Tyr	Pro
		35					40						45		
Ser	Leu	Thr	Cys	Tyr	Asp	Gly	Ser	Asp	Arg	Asp	Leu	Gln	Ala	Leu	Ala
	50					55					60				
Ile	Ala	Glu	Lys	Arg	Leu	Glu	Thr	Phe	Gln	Asp	Arg	Val	Ser	Phe	Ser
	65				70					75					80
His	Ala	Ser	Phe	Glu	Asp	Leu	Ala	Asn	Gln	Pro	Thr	Pro	Arg	Leu	Tyr
			85						90					95	
Asp	Gly	Val	Leu	Ala	Asp	Leu	Gly	Val	Ser	Ser	Met	Gln	Leu	Asp	Thr
		100						105					110		
Leu	Ser	Arg	Gly	Phe	Ser	Phe	Gln	Gly	Glu	Lys	Glu	Glu	Leu	Asp	Met
		115					120					125			
Arg	Met	Asp	Gln	Thr	Gln	Glu	Leu	Ser	Ala	Ser	Asp	Val	Leu	Asn	Ser
	130					135					140				
Leu	Lys	Glu	Glu	Glu	Leu	Gly	Arg	Ile	Phe	Arg	Glu	Tyr	Gly	Glu	Glu
145					150					155					160
Pro	Gln	Trp	Lys	Ser	Ala	Ala	Lys	Ala	Val	Val	His	Phe	Arg	Lys	His
			165						170					175	
Lys	Lys	Ile	Leu	Ser	Ile	Gln	Asp	Val	Lys	Glu	Ala	Leu	Leu	Gly	Val
		180						185					190		
Phe	Pro	His	Tyr	Arg	Phe	His	Arg	Lys	Ile	His	Pro	Leu	Thr	Leu	Ile
	195						200					205			
Phe	Gln	Ala	Leu	Arg	Val	Tyr	Val	Asn	Gly	Glu	Asp	Arg	Gln	Leu	Lys
	210					215					220				
Ser	Leu	Leu	Thr	Ser	Ala	Ile	Ser	Trp	Leu	Ala	Pro	Gln	Gly	Arg	Leu
225					230					235					240
Val	Ile	Ile	Ser	Phe	Cys	Ser	Ser	Glu	Asp	Arg	Pro	Val	Lys	Trp	Phe
			245						250					255	
Phe	Lys	Glu	Ala	Glu	Ala	Ser	Gly	Leu	Gly	Lys	Val	Ile	Thr	Lys	Lys
		260					265						270		
Val	Ile	Gln	Pro	Thr	Tyr	Gln	Glu	Val	Arg	Arg	Asn	Pro	Arg	Ser	Arg
	275					280						285			
Ser	Ala	Lys	Leu	Arg	Cys	Phe	Glu	Lys	Ala	Ser	Gln				
	290					295					300				

<210>441

<211>184

<212>PRT

<213>Chlamydia pneumoniae

<400>441

Gly	Leu	Ala	Met	Val	Glu	Ile	Phe	Asn	Tyr	Ser	Thr	Ser	Ile	Tyr	Glu
1				5					10					15	
Gln	His	Ala	Ser	Asn	Asn	Arg	Ile	Val	Ser	Asp	Phe	Arg	Lys	Glu	Ile
		20						25					30		
Gln	Met	Glu	Gly	Ile	Ser	Ile	Arg	Asp	Val	Ala	Lys	His	Ala	Gln	Ile

35 40
 Leu Asp Met Asn Pro Lys Pro Ser Ala Leu Thr Ser Leu Leu Gln Thr
 50 55 60
 Asn Gln Lys Ser His Trp Ala Cys Phe Ser Pro Pro Asn Asn Phe Tyr
 65 70 75 80
 Lys Gln Arg Phe Ser Thr Pro Tyr Leu Ala Pro Ser Leu Gly Ser Pro
 85 90 95
 Asp Gln Gln Asp Glu Asp Ile Glu Lys Ile Ser Ser Phe Leu Lys Val
 100 105 110
 Leu Thr Arg Gly Lys Phe Ser Tyr Arg Ser Gln Ile Thr Pro Phe Leu
 115 120 125
 Ser Tyr Lys Asp Lys Glu Glu Glu Glu Asp Glu Asp Pro Glu Glu Asp
 130 135 140
 Asp Asp Asp Pro Arg Val Gln Gln Gly Lys Val Leu Leu Lys Ala Leu
 145 150 155 160
 Asp Leu Gly Val Lys Ser Thr Asn Val Met Ile Asp Tyr Val Ile Ser
 165 170 175
 Arg Ile Phe Gln Phe Val Gln Gly
 180

<210>442

<211>143

<212>PRT

<213>Chlamydia pneumoniae

<400>442

Cys Met Leu Asp Asn Glu Trp Lys Ala Ile Leu Gly Trp Gly Asp Asp
 1 5 10 15
 Glu Leu Glu Glu Leu Arg Ile Ser Gly Tyr Ser Phe Leu Arg Gln Gly
 20 25 30
 His Tyr Ser Lys Ala Ile Leu Phe Glu Ala Leu Val Ile Leu Asp
 35 40 45
 Pro Leu Ser Ile Tyr Asp His Gln Thr Leu Gly Gly Leu Tyr Leu Gln
 50 55 60
 Ile Gly Glu Asn Ser Gln Ala Leu Ala Val Leu Asp Gln Ala Leu Arg
 65 70 75 80
 Met Gln Gly Asp His Leu Pro Thr Leu Leu Asn Lys Thr Lys Ala Leu
 85 90 95
 Phe Cys Leu Gly Arg Ile Glu Glu Ala Thr Ala Ile Ala Thr Tyr Leu
 100 105 110
 Ser Ser Cys Pro Ile Pro Ala Ile Ala Asn Asp Ala Glu Ala Leu Leu
 115 120 125
 Met Ser Tyr Ser Lys Ala Thr Lys Lys Asn Ala Ala Leu Val Arg
 130 135 140

<210>443

<211>467

<212>PRT

<213>Chlamydia pneumoniae

<400>443

Met Gly Trp Val Asp Cys Ile Trp Glu Ser Phe Ile Asn Lys Glu Ser
 1 5 10 15
 Gly Met Leu Thr Cys Asn Glu Cys Thr Thr Trp Glu Gln Phe Leu Asn
 20 25 30
 Tyr Val Lys Thr Arg Cys Ser Lys Thr Ala Phe Glu Asn Trp Ile Ser
 35 40 45
 Pro Ile Gln Val Leu Glu Glu Thr Gln Glu Lys Ile Arg Leu Glu Val
 50 55 60
 Pro Asn Ile Phe Val Gln Asn Tyr Leu Leu Asp Asn Tyr Lys Arg Asp
 65 70 75 80
 Leu Cys Ser Phe Val Pro Leu Asp Val His Gly Glu Pro Ala Leu Glu
 85 90 95
 Phe Val Val Ala Glu His Lys Lys Pro Ser Ala Pro Val Ala Ser Gln
 100 105 110
 Lys Glu Ser Asn Glu Gly Ile Ser Glu Val Phe Glu Glu Thr Lys Asp
 115 120 125
 Phe Glu Leu Lys Leu Asn Leu Ser Tyr Arg Phe Asp Asn Phe Ile Glu

130 135 140
 Gly Pro Ser Asn Gln Phe Val Lys Ser Ala Ala Val Gly Ile Ala Gly
 145 150 155 160
 Lys Pro Gly Arg Ser Tyr Asn Pro Leu Phe Ile His Gly Gly Val Gly
 165 170 175
 Leu Gly Lys Thr His Leu Leu His Ala Val Gly His Tyr Val Arg Glu
 180 185 190
 His His Lys Asn Leu Arg Ile His Cys Ile Thr Thr Glu Ala Phe Ile
 195 200 205
 Asn Asp Leu Val Tyr His Leu Lys Ser Lys Ser Val Asp Lys Met Lys
 210 215 220
 Asn Phe Tyr Arg Ser Leu Asp Leu Leu Leu Val Asp Asp Ile Cln Phe
 225 230 235 240
 Leu Gln Asn Arg Gln Asn Phe Glu Glu Glu Phe Cys Asn Thr Phe Glu
 245 250 255
 Thr Leu Ile Asn Leu Ser Lys Gln Ile Val Ile Thr Ser Asp Lys Pro
 260 265 270
 Pro Ser Gln Leu Lys Leu Ser Glu Arg Ile Ile Ala Arg Met Glu Trp
 275 280 285
 Gly Leu Val Ala His Val Gly Ile Pro Asp Leu Glu Thr Arg Val Ala
 290 295 300
 Ile Leu Gln His Lys Ala Glu Gln Lys Gly Leu Leu Ile Pro Asn Glu
 305 310 315 320
 Met Ala Phe Tyr Ile Ala Asp His Ile Tyr Gly Asn Val Arg Gln Leu
 325 330 335
 Glu Gly Ala Ile Asn Lys Leu Thr Ala Tyr Cys Arg Leu Phe Gly Lys
 340 345 350
 Ser Leu Thr Glu Thr Thr Val Arg Glu Thr Leu Lys Glu Leu Phe Arg
 355 360 365
 Ser Pro Thr Lys Gln Lys Ile Ser Val Glu Thr Ile Leu Lys Ser Val
 370 375 380
 Ala Thr Val Phe Gln Val Lys Leu Asn Asp Leu Lys Gly Asn Ser Arg
 385 390 395 400
 Ser Lys Asp Leu Val Leu Ala Arg Gln Ile Ala Met Tyr Leu Ala Lys
 405 410 415
 Thr Leu Ile Thr Asp Ser Leu Val Ala Ile Gly Ala Ala Phe Gly Lys
 420 425 430
 Thr His Ser Thr Val Leu Tyr Ala Cys Lys Thr Ile Glu His Lys Leu
 435 440 445
 Gln Asn Asp Glu Thr Leu Lys Arg Gln Val Asn Leu Cys Lys Asn His
 450 455 460
 Ile Val Gly
 465
 <210>444
 <211>195
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>444
 Met Phe Arg Arg Thr Gly Lys Gly Pro Phe Glu Asp Val Gln Thr Leu
 1 5 10 15
 Tyr Glu Glu Glu Thr Ser Ser Pro Ser Ser Tyr Ser Pro Tyr Ser Arg
 20 25 30
 Ser Glu Arg Pro Glu Thr Pro Pro Ser Leu Phe Asp Asn Pro Lys Ala
 35 40 45
 Ser Glu Ala Arg Pro Leu Asn His Asn Leu Thr Glu Glu Ser Ser Leu
 50 55 60
 Pro Gln Trp Ser Ser Thr Pro Arg Thr Glu Ser Leu Leu Pro Leu Glu
 65 70 75 80
 Glu Pro Glu Thr Thr Leu Gly Glu Gly Val Thr Phe Lys Gly Glu Leu
 85 90 95
 Ala Phe Glu Arg Leu Leu Arg Ile Asp Gly Thr Phe Glu Gly Ile Leu
 100 105 110
 Val Ser Lys Gly Lys Ile Ile Ile Gly Pro Lys Gly Val Val Lys Ala
 115 120 125

Asp Ile Gln Leu Gln Glu Ala Ile Ile Glu Gly Val Val Glu Gly Asn
 130 135 140
 Ile Thr Val Ser Gly Lys Val Glu Leu Arg Gly Gly Ala Ile Ile Lys
 145 150 155 160
 Gly Asp Ile Gln Ala Asn Thr Leu Cys Val Asp Glu Gly Val Arg Ile
 165 170 175
 Leu Gly Tyr Leu Ala Ile Ala Gly Ile Thr Asp His Ser Glu Arg Glu
 180 185 190
 Arg Asp Leu
 195

<210>445

<211>192

<212>PRT

<213>Chlamydia pneumoniae

<400>445

Met Val Leu Phe Ser Leu Leu Phe Pro Lys Leu Cys Tyr Gly Cys Gln
 1 5 10 15
 Ala Pro Gly Ala Tyr Phe Cys Ser Asn Cys Leu Glu Lys Leu Leu Val
 20 25 30
 Glu Asp Arg Glu Gly Arg Cys Leu His Cys Phe Arg Tyr Leu Gly Ser
 35 40 45
 Ser Glu Thr Arg Leu Cys Ser Gln Cys Ser Pro Ser Ser Gln Leu Gln
 50 55 60
 Ala Phe Ser Leu Tyr Leu Pro Ser Gln Thr Ala Leu Ser Val Tyr Ala
 65 70 75 80
 Arg Ala Cys Glu Gly Lys Arg Pro Ala Leu Glu Phe Phe Ser Lys Ser
 85 90 95
 Ile Ala Phe Glu Leu Ala Ser Leu Asp Glu Thr Pro Ser Cys Ile Ala
 100 105 110
 Tyr Ile Thr Ser Thr Ile Ser Arg Lys Ile Val Val Glu Val Ala Lys
 115 120 125
 Leu Glu Lys Leu Leu Arg Ile Pro Leu Trp Pro Trp Leu Pro Lys Lys
 130 135 140
 Arg Gln Ile Glu Lys Leu Pro Lys Gly Glu Gly Ile Cys Phe Leu Ser
 145 150 155 160
 Ala Tyr Pro Leu Ser Gln Lys Trp Met Gln Thr Ile Val Gly Gly Ser
 165 170 175
 Ala Ser Pro Leu Val Ser Ile Ser Leu Phe Leu Ser Gln Asn Asp Gln
 180 185 190

<210>446

<211>517

<212>PRT

<213>Chlamydia pneumoniae

<400>446

Val Phe Glu Arg Val Glu Ala Ser Thr Phe Leu Ser Ile Thr Met Leu
 1 5 10 15
 Lys Lys Phe Ile Asn Ser Leu Trp Lys Leu Cys Gln Gln Asp Lys Tyr
 20 25 30
 Gln Arg Phe Thr Pro Ile Val Asp Ala Ile Asp Thr Phe Cys Tyr Glu
 35 40 45
 Pro Ile Glu Thr Pro Ser Lys Pro Pro Phe Ile Arg Asp Ser Val Asp
 50 55 60
 Val Lys Arg Trp Met Met Leu Val Val Ile Ala Leu Phe Pro Ala Thr
 65 70 75 80
 Phe Val Ala Ile Trp Asn Ser Gly Leu Gln Ser Ile Val Tyr Ser Ser
 85 90 95
 Gly Asn Pro Val Leu Met Glu Gln Phe Leu His Ile Ser Gly Phe Gly
 100 105 110
 Ser Tyr Leu Ser Phe Val Tyr Lys Glu Ile His Ile Val Pro Ile Leu
 115 120 125
 Trp Glu Gly Leu Lys Ile Phe Ile Pro Leu Leu Thr Ile Ser Tyr Val
 130 135 140
 Val Gly Gly Thr Cys Glu Val Leu Phe Ala Val Val Arg Gly His Lys
 145 150 155 160

Ile Ala Glu Gly Leu Leu Val Thr Gly Ile Leu Tyr Pro Leu Thr Leu
 165 170 175
 Pro Pro Thr Ile Pro Tyr Trp Met Ala Ala Leu Gly Ile Ala Phe Gly
 180 185 190
 Ile Val Val Ser Lys Glu Leu Phe Gly Gly Thr Gly Met Asn Ile Leu
 195 200 205
 Asn Pro Ala Leu Ser Gly Arg Ala Phe Leu Phe Phe Thr Phe Pro Ala
 210 215 220
 Lys Met Ser Gly Asp Val Trp Val Gly Ser Asn Pro Gly Val Ile Lys
 225 230 235 240
 Asp Ser Leu Met Lys Met Asn Ser Ser Thr Gly Lys Val Leu Ile Asp
 245 250 255
 Gly Phe Ser Gln Ser Thr Cys Leu Gln Thr Leu Asn Ser Thr Pro Pro
 260 265 270
 Ser Val Lys Arg Leu His Val Asp Ala Ile Ala Ala Asn Met Leu His
 275 280 285
 Ile Pro His Val Pro Thr Gln Asp Val Ile His Ser Gln Phe Ser Leu
 290 295 300
 Trp Thr Gly Thr His Pro Gly Trp Val Leu Asp Asn Leu Thr Leu Thr
 305 310 315 320
 Gln Leu Gln Thr Phe Val Thr Ala Pro Val Ala Gln Gly Gly Leu Gly
 325 330 335
 Leu Leu Pro Thr Gln Phe Asp Ser Ala Tyr Ala Ile Thr Asp Val Ile
 340 345 350
 Tyr Gly Ile Gly Lys Phe Ser Ala Gly Asn Leu Phe Trp Gly Asn Ile
 355 360 365
 Ile Gly Ser Leu Gly Gln Thr Ser Thr Phe Ala Cys Leu Leu Gly Ala
 370 375 380
 Ile Phe Leu Ile Val Thr Gly Ile Ala Ser Trp Arg Thr Met Ala Ala
 385 390 395 400
 Phe Gly Ile Gly Ala Phe Leu Thr Gly Trp Leu Phe Lys Phe Ile Ser
 405 410 415
 Val Leu Ile Val Gly Gln Asn Gly Ala Trp Ala Pro Ala Arg Phe Phe
 420 425 430
 Ile Pro Ala Tyr Arg Gln Leu Phe Leu Gly Gly Leu Ala Phe Gly Leu
 435 440 445
 Val Phe Met Ala Thr Asp Pro Val Ser Ser Pro Thr Met Lys Leu Gly
 450 455 460
 Lys Trp Ile Tyr Gly Phe Phe Ile Gly Phe Met Thr Ile Val Ile Arg
 465 470 475 480
 Leu Ile Asn Pro Ala Tyr Pro Gln Gly Val Met Leu Ala Ile Leu Leu
 485 490 495
 Gly Asn Val Phe Ala Pro Leu Ile Asp Tyr Phe Ala Val Arg Lys Tyr
 500 505 510
 Arg Lys Arg Gly Val
 515

<210>447

<211>320

<212>PRT

<213>Chlamydia pneumoniae

<400>447

Met Ser Lys Gly Ser Ser Lys His Thr Val Arg Ile Asn Gln Thr Trp
 1 5 10 15
 Tyr Ile Val Ser Phe Ile Leu Gly Leu Ser Leu Phe Ala Gly Val Leu
 20 25 30
 Leu Ser Thr Ile Tyr Tyr Val Leu Ser Pro Ile Gln Glu Gln Ala Ala
 35 40 45
 Thr Phe Asp Arg Asn Lys Gln Met Leu Leu Ala Ala His Ile Leu Asp
 50 55 60
 Phe Lys Gly Arg Phe Gln Ile Gln Glu Lys Lys Glu Trp Val Pro Ala
 65 70 75 80
 Thr Phe Asp Lys Lys Thr Gln Leu Leu Glu Val Ala Thr Lys Lys Val
 85 90 95
 Ser Gln Val Ser Tyr Pro Gln Leu Gln Leu Tyr Ala Gln Arg Phe Val

100 105 110
 Arg Pro Leu Leu Thr Asp Ala Gln Gly Lys Val Phe Ser Phe Glu Glu
 115 120 125
 Lys Asn Leu Asn Pro Ile Glu Phe Phe Glu Lys Tyr Gln Glu Ser Pro
 130 135 140
 Pro Cys Gln Gln Ser Pro Leu Pro Phe Tyr Val Ile Leu Glu Asn Thr
 145 150 155 160
 Ser Arg Thr Glu Asn Met Ser Gly Ala Asp Val Ala Lys Asp Leu Ser
 165 170 175
 Thr Val Gln Ala Leu Ile Phe Pro Ile Ser Gly Phe Gly Leu Trp Gly
 180 185 190
 Pro Ile His Gly Tyr Leu Gly Val Lys Asn Asp Gly Asp Thr Val Leu
 195 200 205
 Gly Thr Ala Trp Tyr Gln Gln Gly Glu Thr Pro Gly Leu Gly Ala Asn
 210 215 220
 Ile Thr Asn Pro Glu Trp Gln Glu Gln Phe Tyr Gly Lys Lys Ile Phe
 225 230 235 240
 Leu Gln Asp Ser Ser Gly Thr Thr Asn Phe Ala Thr Thr Asp Leu Gly
 245 250 255
 Leu Glu Val Val Lys Gly Ser Val Arg Thr Thr Leu Gly Asp Ser Pro
 260 265 270
 Lys Ala Leu Ser Ala Ile Asp Gly Ile Ser Gly Ala Thr Leu Thr Cys
 275 280 285
 Asn Gly Val Thr Glu Ala Tyr Val Gln Ser Leu Ala Cys Tyr Arg Gln
 290 295 300
 Leu Leu Ile Asn Phe Ser Asn Leu Thr His Glu Lys Lys Thr Gly Glu
 305 310 315 320
 <210>448
 <211>223
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>448
 Met Thr Ser Lys Lys Ser Tyr Lys Ser Tyr Phe Phe Asp Pro Leu Trp
 1 5 10 15
 Ser Asn Asn Gln Ile Leu Ile Ala Ile Leu Gly Ile Cys Ser Ala Leu
 20 25 30
 Ala Val Thr Thr Val Gln Thr Ala Ile Thr Met Gly Ile Ala Val
 35 40 45
 Ser Ile Val Thr Gly Cys Ser Ser Phe Phe Val Ser Leu Leu Arg Lys
 50 55 60
 Phe Thr Pro Asp Ser Val Arg Met Ile Thr Gln Leu Ile Ile Ile Ser
 65 70 75 80
 Leu Phe Val Ile Val Ile Asp Gln Phe Leu Lys Ala Phe Phe Phe Asp
 85 90 95
 Ile Ser Lys Thr Leu Ser Val Phe Val Gly Leu Ile Ile Thr Asn Cys
 100 105 110
 Xaa Xaa Met Gly Arg Ser Glu Ser Leu Ala Arg His Val Thr Pro Ile
 115 120 125
 Pro Ala Phe Leu Asp Gly Phe Ala Ser Gly Leu Gly Tyr Gly Trp Val
 130 135 140
 Leu Leu Val Ile Gly Val Ile Arg Glu Leu Phe Gly Phe Gly Thr Pro
 145 150 155 160
 Tyr Gly Val Ser His His Pro Ser Ile Cys Tyr Ala Ser Glu Thr His
 165 170 175
 Pro Asp Gly Tyr Gln Asn Leu Ser Leu Met Val Leu Ala Pro Ser Ala
 180 185 190
 Phe Phe Leu Leu Gly Ile Met Ile Trp Leu Val Asn Ile Arg Asp Ser
 195 200 205
 Lys Glu Lys Xaa Val Val Tyr Val Val Arg Cys Val Tyr Leu Ala
 210 215 220
 <210>449
 <211>256
 <212>PRT
 <213>Chlamydia pneumoniae

<400>449

Met Trp Leu Gly Ala Tyr Thr Trp Leu Asn Val Phe Gly Ile Leu Leu
 1 5 10 15
 Gln Ala Ala Phe Ile Gln Asn Ile Leu Leu Ala Asn Phe Leu Gly Met
 20 25 30
 Cys Ser Tyr Leu Ala Cys Ser Thr Arg Val Ser Thr Ala Asn Gly Leu
 35 40 45
 Gly Met Ser Val Ala Leu Val Leu Thr Val Thr Gly Ser Ile Asn Trp
 50 55 60
 Phe Val His Ala Phe Ile Thr Gly Pro Lys Ala Leu Thr Trp Ile Ser
 65 70 75 80
 Pro Ser Leu Ala Ser Val Asn Leu Gly Phe Leu Glu Leu Ile Ile Phe
 85 90 95
 Ile Val Val Ile Ala Ala Phe Thr Gln Ile Leu Glu Leu Leu Leu Glu
 100 105 110
 Lys Val Ser Arg Asn Leu Tyr Leu Ser Leu Gly Ile Phe Leu Pro Leu
 115 120 125
 Ile Ala Val Asn Cys Ala Ile Leu Gly Gly Val Leu Phe Gly Ile Thr
 130 135 140
 Arg Ser Tyr Pro Phe Ile Pro Met Met Ile Phe Ser Leu Gly Ala Gly
 145 150 155 160
 Cys Gly Trp Trp Leu Ala Ile Val Ile Leu Ala Thr Ile Lys Glu Lys
 165 170 175
 Leu Ala Tyr Ser Asp Ile Pro Lys Asn Leu Gln Gly Met Gly Ile Ser
 180 185 190
 Phe Ile Thr Thr Gly Leu Ile Ala Met Ala Phe Met Ser Leu Thr Gly
 195 200 205
 Ile Asp Ile Ser Lys Pro Ser Ala Lys Ile Gln Arg Ala Pro Leu Glu
 210 215 220
 Thr Glu Val Val Glu Asn Thr Thr Asn Pro Leu Lys Glu Ser Ser Ser
 225 230 235 240
 Lys His Gln Pro Ser Ile Ser Lys Ala Arg Thr Gln Arg Arg Ser Leu
 245 250 255

<210>450

<211>113

<212>PRT

<213>Chlamydia pneumoniae

<400>450

Lys Ile Met Thr Thr Leu Pro Lys Tyr Val Pro Arg Ser Arg Gln Asn
 1 5 10 15
 Pro Asp Thr Leu Thr Phe Leu Lys Arg Tyr Ser Ser Val Leu Leu His
 20 25 30
 Ser Glu Asn Ser Ser Leu Ser Tyr Arg Ile Phe Ala Lys Val Leu Ala Ile
 35 40 45
 Leu Leu Thr Ser Leu Ala Val Ala Phe Ala Val Thr Leu Phe Ser Cys
 50 55 60
 Glu Gly Ser Gln Leu Arg Leu Cys Ala Leu Tyr Ile Gly Ile Ala Leu
 65 70 75 80
 Ala Ile Cys Val Leu Leu Thr Ile Val Val Tyr Cys Ile Ala Ser Lys
 85 90 95
 Ile Ala Thr Ala Cys Lys Lys Pro Pro Ser Ile Ser Arg Ile Glu Ile
 100 105 110
 Val

<210>451

<211>436

<212>PRT

<213>Chlamydia pneumoniae

<400>451

Gly Glu Xaa Ala Tyr Thr Lys Ile Ser Lys Asn Lys Glu Phe Ser Leu
 1 5 10 15
 Gly Phe Glu Glu Phe Val Asn Ser Tyr Phe Gln Phe Leu Glu Ile Ser
 20 25 30
 Glu Ser Glu Phe Phe Asn Met Tyr Arg Asp Ile Leu Leu Cys Lys Arg

35 40 45
 Ala Leu Leu Leu Leu Gln Gly Gly Val Ser Phe Asp Phe Gln Pro Leu
 50 55 60
 Thr Thr Phe Phe Val Gln Gly Lys Asp Ser Ile Gln Val Glu Phe Phe
 65 70 75 80
 Arg Leu Pro Lys Glu Tyr Ser Phe Lys Thr Lys Gln Glu Leu Lys Ala
 85 90 95
 Phe Glu Val Tyr Leu Lys Leu Val Ser Leu Pro Lys Ser Asp Ser Leu
 100 105 110
 Asp Val Pro Asn Glu Ile Leu Pro Ile Ala Thr Ile Lys Ala Lys Glu
 115 120 125
 Pro Arg Leu Val Gly Arg Arg Phe Ser Ile Asp Tyr Lys Arg Val Ala
 130 135 140
 Leu Gln Asp Leu Ala Ala Thr Val Pro Met Val Glu Val Leu His Trp
 145 150 155 160
 Gln Gln Asn Ser Glu His Phe Gln Glu Ile Leu Gln Gln Phe Pro Asp
 165 170 175
 Val Glu Thr Cys Gln Ser Tyr Lys Asp Phe Gln His Leu Lys Pro Ala
 180 185 190
 Leu Arg Asp Lys Ile Ser Leu Phe Thr Arg Lys Glu Ile Leu Arg Ala
 195 200 205
 Arg Pro Glu Arg Ile Leu Gln Ser Leu Gln Gln Val Pro Lys Gln Ser
 210 215 220
 Gln Glu Val Leu Leu Ser Ala Gly Lys Asn Ser Ala Leu Pro Gly Ile
 225 230 235 240
 Ser Asp Gly Gln Gln Leu Ala Lys Val Leu Leu Glu Asn Glu Val Leu
 245 250 255
 Asp Leu Tyr Ser Gln Asp Ala Glu Thr Tyr Tyr Thr Ile Ile Val Asn
 260 265 270
 Ser Ser Phe Glu Lys Glu Glu Val Leu Pro Tyr Arg Glu Val Leu Lys
 275 280 285
 Arg Asp Leu Ala Ser Gln Leu Thr Ser His Gly His Leu Val Asp
 290 295 300
 Met Glu Arg Leu Glu Ser Ala Leu Arg Thr Arg Tyr Pro Gly Glu Glu
 305 310 315 320
 Gly Ala Ser Leu Trp Gln Arg Arg Leu Trp Lys Val Val Glu Asn His
 325 330 335
 Arg Leu Gly Arg His Leu Glu Gly Ser Phe Ser Trp Ser Leu Asp Arg
 340 345 350
 Ser Leu Lys Thr Phe Ser Arg Gly Asp Lys Glu Leu Pro Gln Glu Phe
 355 360 365
 Asp Arg Ile Phe Ser Met Lys Val Gly Asp Tyr Ser Ser Val Phe Met
 370 375 380
 Ser Pro Asn Glu Gly Pro Cys Tyr Tyr Gln Cys Leu Ser His Leu Leu
 385 390 395 400
 Tyr Asp Arg Pro Ala Ser Val Asp Lys Leu Phe Leu Ala Lys Ser Gln
 405 410 415
 Leu Asp Glu Glu Leu Leu Gly Ser Tyr Met Glu Arg Phe Ile Glu Gln
 420 425 430
 Gly Val Val Arg
 435

<210>452

<211>84

<212>PRT

<213>Chlamydia pneumoniae

<400>452

Ser Gln Ala Leu Phe Arg Arg Glu Lys Val Pro Ser Leu Cys Ala Ser
 1 5 10 15
 Thr Asn Val Gly Val Pro Gln Gln Met Phe Ala Leu Pro Pro Asp Glu
 20 25 30
 Ala Leu Ser Arg Gly Lys Asp Leu Arg Leu Phe Gly Tyr Gln Thr Ile
 35 40 45
 Gln Asp Trp Phe Gly Asp Ala Tyr Leu Ser Ala Ala Val Glu Leu Leu
 50 55 60

Ile Arg Phe Ile Asp Glu Gln Lys Lys Val Leu Pro Arg Pro Ser Lys
 65 70 75 80
 Gln Glu Ser Ser

<210>453

<211>269

<212>PRT

<213>Chlamydia pneumoniae

<400>453

Arg Pro Trp Val Arg Ile Tyr Gln Gln Asp Leu Phe Cys Arg Leu Cys
 1 5 10 15
 Arg Asp Pro Ala Trp Phe Phe Ser Leu Leu Ser Phe Thr Leu Arg Phe
 20 25 30
 Tyr Cys Leu Gly Arg Gly Trp Thr Leu Leu Ser Phe Phe Tyr Lys His
 35 40 45
 Gln Lys Lys Phe Ile Gly Ile Val Ile Ala Val Val Cys Val Ser Gly
 50 55 60
 Ile Gly Val Gly Trp Gly Arg Phe Ser Arg Lys Gly Ser Ala Glu Ser
 65 70 75 80
 Thr Ser Arg Arg Thr Val Phe Thr Thr Ala Ser Gly Lys Arg Tyr Val
 85 90 95
 Glu Lys Asp Phe Met Ala Met Lys Lys Phe Phe Ala His Glu Ala Tyr
 100 105 110
 Pro Phe Thr Gly Asn Pro Arg Ala Trp Asn Phe Ile Asn Glu Gly Leu
 115 120 125
 Leu Thr Asp Tyr Phe Leu Thr Thr Arg Val Gly Glu Lys Leu Phe Leu
 130 135 140
 Lys Val Tyr His Pro Gly Glu Lys Ile Phe Ser Lys Glu Lys Ala Tyr
 145 150 155 160
 Gln Pro Tyr Arg Arg Phe Asp Ala Pro Phe Ile Ser Ser Glu Glu Val
 165 170 175
 Trp Lys Ser Ser Ala Pro Gln Leu Leu Glu Ile Leu Lys Val Phe Gln
 180 185 190
 Gln Ile Glu Asn Pro Ile Ser Lys Glu Gly Phe Leu Ala Arg Ala Lys
 195 200 205
 Leu Phe Leu Glu Glu Arg Arg Phe Pro His Tyr Val Leu Arg Gln Met
 210 215 220
 Leu Glu Tyr Arg Ser Lys Cys Leu Leu Phe Pro Gln Met Lys Pro Tyr
 225 230 235 240
 Leu Ala Gly Lys Thr Cys Gly Tyr Leu Ala Thr Arg Arg Phe Lys Thr
 245 250 255
 Gly Leu Gly Met Pro Thr Phe Leu Leu Leu Ser Ser
 260 265

<210>454

<211>196

<212>PRT

<213>Chlamydia pneumoniae

<400>454

Ala Thr Gln Ser Trp Thr Gln Glu Tyr Leu Lys Leu Ile Gln Gly Ala
 1 5 10 15
 Arg Ser Ser Val Lys Leu Ala His Met Tyr Phe Ile Pro Lys Asp Glu
 20 25 30
 Leu Leu Asn Ala Leu Val Asp Val Ser His Asn His Gly Val His Leu
 35 40 45
 Ser Leu Ile Thr Asn Gly Cys His Glu Leu Ser Pro Ala Ile Thr Gly
 50 55 60
 Pro Tyr Ala Trp Gly Asn Arg Ile Asn Tyr Phe Ala Leu Leu Tyr Gly
 65 70 75 80
 Lys Arg Tyr Pro Leu Trp Lys Lys Trp Phe Cys Glu Lys Leu Lys Pro
 85 90 95
 Tyr Glu Arg Val Ser Ile Tyr Glu Phe Ala Ile Trp Glu Thr Gln Leu
 100 105 110
 His Lys Lys Cys Met Ile Ile Asp Asp Glu Ile Phe Val Il Gly Ser
 115 120 125

Tyr Asn Phe Gly Lys Lys Ser Asp Ala Phe Asp Tyr Gln Ser Ile Val
 130 135 140
 Val Ile Glu Ser Pro Glu Val Ala Ala Lys Ala Asn Lys Val Phe Asn
 145 150 155 160
 Lys Asp Ile Gly Leu Ser Ile Pro Val Ser His Gly Asp Ile Phe Ser
 165 170 175
 Trp Tyr Phe His Ser Val His His Thr Leu Gly His Leu Gln Leu Thr
 180 185 190
 Tyr Met Pro Ala
 195

<210>455

<211>214

<212>PRT

<213>Chlamydia pneumoniae

<400>455

Arg Asp Gly Lys Ile Thr Ser Arg Leu Val Trp Ile Trp Phe Gln Ser
 1 5 10 15
 Ser Val Ala Asn Ile Ile Ile Gln Pro Thr Phe Thr Asp Ala Glu Asp
 20 25 30
 Gln Lys Leu Leu Lys Ala Leu Lys Glu Arg His Pro Asn Arg Phe Phe
 35 40 45
 Tyr Val Phe Thr Gly Cys Pro Pro Ser Thr Ser Ile Leu Ala Pro Asn
 50 55 60
 Val Ile Glu Met His Ile Lys Leu Ser Ile Ile Asp Gly Lys Tyr Cys
 65 70 75 80
 Ile Leu Gly Gly Thr Asn Phe Glu Glu Phe Met Cys Thr Pro Gly Asp
 85 90 95
 Glu Val Pro Glu Lys Val Asp Asn Pro Arg Leu Phe Val Ser Gly Val
 100 105 110
 Arg Arg Pro Leu Ala Phe Arg Asp Gln Asp Ile Met Leu Arg Ser Thr
 115 120 125
 Ala Phe Gly Leu Gln Leu Arg Glu Glu Tyr His Lys Gln Phe Ala Met
 130 135 140
 Trp Asp Tyr Tyr Ala His His Met Trp Phe Ile Asp Asn Pro Glu Gln
 145 150 155 160
 Phe Ala Gly Ala Cys Pro Pro Leu Thr Leu Glu Gln Ala Glu Glu Thr
 165 170 175
 Val Phe Pro Gly Phe Asp Lys His Glu Asp Leu Val Leu Val Asp Ser
 180 185 190
 Ser Lys Ile Arg Ile Val Leu Gly Gly Pro His Asp Lys Gln Pro Asn
 195 200 205
 Pro Gly Leu Lys Asn Ile
 210

<210>456

<211>95

<212>PRT

<213>Chlamydia pneumoniae

<400>456

Gly Val Met Met Ser Arg Leu Arg Phe Arg Leu Ala Ala Leu Gly Ile
 1 5 10 15
 Phe Phe Ile Leu Leu Val Pro Asn Ser Val Ser Ala Lys Thr Ile Val
 20 25 30
 Ala Ser Asp Lys Glu Lys Val Gly Val Leu Val Tyr Asp Asn Ser Val
 35 40 45
 Glu Ala Phe Gln Gln Ile Leu Asp Cys Ile Asp His Ala Asn Phe Tyr
 50 55 60
 Val Glu Leu Cys Pro Cys Met Thr Gly Gly Arg Thr Leu Lys Glu Met
 65 70 75 80
 Val Arg Ser Pro Arg Gly Ser Tyr Gly Ser Gly Ser Arg Ala Leu
 85 90 95

<210>457

<211>244

<212>PRT

<213>Chlamydia pneumoniae

<400>457

Phe Tyr Val Cys Tyr Met Lys Val Arg Ile Val Asp Ser Gly Lys Ser
 1 5 10 15
 Ser Ala Ala Ser His Met Ala Lys Asp Arg Asp Leu Leu Glu Ser Leu
 20 25 30
 Gln Asp Gly Glu Leu Ile Leu His Leu Tyr Glu Trp Glu Asn Pro Cys
 35 40 45
 Ser Leu Thr Tyr Gly His Phe Met Arg Pro Glu Lys Phe Leu Leu Ser
 50 55 60
 Asn Tyr Ala Asp Leu Gly Leu Asp Ala Ala Val Arg Pro Thr Gly Gly
 65 70 75 80
 Gly Phe Val Phe His Lys Gly Asp Tyr Ala Phe Ser Val Leu Met Ser
 85 90 95
 Ala Thr His Pro Ser Tyr Ser Ser Ser Val Leu Glu Asn Tyr His Thr
 100 105 110
 Val Asn Ser Phe Val Ala Lys Val Leu Glu Lys Val Phe Arg Ile Gln
 115 120 125
 Gly Met Leu Ala Pro Glu Asp Glu Asn Ser Ser Ser Arg Asp Ser Gly
 130 135 140
 Asn Phe Cys Met Ala Lys Thr Ser Lys Tyr Asp Val Leu Xaa Trp Gly
 145 150 155 160
 Gln Glu Asp Arg Gly Ala Ala Gln Arg Lys Val Gln Gln Gly Phe Leu
 165 170 175
 His Gln Gly Ser Leu Phe Leu Ser Gly Ser Ser Ser Glu Phe Tyr Gln
 180 185 190
 Arg Phe Leu Lys Pro Glu Val Leu Glu Glu Ile Ile Glu Gln Ile Gln
 195 200 205
 Ile His Ala Phe Phe Pro Leu Gly Leu Glu Ala Ala Asp Glu Val Leu
 210 215 220
 Gln Glu Ala Arg Gln Gln Val Lys Glu Ala Phe Ile Lys Leu Phe Cys
 225 230 235 240
 Gly Glu Gly Leu

<210>458

<211>845

<212>FRT

<213>Chlamydia pneumoniae

<400>458

Met Phe Glu Lys Phe Thr Asn Arg Ala Lys Gln Val Ile Lys Leu Ala
 1 5 10 15
 Lys Lys Glu Ala Gln Arg Leu Asn His Asn Tyr Leu Gly Thr Glu His
 20 25 30
 Ile Leu Leu Gly Leu Leu Lys Leu Gly Gln Gly Val Ala Val Asn Val
 35 40 45
 Leu Arg Asn Leu Gly Ile Asp Phe Asp Thr Ala Arg Gln Glu Val Glu
 50 55 60
 Arg Leu Ile Gly Tyr Gly Pro Glu Ile Gln Val Tyr Gly Asp Ala Ala
 65 70 75 80
 Leu Thr Gly Arg Val Lys Lys Ser Phe Glu Ser Ala Asn Glu Glu Ala
 85 90 95
 Ser Leu Leu Glu His Asn Tyr Val Gly Thr Glu His Leu Leu Leu Gly
 100 105 110
 Ile Leu His Gln Ser Asp Ser Val Ala Leu Gln Val Leu Glu Asn Leu
 115 120 125
 His Ile Asp Pro Arg Glu Val Arg Lys Glu Ile Leu Lys Glu Leu Glu
 130 135 140
 Thr Phe Asn Leu Gln Leu Pro Pro Ser Ser Ser Ser Ser Ser Ser
 145 150 155 160
 Ser Arg Ser Asn Pro Ser Ser Ser Lys Ser Pro Leu Gly Gln Ser Leu
 165 170 175
 Gly Ser Asp Lys Asn Glu Lys Leu Ser Ala Leu Lys Ala Tyr Gly Tyr
 180 185 190
 Asp Leu Thr Glu Met Val Arg Glu Ser Lys Leu Asp Pro Val Ile Gly
 195 200 205

Arg Ser Ser Glu Val Glu Arg Leu Ile Leu Ile Leu Cys Arg Arg Arg
 210 215 220
 Lys Asn Asn Pro Val Leu Ile Gly Glu Ala Gly Val Gly Lys Thr Ala
 225 230 235 240
 Ile Val Glu Gly Leu Ala Gln Lys Ile Ile Leu Asn Glu Val Pro Asp
 245 250 255
 Ala Leu Arg Lys Lys Arg Leu Ile Thr Leu Asp Leu Ala Leu Met Ile
 260 265 270
 Ala Gly Thr Lys Tyr Arg Gly Gln Phe Glu Glu Arg Ile Lys Ala Val
 275 280 285
 Met Asp Glu Val Arg Lys His Gly Asn Ile Leu Leu Phe Ile Asp Glu
 290 295 300
 Leu His Thr Ile Val Gly Ala Gly Ala Ala Glu Gly Ala Ile Asp Ala
 305 310 315 320
 Ser Asn Ile Leu Lys Pro Ala Leu Ala Arg Gly Glu Ile Gln Cys Ile
 325 330 335
 Gly Ala Thr Thr Ile Asp Glu Tyr Arg Lys His Ile Glu Lys Asp Ala
 340 345 350
 Ala Leu Glu Arg Arg Phe Gln Lys Ile Val Val His Pro Ser Val
 355 360 365
 Asp Glu Thr Ile Gln Ile Leu Arg Gly Leu Lys Lys Lys Tyr Glu Glu
 370 375 380
 His His Asn Val Phe Ile Thr Glu Glu Ala Leu Lys Ala Ala Thr
 385 390 395 400
 Leu Ser Asp Gln Tyr Val His Gly Arg Phe Leu Pro Asp Lys Ala Ile
 405 410 415
 Asp Leu Leu Asp Glu Ala Gly Ala Arg Val Arg Val Asn Thr Met Gly
 420 425 430
 Gln Pro Thr Asp Leu Met Lys Leu Glu Ala Glu Ile Glu Asn Thr Lys
 435 440 445
 Leu Ala Lys Glu Gln Ala Ile Gly Thr Gln Glu Tyr Glu Lys Ala Ala
 450 455 460
 Gly Leu Arg Asp Glu Glu Lys Lys Leu Arg Glu Arg Leu Gln Ser Met
 465 470 475 480
 Lys Gln Glu Trp Glu Asn His Lys Glu Glu His Gln Val Pro Val Asp
 485 490 495
 Glu Glu Ala Val Ala Gln Val Val Ser Leu Gln Thr Gly Ile Pro Ser
 500 505 510
 Ala Arg Leu Thr Glu Ala Glu Ser Glu Lys Leu Leu Lys Leu Glu Asp
 515 520 525
 Thr Leu Arg Arg Lys Val Ile Gly Gln Asn Asp Ala Val Thr Ser Ile
 530 535 540
 Cys Arg Ala Ile Arg Arg Ser Arg Thr Gly Ile Lys Asp Pro Asn Arg
 545 550 555 560
 Pro Thr Gly Ser Phe Leu Phe Leu Gly Pro Thr Gly Val Gly Lys Ser
 565 570 575
 Leu Leu Ala Gln Gln Ile Ala Ile Glu Met Phe Gly Gly Glu Asp Ala
 580 585 590
 Leu Ile Gln Val Asp Met Ser Glu Tyr Met Glu Lys Phe Ala Ala Thr
 595 600 605
 Lys Met Met Gly Ser Pro Pro Gly Tyr Val Gly His Glu Glu Gly Gly
 610 615 620
 His Leu Thr Glu Gln Val Arg Arg Arg Pro Tyr Cys Val Val Leu Phe
 625 630 635 640
 Asp Glu Ile Glu Lys Ala His Pro Asp Ile Met Asp Leu Met Leu Gln
 645 650 655
 Ile Leu Glu Gln Gly Arg Leu Thr Asp Ser Phe Gly Arg Lys Val Asp
 660 665 670
 Phe Arg His Ala Ile Ile Ile Met Thr Ser Asn Leu Gly Ala Asp Leu
 675 680 685
 Ile Arg Lys Ser Gly Glu Ile Gly Phe Gly Leu Lys Ser His Met Asp
 690 695 700
 Tyr Lys Val Ile Gln Glu Lys Ile Glu His Ala Met Lys Lys His Leu
 705 710 715 720

Lys Pro Glu Phe Ile Asn Arg Leu Asp Glu Ser Val Ile Phe Arg Pro
 725 730 735
 Leu Glu Lys Glu Ser Leu Ser Glu Ile Ile His Leu Glu Ile Asn Lys
 740 745 750
 Leu Asp Ser Arg Leu Lys Asn Tyr Glu Met Ala Leu Asn Ile Pro Asp
 755 760 765
 Ser Val Ile Ser Phe Leu Val Thr Lys Gly His Ser Pro Glu Met Gly
 770 775 780
 Ala Arg Pro Leu Arg Arg Val Ile Glu Gln Tyr Leu Glu Asp Pro Leu
 785 790 795 800
 Ala Glu Leu Leu Leu Lys Glu Ser Cys Arg Gln Glu Ala Arg Lys Leu
 805 810 815
 Arg Ala Thr Leu Val Glu Asn Arg Val Ala Phe Glu Arg Glu Glu
 820 825 830
 Glu Gln Glu Ala Ala Leu Pro Ser Pro His Leu Glu Ser
 835 840 845

<210>459

<211>374

<212>PRT

<213>Chlamydia pneumoniae

<400>459

Asn Leu Thr Leu Pro Met Arg Arg Gln Val Arg Glu Ile Met Gln Gln
 1 5 10 15
 Thr Val Ile Val Ala Met Ser Gly Gly Val Asp Ser Ser Val Val Ala
 20 25 30
 Tyr Leu Phe Lys Lys Phe Thr Asn Tyr Lys Val Ile Gly Leu Phe Met
 35 40 45
 Lys Asn Trp Glu Glu Asp Ser Glu Gly Gly Leu Cys Ser Ser Thr Lys
 50 55 60
 Asp Tyr Glu Asp Val Glu Arg Val Cys Leu Gln Leu Asp Ile Pro Tyr
 65 70 75 80
 Tyr Thr Val Ser Phe Ala Lys Glu Tyr Arg Glu Arg Val Phe Ala Arg
 85 90 95
 Phe Leu Lys Glu Tyr Ser Leu Gly Tyr Thr Pro Asn Pro Asp Ile Leu
 100 105 110
 Cys Asn Arg Glu Ile Lys Phe Asp Leu Leu Gln Lys Lys Val Gln Glu
 115 120 125
 Leu Gly Gly Asp Tyr Leu Ala Thr Gly His Tyr Cys Arg Leu Asn Thr
 130 135 140
 Glu Leu Gln Glu Thr Gln Leu Leu Arg Gly Cys Asp Pro Gln Lys Asp
 145 150 155 160
 Gln Ser Tyr Phe Leu Ser Gly Thr Pro Lys Ser Ala Leu His Asn Val
 165 170 175
 Leu Phe Pro Leu Gly Glu Met Asn Lys Thr Glu Val Arg Ala Ile Ala
 180 185 190
 Ala Glu Ala Ala Leu Pro Thr Ala Glu Lys Lys Asp Ser Thr Gly Ile
 195 200 205
 Cys Phe Ile Gly Lys Arg Pro Phe Lys Glu Phe Leu Glu Lys Phe Leu
 210 215 220
 Pro Asn Lys Thr Gly Asn Val Ile Asp Trp Asp Thr Lys Glu Ile Val
 225 230 235 240
 Gly Gln His Gln Gly Ser His Tyr Tyr Thr Ile Gly Gln Arg Arg Gly
 245 250 255
 Leu Asp Leu Gly Gly Ser Glu Lys Pro Xaa Tyr Val Val Gly Lys Asn
 260 265 270
 Ile Glu Glu Asn Ser Ile Tyr Ile Val Arg Gly Glu Asp His Pro Gln
 275 280 285
 Leu Tyr Leu Arg Glu Leu Thr Ala Arg Glu Leu Asn Trp Phe Thr Pro
 290 295 300
 Pro Lys Ser Gly Cys His Cys Ser Ala Lys Val Arg Tyr Arg Ser Pro
 305 310 315 320
 Asp Glu Ala Cys Thr Ile Asp Tyr Ser Ser Gly Asp Glu Val Lys Val
 325 330 335
 Arg Phe Ser Gln Pro Val Lys Ala Val Thr Pro Gly Gln Thr Ile Ala

340 345 350
 Phe Tyr Gln Gly Asp Thr Cys Leu Gly Ser Gly Val Ile Asp Val Pro
 355 360 365
 Met Ile Pro Ser Glu Gly
 370
 <210>460
 <211>185
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>460
 Ile Ile Ser Ser Asn Asn Arg Val Leu Phe Val Ser Ser Thr Leu Asn
 1 5 10 15
 Gly Val Phe Pro Ser Ser Leu Pro Glu Glu Ser Ala Asp Leu Phe Ile
 20 25 30
 Thr Asn Lys Glu Ile Val Ala Leu Gly Glu Lys Gly Asn Val Phe Leu
 35 40 45
 Thr His Ser Ile Pro Met His Ile Ala Ala Ile Thr Ile Leu Val Ile
 50 55 60
 Val Ala Leu Ala Gly Ile Ala Ile Ile Cys Leu Gly Cys Tyr Ser Gln
 65 70 75 80
 Ser Ile Leu Leu Ile Ala Val Gly Ile Val Leu Thr Ile Leu Thr Leu
 85 90 95
 Leu Cys Leu Gln Ala Leu Val Gly Phe Ile Lys Phe Ile Arg Gln Leu
 100 105 110
 Pro Gln Gln Leu His Thr Thr Val Gln Phe Ile Arg Glu Lys Ile Arg
 115 120 125
 Pro Glu Ser Ser Leu Gln Leu Val Thr Asn Ala Gln Arg Lys Thr Thr
 130 135 140
 Gln Asp Thr Leu Lys Leu Tyr Glu Glu Leu Cys Asp Leu Ser Gln Lys
 145 150 155 160
 Glu Phe Lys Leu Gln Ser Thr Leu Tyr Gln Lys Arg Phe Glu Leu Ser
 165 170 175
 His Lys Asn Glu Lys Thr Asn Gln Asn
 180 185

<210>461

<211>220

<212>PRT

<213>Chlamydia pneumoniae

<400>461

Leu Ala Thr Ile Arg Gly Asn Asn Met Ala Thr Ser Val Ala Pro Ser
 1 5 10 15
 Pro Val Pro Glu Ser Ser Pro Leu Ser His Ala Thr Glu Val Leu Asn
 20 25 30
 Leu Pro Asn Ala Tyr Ile Thr Gln Pro His Pro Ile Pro Ala Ala Pro
 35 40 45
 Trp Glu Thr Phe Arg Ser Lys Leu Ser Thr Lys His Thr Leu Cys Phe
 50 55 60
 Ala Leu Thr Leu Leu Leu Thr Leu Gly Gly Thr Ile Ser Ala Gly Tyr
 65 70 75 80
 Ala Gly Tyr Thr Gly Asn Trp Ile Ile Cys Gly Ile Gly Leu Gly Ile
 85 90 95
 Ile Val Leu Thr Leu Ile Leu Ala Leu Leu Leu Ala Ile Pro Leu Lys
 100 105 110
 Asn Lys Gln Thr Gly Thr Lys Leu Ile Asp Glu Ile Ser Gln Asp Ile
 115 120 125
 Ser Ser Ile Gly Ser Gly Phe Val Gln Arg Tyr Gly Leu Met Phe Ser
 130 135 140
 Thr Ile Lys Ser Val His Leu Pro Glu Leu Thr Thr Gln Asn Gln Glu
 145 150 155 160
 Lys Thr Arg Ile Leu Asn Glu Ile Glu Ala Lys Lys Glu Ser Ile Gln
 165 170 175
 Asn Leu Glu Leu Lys Ile Thr Glu Cys Gln Asn Lys Leu Ala Gln Lys
 180 185 190
 Gln Pro Lys Arg Lys Ser Ser Gln Lys Ser Phe Met Arg Ser Ile Lys

195 200 205
 His Leu Ser Lys Asn Pro Val Ile Leu Phe Asp Cys
 210 215 220
 <210>462
 <211>159
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>462
 Arg Trp Arg Ile Leu Gln Asn Met Phe Lys Leu Leu Phe His Ile Ala
 1 5 10 15
 Ala Phe Ala Gly His Val Leu Ser Thr Pro Ile Phe Ile Val Gln Asp
 20 25 30
 Ala Cys Gly Ile Asp Glu Glu Ala Cys Lys Asn Pro Pro Arg Pro
 35 40 45
 Phe Ser Ala Gln Val Gln Tyr Leu Lys Val Asn Asp Ala Lys Phe Lys
 50 55 60
 Lys Leu Pro His Gln Thr Ile Gly Tyr Arg Gln Tyr Asp Gly Thr Phe
 65 70 75 80
 Leu Cys Thr Leu Pro Ile Thr Glu His Ser Gly Leu Leu Phe Ser Thr
 85 90 95
 Gly Tyr Ile Gly Ala Asp Ile Gln Trp Lys Ser Ser Leu Pro Ile Ser
 100 105 110
 Glu Thr Asp Pro Asn Gly Leu Gly Trp Ala Thr Phe Gln Asp Thr Ser
 115 120 125
 Phe Tyr Asn Tyr Val Leu Leu Ser Leu Gly Ala Tyr Thr Leu Ser Xaa
 130 135 140
 Lys Lys Leu Ala Val Val Tyr His Ser Phe Trp Ala Cys Gly Ser
 145 150 155
 <210>463
 <211>186
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>463
 Glu Leu Ile His Ser Pro Leu Lys Asn Trp Gln Trp Ser Ile Ile Leu
 1 5 10 15
 Ser Gly Leu Val Asp Pro Lys Asn Ile Glu Met Gly Tyr Gly Leu Tyr
 20 25 30
 Gln Gly Val Leu Ser Gly Lys Tyr Gln Ala Thr Glu Lys Leu Ser Ala
 35 40 45
 Ile Phe Gly Val Ile Asn Glu Thr Gly Leu His Gln Glu Lys Ala Trp
 50 55 60
 Pro Leu Val Gly Val Ser Tyr Lys Ala Thr Asp Gln Leu Thr Leu Asn
 65 70 75 80
 Cys Ile Tyr Pro Val Asn Phe Ser Ile Asp Tyr Arg Ser Thr Ser Val
 85 90 95
 Cys Asn Leu Gly Leu Ala Tyr Arg Leu Thr Arg Phe Arg Lys Lys Leu
 100 105 110
 Tyr Lys Asn His Leu Ile Ser Ser Arg Gly Ile Phe Glu Tyr Gln Gly
 115 120 125
 Arg Glu Ile Glu Ala Asn Val Lys Leu Thr Pro Trp Pro Gly Ser Phe
 130 135 140
 Ile Lys Gly Phe Tyr Gly Trp Ser Ile Gly Asn Asp Ile Ser Ile Ala
 145 150 155 160
 Asp Asp His Asn Asn Asn Lys Thr Ser His Thr Phe Lys Thr Ser Ala
 165 170 175
 Phe Phe Gly Gly Ser Ala Val Met Asn Phe
 180 185
 <210>464
 <211>127
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>464
 Val Asp Ser Met Ser Gln Pro Pro Ile Asn Pro Leu Gly Gln Pro Gln
 1 5 10 15

Val Pro Ala Ala Ala Ser Pro Ser Gly Gln Pro Ser Val Val Lys Arg
 20 25 30
 Leu Lys Thr Ser Ser Thr Gly Leu Phe Lys Arg Phe Ile Thr Val Pro
 35 40 45
 Asp Lys Tyr Pro Lys Met Arg Tyr Val Tyr Asp Thr Gly Ile Ile Ala
 50 55 60
 Leu Ala Ala Ile Ala Ile Leu Ser Ile Leu Leu Thr Ala Ser Gly Asn
 65 70 75 80
 Ser Leu Met Leu Tyr Ala Leu Ala Pro Ala Leu Ala Leu Gly Ala Leu
 85 90 95
 Gly Val Thr Leu Leu Ile Ser Asp Ile Leu Asp Ser Pro Lys Pro Arg
 100 105 110
 Lys Ser Val Arg Gln Ser Leu Leu Ser Ser Phe Leu Ser Leu Tyr
 115 120 125

<210>465

<211>91

<212>PRT

<213>Chlamydia pneumoniae

<400>465

Tyr Ser Gly Gln Ser Glu Ala Lys Lys Ile Gly Glu Ala Ile Thr Ala
 1 5 10 15
 Ile Val Val Pro Ile Ile Val Leu Ala Ile Ala Ala Gly Leu Ile Ala
 20 25 30
 Gly Ala Phe Val Ala Ser Ser Gly Thr Met Leu Val Phe Ala Asn Pro
 35 40 45
 Met Phe Val Met Gly Leu Ile Thr Val Gly Leu Tyr Phe Met Ser Leu
 50 55 60
 Asn Lys Leu Thr Leu Asp Tyr Phe Arg Arg Glu His Leu Leu Arg Met
 65 70 75 80
 Glu Lys Lys Thr Gln Glu Thr Ala Asp Leu Phe
 85 90

<210>466

<211>1132

<212>PRT

<213>Chlamydia pneumoniae

<400>466

Met Lys Tyr Ser Leu Pro Trp Leu Leu Thr Ser Ser Ala Leu Val Phe
 1 5 10 15
 Ser Leu His Pro Leu Met Ala Ala Asn Thr Asp Leu Ser Ser Ser Asp
 20 25 30
 Asn Tyr Glu Asn Gly Ser Ser Gly Ser Ala Ala Phe Thr Ala Lys Glu
 35 40 45
 Thr Ser Asp Ala Ser Gly Thr Thr Tyr Thr Leu Thr Ser Asp Val Ser
 50 55 60
 Ile Thr Asn Val Ser Ala Ile Thr Pro Ala Asp Lys Ser Cys Phe Thr
 65 70 75 80
 Asn Thr Gly Gly Ala Leu Ser Phe Val Gly Ala Asp His Ser Leu Val
 85 90 95
 Leu Gln Thr Ile Ala Leu Thr His Asp Gly Ala Ala Ile Asn Asn Thr
 100 105 110
 Asn Thr Ala Leu Ser Phe Ser Gly Phe Ser Ser Leu Leu Ile Asp Ser
 115 120 125
 Ala Pro Ala Thr Gly Thr Ser Gly Gly Lys Gly Ala Ile Cys Val Thr
 130 135 140
 Asn Thr Glu Gly Gly Thr Ala Thr Phe Thr Asp Asn Ala Ser Val Thr
 145 150 155 160
 Leu Gln Lys Asn Thr Ser Glu Lys Asp Gly Ala Ala Val Ser Ala Tyr
 165 170 175
 Ser Ile Asp Leu Ala Lys Thr Thr Thr Ala Ala Leu Leu Asp Gln Asn
 180 185 190
 Thr Ser Thr Lys Asn Gly Gly Ala Leu Cys Ser Thr Ala Asn Thr Thr
 195 200 205
 Val Gln Gly Asn Ser Gly Thr Val Thr Phe Ser Ser Asn Thr Ala Thr
 210 215 220

Asp	Lys	Gly	Gly	Gly	Ile	Tyr	Ser	Lys	Glu	Lys	Asp	Ser	Ile	Leu	Asp	225	230	235	240
Ala	Asn	Thr	Gly	Val	Val	Thr	Phe	Lys	Ser	Asn	Thr	Ala	Lys	Thr	Gly	245	250	255	
Gly	Ala	Trp	Ser	Ser	Asp	Asp	Asn	Leu	Ala	Leu	Thr	Gly	Asn	Thr	Gln	260	265	270	
Val	Leu	Phe	Gln	Glu	Asn	Lys	Thr	Thr	Gly	Ser	Ala	Ala	Gln	Ala	Asn	275	280	285	
Asn	Pro	Glu	Gly	Cys	Gly	Gly	Ala	Ile	Cys	Cys	Tyr	Leu	Ala	Thr	Ala	290	295	300	
Thr	Asp	Lys	Thr	Gly	Leu	Ala	Ile	Ser	Gln	Asn	Gln	Glu	Met	Ser	Phe	305	310	315	320
Thr	Ser	Asn	Thr	Thr	Thr	Ala	Asn	Gly	Gly	Ala	Ile	Tyr	Ala	Thr	Lys	325	330	335	
Cys	Thr	Leu	Asp	Gly	Asn	Thr	Thr	Leu	Thr	Phe	Asp	Gln	Asn	Thr	Ala	340	345	350	
Thr	Ala	Gly	Cys	Gly	Gly	Ala	Ile	Tyr	Thr	Glu	Thr	Glu	Asp	Phe	Ser	355	360	365	
Leu	Lys	Gly	Ser	Thr	Gly	Thr	Val	Thr	Phe	Ser	Thr	Asn	Thr	Ala	Lys	370	375	380	
Thr	Gly	Gly	Ala	Leu	Tyr	Ser	Lys	Glu	Asn	Ser	Ser	Leu	Thr	Gly	Asn	385	390	395	400
Thr	Asn	Leu	Leu	Phe	Ser	Gly	Asn	Lys	Ala	Thr	Gly	Pro	Ser	Asn	Ser	405	410	415	
Ser	Ala	Asn	Gln	Glu	Gly	Cys	Gly	Gly	Ala	Ile	Leu	Ser	Phe	Leu	Glu	420	425	430	
Ser	Ala	Ser	Val	Ser	Thr	Lys	Lys	Gly	Leu	Trp	Ile	Glu	Asp	Asn	Glu	435	440	445	
Asn	Val	Ser	Leu	Ser	Gly	Asn	Thr	Ala	Thr	Val	Ser	Gly	Gly	Ala	Ile	450	455	460	
Tyr	Ala	Thr	Lys	Cys	Ala	Leu	His	Gly	Asn	Thr	Thr	Leu	Thr	Phe	Asp	465	470	475	480
Gly	Asn	Thr	Ala	Glu	Thr	Ala	Gly	Gly	Ala	Ile	Tyr	Thr	Glu	Thr	Glu	485	490	495	
Asp	Phe	Thr	Leu	Thr	Gly	Ser	Thr	Gly	Thr	Val	Thr	Phe	Ser	Thr	Asn	500	505	510	
Thr	Ala	Lys	Thr	Ala	Gly	Ala	Leu	His	Thr	Lys	Gly	Asn	Thr	Ser	Phe	515	520	525	
Thr	Lys	Asn	Lys	Ala	Leu	Val	Phe	Ser	Gly	Asn	Ser	Ala	Thr	Ala	Thr	530	535	540	
Ala	Thr	Thr	Thr	Thr	Asp	Gln	Glu	Gly	Cys	Gly	Gly	Ala	Ile	Leu	Cys	545	550	555	560
Asn	Ile	Ser	Glu	Ser	Asp	Ile	Ala	Thr	Lys	Ser	Leu	Thr	Leu	Thr	Glu	565	570	575	
Asn	Glu	Ser	Leu	Ser	Phe	Ile	Asn	Asn	Thr	Ala	Lys	Arg	Ser	Gly	Gly	580	585	590	
Gly	Ile	Tyr	Ala	Pro	Lys	Cys	Val	Ile	Ser	Gly	Ser	Glu	Ser	Ile	Asn	595	600	605	
Phe	Asp	Gly	Asn	Thr	Ala	Glu	Thr	Ser	Gly	Gly	Ala	Ile	Tyr	Ser	Lys	610	615	620	
Asn	Leu	Ser	Ile	Thr	Ala	Asn	Gly	Pro	Val	Ser	Phe	Thr	Asn	Asn	Ser	625	630	635	640
Gly	Gly	Lys	Gly	Gly	Ala	Ile	Tyr	Ile	Ala	Asp	Ser	Gly	Glu	Leu	Ser	645	650	655	
Leu	Glu	Ala	Ile	Asp	Gly	Asp	Ile	Thr	Phe	Ser	Gly	Asn	Arg	Ala	Thr	660	665	670	
Glu	Gly	Thr	Ser	Thr	Pro	Asn	Ser	Ile	His	Leu	Gly	Ala	Gly	Ala	Lys	675	680	685	
Ile	Thr	Lys	Leu	Ala	Ala	Ala	Pro	Gly	His	Thr	Ile	Tyr	Phe	Tyr	Asp	690	695	700	
Pro	Ile	Thr	Met	Glu	Ala	Pro	Ala	Ser	Gly	Gly	Thr	Ile	Glu	Glu	Leu	705	710	715	720
Val	Ile	Asn	Pro	Val	Val	Lys	Ala	Ile	Val	Pro	Pro	Pro	Gln	Pro	Lys	725	730	735	

Asn Gly Pro Ile Ala Ser Val Pro Val Val Pro Val Ala Pro Ala Asn
 740 745 750
 Pro Asn Thr Gly Thr Ile Val Phe Ser Ser Gly Lys Leu Pro Ser Gln
 755 760 765
 Asp Ala Ser Ile Pro Ala Asn Thr Thr Thr Ile Leu Asn Gln Lys Ile
 770 775 780
 Asn Leu Ala Gly Gly Asn Val Val Leu Lys Glu Gly Ala Thr Leu Gln
 785 790 795 800
 Val Tyr Ser Phe Thr Gln Gln Pro Asp Ser Thr Val Phe Met Asp Ala
 805 810 815
 Gly Thr Thr Leu Glu Thr Thr Thr Thr Asn Asn Thr Asp Gly Ser Ile
 820 825 830
 Asp Leu Lys Asn Leu Ser Val Asn Leu Asp Ala Leu Asp Gly Lys Arg
 835 840 845
 Met Ile Thr Ile Ala Val Asn Ser Thr Ser Gly Gly Leu Lys Ile Ser
 850 855 860
 Gly Asp Leu Lys Phe His Asn Asn Glu Gly Ser Phe Tyr Asp Asn Pro
 865 870 875 880
 Gly Leu Lys Ala Asn Leu Asn Leu Pro Phe Leu Asp Leu Ser Ser Thr
 885 890 895
 Ser Gly Thr Val Asn Leu Asp Asp Phe Asn Pro Ile Pro Ser Ser Met
 900 905 910
 Ala Ala Pro Asp Tyr Gly Tyr Gln Gly Ser Trp Thr Leu Val Pro Lys
 915 920 925
 Val Gly Ala Gly Gly Lys Val Thr Leu Val Ala Glu Trp Gln Ala Leu
 930 935 940
 Gly Tyr Thr Pro Lys Pro Glu Leu Arg Ala Thr Leu Val Pro Asn Ser
 945 950 955 960
 Leu Trp Asn Ala Tyr Val Asn Ile His Ser Ile Gln Gln Glu Ile Ala
 965 970 975
 Thr Ala Met Ser Asp Ala Pro Ser His Pro Gly Ile Trp Ile Gly Gly
 980 985 990
 Ile Gly Asn Ala Phe His Gln Asp Lys Gln Lys Glu Asn Ala Gly Phe
 995 1000 1005
 Arg Leu Ile Ser Arg Gly Tyr Ile Val Gly Gly Ser Met Thr Thr Pro
 1010 1015 1020
 Gln Glu Tyr Thr Phe Ala Val Ala Phe Ser Gln Leu Phe Gly Lys Ser
 1025 1030 1035 1040
 Lys Asp Tyr Val Val Ser Asp Ile Lys Ser Gln Val Tyr Ala Gly Ser
 1045 1050 1055
 Leu Cys Ala Gln Ser Ser Tyr Val Ile Pro Leu His Ser Ser Leu Arg
 1060 1065 1070
 Arg His Val Leu Ser Lys Val Leu Pro Glu Leu Pro Gly Glu Thr Pro
 1075 1080 1085
 Leu Val Leu His Gly Gln Val Ser Tyr Gly Arg Asn His His Asn Met
 1090 1095 1100
 Thr Thr Lys Leu Ala Asn Asn Thr Gln Gly Lys Ser Asp Trp Asp Ser
 1105 1110 1115 1120
 His Ser Ser Leu Leu Lys Ser Val Val Leu Phe Leu
 1125 1130

<210>467

<211>154

<212>PRT

<213>Chlamydia pneumoniae

<400>467

Phe Ala Val Glu Val Gly Gly Ser Leu Pro Val Asp Leu Asn Tyr Arg
 1 5 10 15
 Tyr Leu Thr Ser Tyr Ser Pro Tyr Val Lys Leu Gln Val Val Ser Val
 20 25 30
 Asn Gln Lys Gly Phe Gln Glu Val Ala Ala Asp Pro Arg Ile Phe Asp
 35 40 45
 Ala Ser His Leu Val Asn Val Ser Ile Pro Met Gly Leu Thr Phe Lys
 50 55 60
 His Glu Ser Ala Lys Pro Pro Ser Ala Leu Leu Leu Thr Leu Gly Tyr

65 70 75 80
 Ala Val Asp Ala Tyr Arg Asp His Pro His Cys Leu Thr Ser Leu Thr
 85 90 95
 Asn Gly Thr Ser Trp Ser Thr Phe Ala Thr Asn Leu Ser Arg Gln Ala
 100 105 110
 Phe Phe Ala Gln Ala Ser Gly His Leu Lys Leu Leu His Gly Leu Asp
 115 120 125
 Cys Phe Ala Ser Gly Ser Cys Glu Leu Arg Ser Ser Ser Arg Ser Tyr
 130 135 140
 Asn Ala Asn Cys Gly Thr Arg Tyr Ser Phe
 145 150
 <210>468
 <211>671
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>468
 Met Lys Ser Ser Val Ser Trp Leu Phe Phe Ser Ser Ile Pro Leu Phe
 1 5 10 15
 Ser Ser Leu Ser Ile Val Ala Ala Glu Val Thr Leu Asp Ser Ser Asn
 20 25 30
 Asn Ser Tyr Asp Gly Ser Asn Gly Thr Thr Phe Thr Val Phe Ser Thr
 35 40 45
 Thr Asp Ala Ala Ala Gly Thr Thr Tyr Ser Leu Leu Ser Asp Val Ser
 50 55 60
 Phe Gln Asn Ala Gly Ala Leu Gly Ile Pro Leu Ala Ser Gly Cys Phe
 65 70 75 80
 Leu Glu Ala Gly Gly Asp Leu Thr Phe Gln Gly Asn Gln His Ala Leu
 85 90 95
 Lys Phe Ala Phe Ile Asn Ala Gly Ser Ser Ala Gly Thr Val Ala Ser
 100 105 110
 Thr Ser Ala Ala Asp Lys Asn Leu Leu Phe Asn Asp Phe Ser Arg Leu
 115 120 125
 Ser Ile Ile Ser Cys Pro Ser Leu Leu Leu Ser Pro Thr Gly Gln Cys
 130 135 140
 Ala Leu Lys Ser Val Gly Asn Leu Ser Leu Thr Gly Asn Ser Gln Ile
 145 150 155 160
 Ile Phe Thr Gln Asn Phe Ser Ser Asp Asn Gly Gly Val Ile Asn Thr
 165 170 175
 Lys Asn Phe Leu Leu Ser Gly Thr Ser Gln Phe Ala Ser Phe Ser Arg
 180 185 190
 Asn Gln Ala Phe Thr Gly Lys Gln Gly Gly Val Val Tyr Ala Thr Gly
 195 200 205
 Thr Ile Thr Ile Glu Asn Ser Pro Gly Ile Val Ser Phe Ser Gln Asn
 210 215 220
 Leu Ala Lys Gly Ser Gly Gly Ala Leu Tyr Ser Thr Asp Asn Cys Ser
 225 230 235 240
 Ile Thr Asp Asn Phe Gln Val Ile Phe Asp Gly Asn Ser Ala Trp Glu
 245 250 255
 Ala Ala Gln Ala Gln Gly Gly Ala Ile Cys Cys Thr Thr Thr Asp Lys
 260 265 270
 Thr Val Thr Leu Thr Gly Asn Lys Asn Leu Ser Phe Thr Asn Asn Thr
 275 280 285
 Ala Leu Thr Tyr Gly Gly Ala Ile Ser Gly Leu Lys Val Ser Ile Ser
 290 295 300
 Ala Gly Gly Pro Thr Leu Phe Gln Ser Asn Ile Ser Gly Ser Ser Ala
 305 310 315 320
 Gly Gln Gly Gly Gly Gly Ala Ile Asn Ile Ala Ser Ala Gly Glu Leu
 325 330 335
 Ala Leu Ser Ala Thr Ser Gly Asp Il Thr Phe Asn Asn Asn Gln Val
 340 345 350
 Thr Asn Gly Ser Thr Ser Thr Arg Asn Ala Ile Asn Ile Ile Asp Thr
 355 360 365
 Ala Lys Val Thr Ser Ile Arg Ala Ala Thr Gly Gln Ser Ile Tyr Phe
 370 375 380

Tyr Asp Pro Ile Thr Asn Pro Gly Thr Ala Ala Ser Thr Asp Thr Leu
 385 390 395 400
 Asn Leu Asn Leu Ala Asp Ala Asn Ser Glu Ile Glu Tyr Gly Gly Ala
 405 410 415
 Ile Val Phe Ser Gly Glu Lys Leu Ser Pro Thr Glu Lys Ala Ile Ala
 420 425 430
 Ala Asn Val Thr Ser Thr Ile Arg Gln Pro Ala Val Leu Ala Arg Gly
 435 440 445
 Asp Leu Val Leu Arg Asp Gly Val Thr Val Thr Phe Lys Asp Leu Thr
 450 455 460
 Gln Ser Pro Gly Ser Arg Ile Leu Met Asp Gly Gly Thr Thr Leu Ser
 465 470 475 480
 Ala Lys Glu Ala Asn Leu Ser Leu Asn Gly Leu Ala Val Asn Leu Ser
 485 490 495
 Ser Leu Asp Gly Thr Asn Lys Ala Ala Leu Lys Thr Glu Ala Ala Asp
 500 505 510
 Lys Asn Ile Ser Leu Ser Gly Thr Ile Ala Leu Ile Asp Thr Glu Gly
 515 520 525
 Ser Phe Tyr Glu Asn His Asn Leu Lys Ser Ala Ser Thr Tyr Pro Leu
 530 535 540
 Leu Glu Leu Thr Thr Ala Gly Ala Asn Gly Thr Ile Thr Leu Gly Ala
 545 550 555 560
 Leu Ser Thr Leu Thr Leu Gln Glu Pro Glu Thr His Tyr Gly Tyr His
 565 570 575
 Gly Asn Trp Gln Leu Ser Trp Ala Asn Ala Thr Ser Ser Lys Ile Gly
 580 585 590
 Ser Ile Asn Trp Thr Arg Thr Gly Tyr Ile Pro Ser Pro Glu Arg Lys
 595 600 605
 Ser Asn Leu Pro Leu Asn Ser Leu Trp Gly Asn Phe Ile Asp Ile Arg
 610 615 620
 Ser Ile Asn Gln Leu Ile Glu Thr Lys Ser Ser Gly Gln Pro Phe Glu
 625 630 635 640
 Arg Glu Tyr Gly Phe Gln Glu Leu Arg Ile Ser Ser Ile Glu Ile Leu
 645 650 655
 Cys Pro Pro Ala Met Val Ser Ala Ile Ser Ala Gly Val Met His
 660 665 670

<210>463

<211>294

<212>PRT

<213>Chlamydia pneumoniae

<400>469

Val Trp Leu Ser Gly Ile Ala Asn Phe Phe Tyr Arg Asp Ser Met Pro
 1 5 10 15
 Thr Arg His Gly Phe Arg His Ile Ser Gly Gly Tyr Ala Leu Gly Ile
 20 25 30
 Thr Ala Thr Thr Pro Ala Glu Asp Gln Leu Thr Phe Ala Phe Cys Gln
 35 40 45
 Leu Phe Ala Arg Asp Arg Asn His Ile Thr Gly Lys Asn His Gly Asp
 50 55 60
 Thr Tyr Gly Ala Ser Leu Tyr Phe His His Thr Glu Gly Leu Phe Asp
 65 70 75 80
 Ile Ala Asn Phe Leu Trp Gly Lys Ala Thr Arg Ala Pro Trp Val Leu
 85 90 95
 Ser Glu Ile Ser Gln Ile Ile Pro Leu Ser Phe Asp Ala Lys Phe Ser
 100 105 110
 Tyr Leu His Thr Asp Asn His Met Lys Thr Tyr Tyr Thr Asp Asn Ser
 115 120 125
 Ile Ile Lys Gly Ser Trp Arg Asn Asp Ala Phe Cys Ala Asp Leu Gly
 130 135 140
 Ala Ser Leu Pro Phe Val Ile Ser Val Pro Tyr Leu Leu Lys Glu Val
 145 150 155 160
 Glu Pro Phe Val Lys Val Gln Tyr Ile Tyr Ala His Gln Gln Asp Phe
 165 170 175
 Tyr Glu Arg Tyr Ala Glu Gly Arg Ala Phe Asn Lys Ser Glu Leu Ile

180 185 190
 Asn Val Glu Ile Pro Ile Gly Val Thr Phe Glu Arg Asp Ser Lys Ser
 195 200 205
 Glu Lys Gly Thr Tyr Asp Leu Thr Leu Met Tyr Ile Leu Asp Ala Tyr
 210 215 220
 Arg Arg Asn Pro Lys Cys Gln Thr Ser Leu Ile Ala Ser Asp Ala Asn
 225 230 235 240
 Trp Met Ala Tyr Gly Thr Asn Leu Ala Arg Gln Gly Phe Ser Val Arg
 245 250 255
 Ala Ala Asn His Phe Gln Val Asn Pro His Met Glu Ile Phe Gly Gln
 260 265 270
 Phe Ala Phe Glu Val Arg Ser Ser Ser Arg Asn Tyr Asn Thr Asn Leu
 275 280 285
 Gly Ser Lys Phe Cys Phe
 290
 <310>470
 <211>930
 <212>PRT
 <219>Chlamydia pneumoniae
 <400>470
 Met Lys Ile Pro Leu His Lys Leu Leu Ile Ser Ser Thr Leu Val Thr
 1 5 10 15
 Pro Ile Leu Leu Ser Ile Ala Thr Tyr Gly Ala Asp Ala Ser Leu Ser
 20 25 30
 Pro Thr Asp Ser Phe Asp Gly Ala Gly Gly Ser Thr Phe Thr Pro Lys
 35 40 45
 Ser Thr Ala Asp Ala Asn Gly Thr Asn Tyr Val Leu Ser Gly Asn Val
 50 55 60
 Tyr Ile Asn Asp Ala Gly Lys Gly Thr Ala Leu Thr Gly Cys Cys Phe
 65 70 75 80
 Thr Glu Thr Thr Gly Asp Leu Thr Phe Thr Gly Lys Gly Tyr Ser Phe
 85 90 95
 Ser Phe Asn Thr Val Asp Ala Gly Ser Asn Ala Gly Ala Ala Ala Ser
 100 105 110
 Thr Thr Ala Asp Lys Ala Leu Thr Phe Thr Gly Phe Ser Asn Leu Ser
 115 120 125
 Phe Ile Ala Ala Pro Gly Thr Thr Val Ala Ser Gly Lys Ser Thr Leu
 130 135 140
 Ser Ser Ala Gly Ala Leu Asn Leu Thr Asp Asn Gly Thr Ile Leu Phe
 145 150 155 160
 Ser Gln Asn Val Ser Asn Glu Ala Asn Asn Asn Gly Gly Ala Ile Thr
 165 170 175
 Ala Lys Thr Leu Ser Ile Ser Gly Asn Thr Ser Ser Ile Thr Phe Thr
 180 185 190
 Ser Asn Ser Ala Lys Lys Leu Gly Gly Ala Ile Tyr Ser Ser Ala Ala
 195 200 205
 Ala Ser Ile Ser Gly Asn Thr Gly Gln Leu Val Phe Met Asn Asn Lys
 210 215 220
 Gly Glu Thr Gly Gly Gly Ala Leu Gly Phe Glu Ala Ser Ser Ser Ile
 225 230 235 240
 Thr Gln Asn Ser Ser Leu Phe Phe Ser Gly Asn Thr Ala Thr Asp Ala
 245 250 255
 Ala Gly Lys Gly Gly Ala Ile Tyr Cys Glu Lys Thr Gly Glu Thr Pro
 260 265 270
 Thr Leu Thr Ile Ser Gly Asn Lys Ser Leu Thr Phe Ala Glu Asn Ser
 275 280 285
 Ser Val Thr Gln Gly Gly Ala Ile Cys Ala His Gly Leu Asp Leu Ser
 290 295 300
 Ala Ala Gly Pro Thr Leu Phe Ser Asn Asn Arg Cys Gly Asn Thr Ala
 305 310 315 320
 Ala Gly Lys Gly Gly Ala Ile Ala Ile Ala Asp Ser Gly Ser Leu Ser
 325 330 335
 Leu Ser Ala Asn Gln Gly Asp Ile Thr Phe Leu Gly Asn Thr Leu Thr
 340 345 350

Ser Thr Ser Ala Pro Thr Ser Thr Arg Asn Ala Ile Tyr Leu Gly Ser
355 360 365
Ser Ala Lys Ile Thr Asn Leu Arg Ala Ala Gln Gly Gln Ser Ile Tyr
370 375 380
Phe Tyr Asp Pro Ile Ala Ser Asn Thr Thr Gly Ala Ser Asp Val Leu
385 390 395 400
Thr Ile Asn Gln Pro Asp Ser Asn Ser Pro Leu Asp Tyr Ser Gly Thr
405 410 415
Ile Val Phe Ser Gly Glu Lys Leu Ser Ala Asp Glu Ala Lys Ala Ala
420 425 430
Asp Asn Phe Thr Ser Ile Leu Lys Gln Pro Leu Ala Leu Ala Ser Gly
435 440 445
Thr Leu Ala Leu Lys Gly Asn Val Glu Leu Asp Val Asn Gly Phe Thr
450 455 460
Gln Thr Glu Gly Ser Thr Leu Leu Met Gln Pro Gly Thr Lys Leu Lys
465 470 475 480
Ala Asp Thr Glu Ala Ile Ser Leu Thr Lys Leu Val Val Asp Leu Ser
485 490 495
Ala Leu Glu Gly Asn Lys Ser Val Ser Ile Glu Thr Ala Gly Ala Asn
500 505 510
Lys Thr Ile Thr Leu Thr Ser Pro Leu Val Phe Gln Asp Ser Ser Gly
515 520 525
Asn Phe Tyr Glu Ser His Thr Ile Asn Gln Ala Phe Thr Gln Pro Leu
530 535 540
Val Val Phe Thr Ala Ala Thr Ala Ala Ser Asp Ile Tyr Ile Asp Ala
545 550 555 560
Leu Leu Thr Ser Pro Val Gln Thr Pro Glu Pro His Tyr Gly Tyr Gln
565 570 575
Gly His Tyr Glu Ala Thr Trp Ala Asp Thr Ser Thr Ala Lys Ser Gly
580 585 590
Thr Met Thr Trp Val Thr Thr Gly Tyr Asn Pro Asn Pro Glu Arg Arg
595 600 605
Ala Ser Val Val Pro Asp Ser Leu Trp Ala Ser Phe Thr Asp Ile Arg
610 615 620
Thr Leu Gln Gln Ile Met Thr Ser Gln Ala Asn Ser Ile Tyr Gln Gln
625 630 635 640
Arg Gly Leu Trp Ala Ser Gly Thr Ala Asn Phe Phe His Lys Asp Lys
645 650 655
Ser Gly Thr Asn Gln Ala Phe Arg His Lys Ser Tyr Gly Tyr Ile Val
660 665 670
Gly Gly Ser Ala Glu Asp Phe Ser Glu Asn Ile Phe Ser Val Ala Phe
675 680 685
Cys Gln Leu Phe Gly Lys Asp Lys Asp Leu Phe Ile Val Glu Asn Thr
690 695 700
Ser His Asn Tyr Leu Ala Ser Leu Tyr Leu Gln His Arg Ala Phe Leu
705 710 715 720
Gly Gly Leu Pro Met Pro Ser Phe Gly Ser Ile Thr Asp Met Leu Lys
725 730 735
Asp Ile Pro Leu Ile Leu Asn Ala Gln Leu Ser Tyr Ser Tyr Thr Lys
740 745 750
Asn Asp Met Asp Thr Arg Tyr Thr Ser Tyr Pro Glu Ala Gln Gly Ser
755 760 765
Trp Thr Asn Asn Ser Gly Ala Leu Glu Leu Gly Gly Ser Leu Ala Leu
770 775 780
Tyr Leu Pro Lys Glu Ala Pro Phe Phe Gln Gly Tyr Phe Pro Phe Leu
785 790 795 800
Lys Phe Gln Ala Val Tyr Ser Arg Gln Gln Asn Phe Lys Glu Ser Gly
805 810 815
Ala Glu Ala Arg Ala Phe Asp Asp Gly Asp Leu Val Asn Cys Ser Ile
820 825 830
Pro Val Gly Ile Arg Leu Glu Lys Ile Ser Glu Asp Glu Lys Asn Asn
835 840 845
Phe Glu Ile Ser Leu Ala Tyr Ile Gly Asp Val Tyr Arg Lys Asn Pro
850 855 860

Arg Ser Arg Thr Ser Leu Met Val Ser Gly Ala Ser Trp Thr Ser Leu
 865 870 875 880
 Cys Lys Asn Leu Ala Arg Gln Ala Phe Leu Ala Ser Ala Gly Ser His
 885 890 895
 Leu Thr Leu Ser Pro His Val Glu Leu Ser Gly Glu Ala Ala Tyr Glu
 900 905 910
 Leu Arg Gly Ser Ala His Ile Tyr Asn Val Asp Cys Gly Leu Arg Tyr
 915 920 925
 Ser Phe
 930

<210>471

<211>138

<212>PRT

<213>Chlamydia pneumoniae

<400>471

Ile Ala Pro Pro Asn Phe Phe Ala Leu Leu Leu Val Lys Val Ile Glu
 1 5 10 15
 Glu Val Phe Pro Glu Ile Glu Arg Val Phe Ala Val Ile Ala Pro Pro
 20 25 30
 Leu Leu Leu Ala Ser Leu Glu Thr Phe Trp Leu Lys Arg Ile Val Pro
 35 40 45
 Leu Ser Val Arg Phe Lys Ala Pro Ala Glu Leu Lys Val Leu Phe Pro
 50 55 60
 Glu Ala Thr Val Val Pro Gly Ala Ala Met Lys Glu Arg Leu Glu Asn
 65 70 75 80
 Pro Val Asn Val Arg Ala Leu Ser Ala Val Val Leu Ala Ala Ala Pro
 85 90 95
 Ala Phe Glu Pro Ala Ser Thr Val Leu Asn Glu Asn Glu Tyr Pro Phe
 100 105 110
 Pro Val Asn Val Arg Ser Pro Val Val Ser Val Lys Gln Gln Pro Val
 115 120 125
 Asn Ala Val Pro Phe Pro Ala Ser Phe Ile
 130 135

<210>472

<211>927

<212>PRT

<213>Chlamydia pneumoniae

<400>472

Met Lys Ser Ser Leu His Trp Phe Leu Ile Ser Ser Ser Leu Ala Leu
 1 5 10 15
 Pro Leu Ser Leu Asn Phe Ser Ala Phe Ala Ala Val Val Glu Ile Asn
 20 25 30
 Leu Gly Pro Thr Asn Ser Phe Ser Gly Pro Gly Thr Tyr Thr Pro Pro
 35 40 45
 Ala Gln Thr Thr Asn Ala Asp Gly Thr Ile Tyr Asn Leu Thr Gly Asp
 50 55 60
 Val Ser Ile Thr Asn Ala Gly Ser Pro Thr Ala Leu Thr Ala Ser Cys
 65 70 75 80
 Phe Lys Glu Thr Thr Gly Asn Leu Ser Phe Gln Gly His Gly Tyr Gln
 85 90 95
 Phe Leu Leu Gln Asn Ile Asp Ala Gly Ala Asn Cys Thr Phe Thr Asn
 100 105 110
 Thr Ala Ala Asn Lys Leu Leu Ser Phe Ser Gly Phe Ser Tyr Leu Ser
 115 120 125
 Leu Ile Gln Thr Thr Asn Ala Thr Thr Gly Thr Gly Ala Ile Lys Ser
 130 135 140
 Thr Gly Ala Cys Ser Ile Gln Ser Asn Tyr Ser Cys Tyr Phe Gly Gln
 145 150 155 160
 Asn Phe Ser Asn Asp Asn Gly Gly Ala Leu Gln Gly Ser Ser Ile Ser
 165 170 175
 Leu Ser Leu Asn Pro Asn Leu Thr Phe Ala Lys Asn Lys Ala Thr Gln
 180 185 190
 Lys Gly Gly Ala Leu Tyr Ser Thr Gly Gly Ile Thr Ile Asn Asn Thr
 195 200 205

Leu Asn Ser Ala Ser Phe Ser Glu Asn Thr Ala Ala Asn Asn Gly Gly
 210 215 220
 Ala Ile Tyr Thr Glu Ala Ser Ser Phe Ile Ser Ser Asn Lys Ala Ile
 225 230 235 240
 Ser Phe Ile Asn Asn Ser Val Thr Ala Thr Ser Ala Thr Gly Gly Ala
 245 250 255
 Ile Tyr Cys Ser Ser Thr Ser Ala Pro Lys Pro Val Leu Thr Leu Ser
 260 265 270
 Asp Asn Gly Glu Leu Asn Phe Ile Gly Asn Thr Ala Ile Thr Ser Gly
 275 280 285
 Gly Ala Ile Tyr Thr Asp Asn Leu Val Leu Ser Ser Gly Gly Pro Thr
 290 295 300
 Leu Phe Lys Asn Asn Ser Ala Ile Asp Thr Ala Ala Pro Leu Gly Gly
 305 310 315 320
 Ala Ile Ala Ile Ala Asp Ser Gly Ser Leu Ser Leu Ser Ala Leu Gly
 325 330 335
 Gly Asp Ile Thr Phe Glu Gly Asn Thr Val Val Lys Gly Ala Ser Ser
 340 345 350
 Ser Gln Thr Thr Thr Arg Asn Ser Ile Asn Ile Gly Asn Thr Asn Ala
 355 360 365
 Lys Ile Val Gln Leu Arg Ala Ser Gln Gly Asn Thr Ile Tyr Phe Tyr
 370 375 380
 Asp Pro Ile Thr Thr Ser Ile Thr Ala Ala Leu Ser Asp Ala Leu Asn
 385 390 395 400
 Leu Asn Gly Pro Asp Leu Ala Gly Asn Pro Ala Tyr Gln Gly Thr Ile
 405 410 415
 Val Phe Ser Gly Glu Lys Leu Ser Glu Ala Glu Ala Ala Glu Ala Asp
 420 425 430
 Asn Leu Lys Ser Thr Ile Gln Gln Pro Leu Thr Leu Ala Gly Gly Gln
 435 440 445
 Leu Ser Leu Lys Ser Gly Val Thr Leu Val Ala Lys Ser Phe Ser Gln
 450 455 460
 Ser Pro Gly Ser Thr Leu Leu Met Asp Ala Gly Thr Thr Leu Glu Thr
 465 470 475 480
 Ala Asp Gly Ser Leu Ser Ile Ile Cys Ser Gln Cys Arg Phe Leu Lys
 485 490 495
 Arg Asp Gln Glu Xaa Thr Leu Lys Ala Thr Gln Ala Ser Gln Thr Val
 500 505 510
 Thr Leu Ser Gly Ser Leu Ser Leu Val Asp Pro Ser Gly Asn Val Tyr
 515 520 525
 Glu Asp Val Ser Trp Asn Asn Pro Gln Val Phe Ser Cys Leu Thr Leu
 530 535 540
 Thr Ala Asp Asp Pro Ala Asn Ile His Ile Thr Asp Leu Ala Ala Asp
 545 550 555 560
 Pro Leu Glu Lys Asn Pro Ile His Trp Gly Tyr Gln Gly Asn Trp Ala
 565 570 575
 Leu Ser Trp Gln Glu Asp Thr Ala Thr Lys Ser Lys Ala Ala Thr Leu
 580 585 590
 Thr Trp Thr Lys Thr Gly Tyr Asn Pro Asn Pro Glu Arg Arg Gly Thr
 595 600 605
 Leu Val Ala Asn Thr Leu Trp Gly Ser Phe Val Asp Val Arg Ser Ile
 610 615 620
 Gln Gln Leu Val Ala Thr Lys Val Arg Gln Ser Gln Glu Thr Arg Gly
 625 630 635 640
 Ile Trp Cys Glu Gly Ile Ser Asn Phe Phe His Lys Asp Ser Thr Lys
 645 650 655
 Ile Asn Lys Gly Phe Arg His Ile Ser Ala Gly Tyr Val Val Gly Ala
 660 665 670
 Thr Thr Thr Leu Ala Ser Asp Asn Leu Ile Thr Ala Ala Phe Cys Gln
 675 680 685
 Leu Phe Gly Lys Asp Arg Asp His Phe Ile Asn Lys Asn Arg Ala Ser
 690 695 700
 Ala Tyr Ala Ala Ser Leu His Leu Gln His Leu Ala Thr Leu Ser Ser
 705 710 715 720

Pro Ser Leu Leu Arg Tyr Leu Pro Gly Ser Glu Ser Glu Gln Pro Val
 725 730 735
 Leu Phe Asp Ala Gln Ile Ser Tyr Ile Tyr Ser Lys Asn Thr Met Lys
 740 745 750
 Thr Tyr Tyr Thr Gln Ala Pro Lys Gly Glu Ser Ser Trp Tyr Asn Asp
 755 760 765
 Gly Cys Ala Leu Glu Leu Ala Ser Ser Leu Pro His Thr Ala Leu Ser
 770 775 780
 His Glu Gly Leu Phe His Ala Tyr Phe Pro Phe Ile Lys Val Glu Ala
 785 790 795 800
 Ser Tyr Ile His Gln Asp Ser Phe Lys Glu Arg Asn Thr Thr Leu Val
 805 810 815
 Arg Ser Phe Asp Ser Gly Asp Leu Ile Asn Val Ser Val Pro Ile Gly
 820 825 830
 Ile Thr Phe Gly Arg Phe Ser Arg Asn Glu Arg Ala Ser Tyr Glu Ala
 835 840 845
 Thr Val Ile Tyr Val Ala Asp Val Tyr Arg Lys Asn Pro Asp Cys Thr
 850 855 860
 Thr Ala Leu Leu Ile Asn Asn Thr Ser Trp Lys Thr Thr Gly Thr Asn
 865 870 875 880
 Leu Ser Arg Gln Ala Gly Ile Gly Arg Ala Gly Ile Phe Tyr Ala Phe
 885 890 895
 Ser Pro Asn Leu Glu Val Thr Ser Asn Leu Ser Met Glu Ile Arg Gly
 900 905 910
 Ser Ser Arg Ser Tyr Asn Ala Asp Leu Gly Gly Lys Phe Gln Phe
 915 920 925

<210>473

<211>393

<212>PRT

<213>Chlamydia pneumoniae

<400>473

Phe Ile Gln Pro Ser Arg Arg Glu Ile His Glu Trp Lys Cys Ile Leu
 1 5 10 15
 Leu Gly Ser Ser Leu Arg Met Glu Met Met Ser Pro Phe Gln Gln Pro
 20 25 30
 Glu Gln Cys His Phe Asp Val Val Gly Ser Phe Leu Arg Pro Glu Ser
 35 40 45
 Leu Thr Arg Ala Arg Ser Asp Phe Glu Glu Gly Arg Ile Val Tyr Glu
 50 55 60
 Gln Met Arg Val Val Glu Asp Ala Ala Ile Arg Asn Leu Ile Lys Lys
 65 70 75 80
 Gln Thr Glu Ala Gly Leu Ile Phe Phe Thr Asp Gly Glu Phe Arg Arg
 85 90 95
 Tyr Ser Trp Asp Phe Asp Phe Met Trp Gly Phe His Gly Val Asp Arg
 100 105 110
 Arg Arg Asp Ser Asn Asp Pro Glu Ile Gly Val Tyr Leu Lys Asp Lys
 115 120 125
 Ile Ser Val Ser Lys His Pro Phe Ile Glu His Phe Glu Phe Val Lys
 130 135 140
 Thr Phe Glu Lys Gly Asn Ala Lys Ala Lys Gln Thr Ile Pro Ser Pro
 145 150 155 160
 Ser Gln Phe Phe His Glu Met Ile Phe Ala Pro Asn Leu Lys Asn Thr
 165 170 175
 Arg Lys Phe Tyr Pro Thr Asn Gln Glu Leu Ile Asp Asp Ile Val Phe
 180 185 190
 Tyr Tyr Arg Gln Val Ile Gln Asp Leu Tyr Ala Ala Gly Cys Arg Asn
 195 200 205
 Leu Gln Leu Asp Asp Cys Ala Trp Cys Arg Leu Leu Asp Ile Arg Ala
 210 215 220
 Pro Ser Trp Tyr Gly Val Asp Ser His Asp Arg Leu Gln Glu Ile Leu
 225 230 235 240
 Glu Gln Phe Leu Trp Ile His Asn Leu Val Met Lys Asp Arg Pro Glu
 245 250 255
 Asp Leu Phe Val Ser Leu His Val Cys Arg Gly Asp Tyr Gln Ala Glu

260 265 270
 Phe Phe Ser Arg Arg Ala Tyr Asp Ser Ile Glu Glu Pro Leu Phe Ala
 275 280 285
 Lys Thr Asp Val Asp Ser Tyr His Tyr Tyr Trp Ala Leu Asp Asp Lys
 290 295 300
 Tyr Ser Gly Gly Ala Glu Pro Leu Ala Tyr Val Ser Gly Glu Lys His
 305 310 315 320
 Val Cys Leu Gly Leu Ile Ser Ser Asn His Ser Cys Ile Glu Asp Arg
 325 330 335
 Asp Ala Val Val Ser Arg Ile Tyr Glu Ala Ala Ser Tyr Ile Pro Leu
 340 345 350
 Glu Arg Leu Ser Leu Ser Pro Gln Cys Gly Phe Ala Ser Cys Glu Gly
 355 360 365
 Asp His Arg Met Thr Glu Glu Glu Gln Trp Lys Lys Ile Ala Phe Val
 370 375 380
 Lys Glu Ile Ala Lys Glu Ile Trp Gly
 385 390
 <310>474
 <311>643
 <312>PRT
 <313>Chlamydia pneumoniae
 <400>474
 Leu Met Ala Glu Pro Phe Met Leu Arg Ser Leu His Trp Leu Pro Gly
 1 5 10 15
 Gly Gly Gly Gly Ile Ser Phe Ser Asn Asn Ile Val Gln Gly Thr Thr
 20 25 30
 Ala Gly Asn Gly Gly Ala Ile Ser Ile Leu Ala Ala Gly Glu Cys Ser
 35 40 45
 Leu Ser Ala Glu Ala Gly Asp Ile Thr Phe Asn Gly Asn Ala Ile Val
 50 55 60
 Ala Thr Thr Pro Gln Thr Thr Lys Arg Asn Ser Ile Asp Ile Gly Ser
 65 70 75 80
 Thr Ala Lys Ile Thr Asn Leu Arg Ala Ile Ser Gly His Ser Ile Phe
 85 90 95
 Phe Tyr Asp Pro Ile Thr Ala Asn Thr Ala Ala Asp Ser Thr Asp Thr
 100 105 110
 Leu Asn Leu Asn Lys Ala Asp Ala Gly Asn Ser Thr Asp Tyr Ser Gly
 115 120 125
 Ser Ile Val Phe Ser Gly Glu Lys Leu Ser Glu Asp Glu Ala Lys Val
 130 135 140
 Ala Asp Asn Leu Thr Ser Thr Leu Lys Gln Pro Val Thr Leu Thr Ala
 145 150 155 160
 Gly Asn Leu Val Leu Lys Arg Gly Val Thr Leu Asp Thr Lys Gly Phe
 165 170 175
 Thr Gln Thr Ala Gly Ser Ser Val Ile Met Asp Ala Gly Thr Thr Leu
 180 185 190
 Lys Ala Ser Thr Glu Glu Val Thr Leu Thr Gly Leu Ser Ile Pro Val
 195 200 205
 Asp Ser Leu Gly Glu Gly Lys Lys Val Val Ile Ala Ala Ser Ala Ala
 210 215 220
 Ser Lys Asn Val Ala Leu Ser Gly Pro Ile Leu Leu Leu Asp Asn Gln
 225 230 235 240
 Gly Asn Ala Tyr Glu Asn His Asp Leu Gly Lys Thr Gln Asp Phe Ser
 245 250 255
 Phe Val Gln Leu Ser Ala Leu Gly Thr Ala Thr Thr Thr Asp Val Pro
 260 265 270
 Ala Val Pro Thr Val Ala Thr Pro Thr His Tyr Gly Tyr Gln Gly Thr
 275 280 285
 Trp Gly Met Thr Trp Val Asp Asp Thr Ala Ser Thr Pro Lys Thr Lys
 290 295 300
 Thr Ala Thr Leu Ala Trp Thr Asn Thr Gly Tyr Leu Pro Asn Pro Glu
 305 310 315 320
 Arg Gln Gly Pro Leu Val Pro Asn Ser Leu Trp Gly Ser Phe Ser Asp
 325 330 335

Ile Gln Ala Ile Gln Gly Val Ile Glu Arg Ser Ala Leu Thr Leu Cys
 340 345 350
 Ser Asp Arg Gly Phe Trp Ala Ala Gly Val Ala Asn Phe Leu Asp Lys
 355 360 365
 Asp Lys Lys Gly Glu Lys Arg Lys Tyr Arg His Lys Ser Gly Gly Tyr
 370 375 380
 Ala Ile Gly Gly Ala Ala Gln Thr Cys Ser Glu Asn Leu Ile Ser Phe
 385 390 395 400
 Ala Phe Cys Gln Leu Phe Gly Ser Asp Lys Asp Phe Leu Val Ala Lys
 405 410 415
 Asn His Thr Asp Thr Tyr Ala Gly Ala Phe Tyr Ile Gln His Ile Thr
 420 425 430
 Glu Cys Ser Gly Phe Ile Gly Cys Leu Leu Asp Lys Leu Pro Gly Ser
 435 440 445
 Trp Ser His Lys Pro Leu Val Leu Glu Gly Gln Leu Ala Tyr Ser His
 450 455 460
 Val Ser Asn Asp Leu Lys Thr Lys Tyr Thr Ala Tyr Pro Glu Val Lys
 465 470 475 480
 Gly Ser Trp Gly Asn Asn Ala Phe Asn Met Met Leu Gly Ala Ser Ser
 485 490 495
 His Ser Tyr Pro Glu Tyr Leu His Cys Phe Asp Thr Tyr Ala Pro Tyr
 500 505 510
 Ile Lys Leu Asn Leu Thr Tyr Ile Arg Gln Asp Ser Phe Ser Glu Lys
 515 520 525
 Gly Thr Glu Gly Arg Ser Phe Asp Asp Ser Asn Leu Phe Asn Leu Ser
 530 535 540
 Leu Pro Ile Gly Val Lys Phe Glu Lys Phe Ser Asp Cys Asn Asp Phe
 545 550 555 560
 Ser Tyr Asp Leu Thr Leu Ser Tyr Val Pro Asp Leu Ile Arg Asn Asp
 565 570 575
 Pro Lys Cys Thr Thr Ala Leu Val Ile Ser Gly Ala Ser Trp Glu Thr
 580 585 590
 Tyr Ala Asn Asn Leu Ala Arg Gln Ala Leu Gln Val Arg Ala Gly Ser
 595 600 605
 His Tyr Ala Phe Ser Pro Met Phe Glu Val Leu Gly Gln Phe Val Phe
 610 615 620
 Glu Val Arg Gly Ser Ser Arg Ile Tyr Asn Val Asp Leu Gly Gly Lys
 625 630 635 640
 Phe Gln Phe

<210>475

<211>102

<212>PRT

<213>Chlamydia pneumoniae

<400>475

Lys Lys Met Leu Cys Pro Asp Ile Ala Arg Lys Phe Val Ile Phe Ala
 1 5 10 15
 Val Asp Pro Met Ser Ile Glu Phe Leu Phe Val Val Cys Gly Val Val
 20 25 30
 Ala Thr Met Ala Phe Pro Leu Lys Val Met Ser Pro Ala Ser Ala Glu
 35 40 45
 Arg Leu His Ser Pro Ala Ala Ser Ile Glu Met Ala Pro Pro Leu Pro
 50 55 60
 Ala Val Val Pro Trp Thr Ile Leu Leu Glu Lys Glu Ile Pro Pro Pro
 65 70 75 80
 Pro Pro Gly Ser Gln Cys Lys Leu Leu Ser Ile Asn Gly Ser Ala Ile
 85 90 95
 Ser Tyr Ser Leu Val Ser
 100

<210>476

<211>174

<212>PRT

<213>Chlamydia pneumoniae

<400>476

Ser Gln Pro Pro Gln Glu Lys Val Gln Leu Asn Val Gln Gly Ile Leu
 1 5 10 15
 His Leu Ile Thr Met Glu Leu Phe Tyr Leu Asn Lys Ile Thr Val Arg
 20 25 30
 Lys Met Ala Asp Ile Ser Thr Lys Asn Leu Ser Leu Lys Asn Ser Thr
 35 40 45
 Gly Ser Ile Ser Phe Glu Gly Asn Lys Ser Ser Ala Thr Gly Lys Lys
 50 55 60
 Gly Gly Ala Ile Cys Ala Thr Gly Thr Val Asp Ile Thr Asn Asn Thr
 65 70 75 80
 Ala Pro Thr Leu Phe Ser Asn Asn Ile Ala Glu Ala Ala Gly Gly Ala
 85 90 95
 Ile Asn Ser Thr Gly Asn Cys Thr Ile Thr Gly Asn Thr Ser Leu Val
 100 105 110
 Phe Ser Glu Asn Ser Val Thr Ala Thr Ala Gly Asn Gly Gly Ala Leu
 115 120 125
 Ser Gly Asp Ala Asp Val Thr Ile Ser Gly Asn Gln Ser Val Thr Phe
 130 135 140
 Ser Gly Asn Gln Ala Val Ala Asn Gly Gly Ala Ile Tyr Ala Lys Lys
 145 150 155 160
 Leu Thr Leu Ala Ser Gly Gly Gly Gly Gly Tyr Leu Leu Phe
 165 170

<210>477

<211>118

<212>PRT

<213>Chlamydia pneumoniae

<400>477

Met Lys Ser Gln Phe Ser Trp Leu Val Leu Ser Ser Thr Leu Ala Cys
 1 5 10 15
 Phe Thr Ser Cys Ser Thr Val Phe Ala Thr Ala Glu Asn Ile Gly
 20 25 30
 Pro Ser Asp Ser Phe Asp Gly Ser Thr Asn Thr Gly Thr Tyr Thr Pro
 35 40 45
 Lys Asn Thr Thr Thr Gly Ile Asp Tyr Thr Leu Thr Gly Asp Ile Thr
 50 55 60
 Leu Gln Asn Leu Gly Asp Ser Ala Ala Leu Thr Lys Gly Cys Phe Ser
 65 70 75 80
 Asp Thr Thr Glu Ser Leu Ser Phe Ala Gly Lys Gly Tyr Ser Leu Ser
 85 90 95
 Phe Leu Asn Xaa Lys Ser Ser Ala Glu Gly Ala Xaa Phe Leu Leu Gln
 100 105 110
 Leu Ile Lys Ile Cys Arg
 115

<210>476

<211>949

<212>PRT

<213>Chlamydia pneumoniae

<400>478

Leu Ile Tyr Leu Phe Cys Phe Tyr Ile Asp Ala Asn Ser Ser Leu Lys
 1 5 10 15
 Asn Lys Ser Ile Thr Met Lys Thr Ser Ile Pro Trp Val Leu Val Ser
 20 25 30
 Ser Val Leu Ala Phe Ser Cys His Leu Gln Ser Leu Ala Asn Glu Glu
 35 40 45
 Leu Leu Ser Pro Asp Asp Ser Phe Asn Gly Asn Ile Asp Ser Gly Thr
 50 55 60
 Phe Thr Pro Lys Thr Ser Ala Thr Thr Tyr Ser Leu Thr Gly Asp Val
 65 70 75 80
 Phe Phe Tyr Glu Pro Gly Lys Gly Thr Pro Leu Ser Asp Ser Cys Phe
 85 90 95
 Lys Gln Thr Thr Asp Asn Leu Thr Phe Leu Gly Asn Gly His Ser Leu
 100 105 110
 Thr Phe Gly Phe Ile Asp Ala Gly Thr His Ala Gly Ala Ala Ser
 115 120 125

Thr	Thr	Ala	Asn	Lys	Asn	Leu	Thr	Phe	Ser	Gly	Phe	Ser	Leu	Leu	Ser
130						135					140				
Phe	Asp	Ser	Ser	Pro	Ser	Thr	Thr	Val	Thr	Thr	Gly	Gln	Gly	Thr	Leu
145					150					155					160
Ser	Ser	Ala	Gly	Gly	Val	Asn	Leu	Glu	Asn	Ile	Arg	Iys	Leu	Val	Val
					165				170					175	
Ala	Gly	Asn	Phe	Ser	Thr	Ala	Asp	Gly	Gly	Ala	Ile	Lys	Gly	Ala	Ser
			180					185					190		
Phe	Leu	Leu	Thr	Gly	Thr	Ser	Gly	Asp	Ala	Leu	Phe	Ser	Asn	Asn	Ser
	195						200					205			
Ser	Ser	Thr	Lys	Gly	Gly	Ala	Ile	Ala	Thr	Thr	Ala	Gly	Ala	Arg	Ile
210						215					220				
Ala	Asn	Asn	Thr	Gly	Xaa	Val	Arg	Phe	Leu	Ser	Asn	Ile	Ala	Ser	Thr
225					230					235					240
Ser	Gly	Gly	Ala	Ile	Asp	Asp	Glu	Gly	Thr	Ser	Ile	Leu	Ser	Asn	Asn
					245				250					255	
Lys	Phe	Leu	Tyr	Phe	Glu	Gly	Asn	Ala	Ala	Lys	Thr	Thr	Gly	Gly	Ala
			260				265						270		
Ile	Cys	Asn	Thr	Lys	Ala	Ser	Gly	Ser	Pro	Glu	Leu	Ile	Ile	Ser	Asn
		275					280					285			
Asn	Lys	Thr	Leu	Ile	Phe	Ala	Ser	Asn	Val	Ala	Glu	Thr	Ser	Gly	Gly
	290					295					300				
Ala	Ile	His	Ala	Lys	Lys	Leu	Ala	Leu	Ser	Ser	Gly	Gly	Phe	Thr	Glu
305					310					315					320
Phe	Leu	Arg	Asn	Asn	Val	Ser	Ser	Ala	Thr	Pro	Lys	Gly	Gly	Ala	Ile
				325					330					335	
Ser	Ile	Asp	Ala	Ser	Gly	Glu	Leu	Ser	Leu	Ser	Ala	Glu	Thr	Gly	Asn
		340						345					350		
Ile	Thr	Phe	Val	Arg	Asn	Thr	Leu	Thr	Thr	Thr	Gly	Ser	Thr	Asp	Thr
		355					360					365			
Pro	Lys	Arg	Asn	Ala	Ile	Asn	Ile	Gly	Ser	Asn	Gly	Lys	Phe	Thr	Glu
	370					375					380				
Leu	Arg	Ala	Ala	Lys	Asn	His	Thr	Ile	Phe	Phe	Tyr	Asp	Pro	Ile	Thr
385					390					395					400
Ser	Glu	Gly	Thr	Ser	Ser	Asp	Val	Leu	Lys	Ile	Asn	Asn	Gly	Ser	Ala
				405					410					415	
Gly	Ala	Leu	Asn	Pro	Tyr	Gln	Gly	Thr	Ile	Leu	Phe	Ser	Gly	Glu	Thr
			420					425					430		
Leu	Thr	Ala	Asp	Glu	Leu	Lys	Val	Ala	Asp	Asn	Leu	Lys	Ser	Ser	Phe
		435					440					445			
Thr	Gln	Pro	Val	Ser	Leu	Ser	Gly	Gly	Lys	Leu	Leu	Leu	Gln	Lys	Gly
	450					455					460				
Val	Thr	Leu	Glu	Ser	Thr	Ser	Phe	Ser	Gln	Glu	Ala	Gly	Ser	Leu	Leu
465					470					475					480
Gly	Met	Asp	Ser	Gly	Thr	Thr	Leu	Ser	Thr	Thr	Ala	Gly	Ser	Ile	Thr
				485					490					495	
Ile	Thr	Asn	Leu	Gly	Ile	Asn	Val	Asp	Ser	Leu	Gly	Leu	Lys	Gln	Pro
		500						505					510		
Val	Ser	Leu	Thr	Ala	Lys	Gly	Ala	Ser	Asn	Lys	Val	Ile	Val	Ser	Gly
	515						520					525			
Lys	Leu	Asn	Leu	Ile	Asp	Ile	Glu	Gly	Asn	Ile	Tyr	Glu	Ser	His	Met
	530					535					540				
Phe	Ser	His	Asp	Gln	Leu	Phe	Ser	Leu	Leu	Lys	Ile	Thr	Val	Asp	Ala
545					550					555					560
Asp	Val	Asp	Thr	Asn	Val	Asp	Ile	Ser	Ser	Leu	Ile	Pro	Val	Pro	Ala
				565				570						575	
Glu	Asp	Pro	Asn	Ser	Glu	Tyr	Gly	Phe	Gln	Gly	Gln	Trp	Asn	Val	Asn
		580						585					590		
Trp	Thr	Thr	Asp	Thr	Ala	Thr	Asn	Thr	Lys	Glu	Ala	Thr	Ala	Thr	Trp
	595						600					605			
Thr	Lys	Thr	Gly	Phe	Val	Pro	Ser	Pro	Glu	Arg	Lys	Ser	Ala	Leu	Val
	610					615					620				
Cys	Asn	Thr	Leu	Trp	Gly	Val	Ph	Thr	Asp	Ile	Arg	Ser	Leu	Gln	Gln
625					630					635					640

Leu Val Glu Ile Gly Ala Thr Gly Met Glu His Lys Gln Gly Phe Trp
 645 650 655
 Val Ser Ser Met Thr Asn Phe Leu His Lys Thr Gly Asp Glu Asn Arg
 660 665 670
 Lys Gly Phe Arg His Thr Ser Gly Gly Tyr Val Ile Gly Gly Ser Ala
 675 680 685
 His Thr Pro Lys Asp Asp Leu Phe Thr Phe Ala Phe Cys His Leu Phe
 690 695 700
 Ala Arg Asp Lys Asp Cys Phe Ile Ala His Asn Asn Ser Arg Thr Tyr
 705 710 715 720
 Gly Gly Thr Leu Phe Phe Lys His Ser His Thr Leu Gln Pro Gln Asn
 725 730 735
 Tyr Leu Arg Leu Gly Arg Ala Lys Phe Ser Glu Ser Ala Ile Glu Lys
 740 745 750
 Phe Pro Arg Glu Ile Pro Leu Ala Leu Asp Val Gln Val Ser Phe Ser
 755 760 765
 His Ser Asp Asn Arg Met Glu Thr His Tyr Thr Ser Leu Pro Glu Ser
 770 775 780
 Glu Gly Ser Trp Ser Asn Glu Cys Ile Ala Gly Gly Ile Gly Leu Asp
 785 790 795 800
 Leu Pro Phe Val Leu Ser Asn Pro His Pro Leu Phe Lys Thr Phe Ile
 805 810 815
 Pro Gln Met Lys Val Glu Met Val Tyr Val Ser Gln Asn Ser Phe Phe
 820 825 830
 Glu Ser Ser Ser Asp Gly Arg Gly Phe Ser Ile Gly Arg Leu Leu Asn
 835 840 845
 Leu Ser Ile Pro Val Gly Ala Lys Phe Val Gln Gly Asp Ile Gly Asp
 850 855 860
 Ser Tyr Thr Tyr Asp Leu Ser Gly Phe Phe Val Ser Asp Val Tyr Arg
 865 870 875 880
 Asn Asn Pro Gln Ser Thr Ala Thr Leu Val Met Ser Pro Asp Ser Trp
 885 890 895
 Lys Ile Arg Gly Gly Asn Leu Ser Arg Gln Ala Phe Leu Leu Arg Gly
 900 905 910
 Ser Asn Asn Tyr Val Tyr Asn Ser Asn Cys Glu Leu Phe Gly His Tyr
 915 920 925
 Ala Met Glu Leu Arg Gly Ser Ser Arg Asn Tyr Asn Val Asp Val Gly
 930 935 940
 Thr Lys Leu Arg Phe
 945
 <210>479
 <211>319
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>479
 Phe Asn Glu Glu Thr Met Thr Ile Leu Arg Asn Phe Leu Thr Cys Ser
 1 5 10 15
 Ala Leu Phe Leu Ala Leu Pro Ala Ala Ala Gln Val Val Tyr Leu His
 20 25 30
 Glu Ser Asp Gly Tyr Asn Gly Ala Ile Asn Asn Lys Ser Leu Glu Pro
 35 40 45
 Lys Ile Thr Cys Tyr Pro Glu Gly Thr Ser Tyr Ile Phe Leu Asp Asp
 50 55 60
 Val Arg Ile Ser Asn Val Lys His Asp Gln Glu Asp Ala Gly Val Phe
 65 70 75 80
 Ile Asn Arg Ser Gly Asn Leu Phe Phe Met Gly Asn Arg Cys Asn Phe
 85 90 95
 Thr Phe His Asn Leu Met Thr Glu Gly Phe Gly Ala Ala Ile Ser Asn
 100 105 110
 Arg Val Gly Asp Thr Thr Leu Thr Leu Ser Asn Phe Ser Tyr Leu Ala
 115 120 125
 Phe Thr Ser Ala Pro Leu Leu Pro Gln Gly Gln Gly Ala Ile Tyr Ser
 130 135 140
 Leu Gly Ser Val Met Ile Glu Asn Ser Glu Glu Val Thr Phe Cys Gly

145 150 155 160
 Asn Tyr Ser Ser Trp Ser Gly Ala Ala Ile Tyr Thr Pro Tyr Leu Leu
 165 170 175
 Gly Ser Lys Ala Ser Arg Pro Ser Val Asn Leu Ser Gly Asn Arg Tyr
 180 185 190
 Leu Val Phe Arg Asp Asn Val Ser Gln Gly Tyr Gly Gly Ala Ile Ser
 195 200 205
 Thr His Asn Leu Thr Leu Thr Arg Gly Pro Ser Cys Phe Glu Asn
 210 215 220
 Asn His Ala Tyr His Asp Val Asn Ser Asn Gly Gly Ala Ile Ala Ile
 225 230 235 240
 Ala Pro Gly Gly Ser Ile Ser Ile Ser Val Lys Ser Gly Asp Leu Ile
 245 250 255
 Phe Lys Gly Asn Thr Ala Ser Gln Asp Gly Asn Thr Ile His Asn Ser
 260 265 270
 Ile His Leu Gln Ser Gly Ala Gln Phe Lys Asn Leu Arg Ala Val Ser
 275 280 285
 Glu Ser Gly Val Tyr Phe Tyr Asp Pro Ile Ser His Ser Glu Ser His
 290 295 300
 Lys Ile Thr Asp Leu Val Ile Asn Ala Pro Glu Gly Lys Glu Thr Tyr
 305 310 315 320
 Glu Gly Thr Ile Ser Phe Ser Gly Leu Cys Leu Asp Asp His Glu Val
 325 330 335
 Cys Ala Glu Asn Leu Thr Ser Thr Ile Leu Gln Asp Val Thr Leu Ala
 340 345 350
 Gly Gly Thr Leu Ser Leu Ser Asp Gly Val Thr Leu Gln Leu His Ser
 355 360 365
 Phe Lys Gln Glu Ala Ser Ser Thr Leu Thr Met Ser Pro Gly Thr Thr
 370 375 380
 Leu Leu Cys Ser Gly Asp Ala Arg Val Gln Asn Leu His Ile Leu Ile
 385 390 395 400
 Glu Asp Thr Asp Asn Phe Val Pro Val Arg Ile Arg Ala Glu Asp Lys
 405 410 415
 Asp Ala Leu Val Ser Leu Glu Lys Leu Lys Val Ala Phe Glu Ala Tyr
 420 425 430
 Trp Ser Val Tyr Asp Phe Pro Gln Phe Lys Glu Ala Phe Thr Ile Pro
 435 440 445
 Leu Leu Glu Leu Leu Gly Pro Ser Phe Asp Ser Leu Leu Gly Glu
 450 455 460
 Thr Thr Leu Glu Arg Thr Gln Val Thr Thr Glu Asn Asp Ala Val Arg
 465 470 475 480
 Gly Phe Trp Ser Leu Ser Trp Glu Glu Tyr Pro Pro Ser Leu Asp Lys
 485 490 495
 Asp Arg Arg Ile Thr Pro Thr Lys Lys Thr Val Phe Leu Thr Trp Asn
 500 505 510
 Pro Glu Ile Thr Ser Thr Pro
 515

<210>480

<211>522

<212>PRT

<213>Chlamydia pneumoniae

<400>480

Asn Cys Val Leu Leu Tyr Leu Phe Phe Tyr Ser Leu Ser Leu Ile Cys
 1 5 10 15
 Arg Ile Ile Trp Phe His Leu Tyr Val Gln Met Lys Thr Ser Ile Arg
 20 25 30
 Lys Phe Leu Ile Ser Thr Thr Leu Ala Pro Cys Phe Ala Ser Thr Ala
 35 40 45
 Phe Thr Val Glu Val Ile Met Pro Ser Glu Asn Phe Asp Gly Ser Ser
 50 55 60
 Gly Lys Ile Phe Pro Tyr Thr Thr Leu Ser Asp Pro Arg Gly Thr Leu
 65 70 75 80
 Cys Ile Phe Ser Gly Asp Leu Tyr Ile Ala Asn Leu Asp Asn Ala Ile
 85 90 95

Ser Arg Thr Ser Ser Ser Cys Phe Ser Asn Arg Ala Gly Ala Leu Gln
 100 105 110
 Ile Leu Gly Lys Gly Gly Val Phe Ser Phe Leu Asn Ile Arg Ser Ser
 115 120 125
 Ala Asp Gly Ala Ala Ile Ser Ser Val Ile Thr Gln Asn Pro Glu Leu
 130 135 140
 Cys Pro Leu Ser Phe Ser Gly Phe Ser Gln Met Ile Phe Asp Asn Cys
 145 150 155 160
 Glu Ser Leu Thr Ser Asp Thr Ser Ala Ser Asn Val Ile Pro His Ala
 165 170 175
 Ser Ala Ile Tyr Ala Thr Thr Pro Met Leu Phe Thr Asn Asn Asp Ser
 180 185 190
 Ile Leu Phe Gln Tyr Asn Arg Ser Ala Gly Phe Gly Ala Ala Ile Arg
 195 200 205
 Gly Thr Ser Ile Thr Ile Glu Asn Thr Lys Lys Ser Leu Leu Phe Asn
 210 215 220
 Gly Asn Gly Ser Ile Ser Asn Gly Gly Ala Leu Thr Gly Ser Ala Ala
 225 230 235 240
 Ile Asn Leu Ile Asn Asn Ser Ala Pro Val Ile Phe Ser Thr Asn Ala
 245 250 255
 Thr Gly Ile Tyr Gly Gly Ala Ile Tyr Leu Thr Gly Gly Ser Met Leu
 260 265 270
 Thr Ser Gly Asn Leu Ser Gly Val Leu Phe Val Asn Asn Ser Ser Arg
 275 280 285
 Ser Gly Gly Ala Ile Tyr Ala Asn Gly Asn Val Thr Phe Ser Asn Asn
 290 295 300
 Ser Asp Leu Thr Phe Gln Asn Asn Thr Ala Ser Pro Gln Asn Ser Leu
 305 310 315 320
 Pro Ala Pro Thr Pro Pro Pro Thr Pro Pro Ala Val Thr Pro Leu Leu
 325 330 335
 Gly Tyr Gly Gly Ala Ile Phe Cys Thr Pro Pro Ala Thr Pro Pro Pro
 340 345 350
 Thr Gly Val Ser Leu Thr Ile Ser Gly Glu Asn Ser Val Thr Phe Leu
 355 360 365
 Glu Asn Ile Ala Ser Glu Gln Gly Gly Ala Leu Tyr Gly Lys Lys Ile
 370 375 380
 Ser Ile Asp Ser Asn Lys Ser Thr Ile Phe Leu Gly Asn Thr Ala Gly
 385 390 395 400
 Lys Gly Gly Ala Ile Ala Ile Pro Glu Ser Gly Glu Leu Ser Leu Ser
 405 410 415
 Ala Asn Gln Gly Asp Ile Leu Phe Asn Lys Asn Leu Ser Ile Thr Ser
 420 425 430
 Gly Thr Pro Thr Arg Asn Ser Ile His Phe Gly Lys Asp Ala Lys Phe
 435 440 445
 Ala Thr Leu Gly Leu Arg Lys Ala Ile Pro Tyr Thr Ser Met Ile Arg
 450 455 460
 Leu His Leu Met Ile Tyr Leu Cys Ile Arg Ser Arg Tyr Cys Gly Arg
 465 470 475 480
 Gln Ser Gln Ser Gln Cys Arg Trp Cys Val Phe Arg Asp Tyr Cys Leu
 485 490 495
 Phe Arg Arg Asn Pro His Cys Tyr Arg Ser Ser Asn Pro Cys Lys Cys
 500 505 510
 Tyr Ile Tyr Ile Lys Pro Lys Ala Arg Thr
 515 520

<210>481

<211>85

<212>PRT

<213>Chlamydia pneumoniae

<400>481

Arg Ala Pro Pro Cys Ser Glu Ala Met Phe Ser Arg Asn Val Thr Leu
 1 5 10 15
 Phe Ser Pro Asp Ile Val Arg Leu Thr Pro Val Gly Gly Gly Val Ala
 20 25 30
 Gly Gly Val Gln Lys Met Ala Pro Pro Tyr Pro Asn Lys Gly Val Thr

35 40 45
 Ala Gly Val Gly Gly Gly Val Gly Ala Gly Lys Glu Phe Cys Gly
 50 55 60
 Asp Ala Val Leu Phe Trp Lys Val Arg Ser Leu Leu Leu Glu Asn Val
 65 70 75 80
 Thr Phe Pro Leu Ala
 85
 <210>482
 <211>530
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>482
 Phe Ile Ser Ala Ser Ala Ala Ala Thr Val Val Val Asn Pro Lys Ala
 1 5 10 15
 Ser Ala Asp Gly Ala Tyr Ser Gly Thr Ile Val Phe Ser Gly Glu Thr
 20 25 30
 Leu Thr Ala Thr Glu Ala Ala Thr Pro Ala Asn Ala Thr Ser Thr Leu
 35 40 45
 Asn Gln Lys Leu Glu Leu Glu Gly Gly Thr Leu Ala Leu Arg Asn Gly
 50 55 60
 Ala Thr Leu Asn Val His Asn Phe Thr Gln Asp Glu Lys Ser Val Val
 65 70 75 80
 Ile Met Asp Ala Gly Thr Thr Leu Ala Thr Thr Asn Gly Ala Asn Asn
 85 90 95
 Thr Asp Gly Ala Ile Thr Leu Asn Lys Leu Val Ile Asn Leu Asp Ser
 100 105 110
 Leu Asp Gly Thr Lys Ala Ala Val Val Asn Val Gln Ser Thr Asn Gly
 115 120 125
 Ala Leu Thr Ile Ser Gly Thr Leu Gly Leu Val Lys Asn Ser Gln Asp
 130 135 140
 Cys Cys Asp Asn His Gly Met Phe Asn Lys Asp Leu Gln Gln Val Pro
 145 150 155 160
 Ile Leu Glu Leu Lys Ala Thr Ser Asn Thr Val Thr Thr Thr Asp Phe
 165 170 175
 Ser Leu Gly Thr Asn Gly Tyr Gln Gln Ser Pro Tyr Gly Tyr Gln Gly
 180 185 190
 Thr Trp Glu Phe Thr Ile Asp Thr Thr Thr His Thr Val Thr Gly Asn
 195 200 205
 Trp Lys Lys Thr Gly Tyr Leu Pro His Pro Glu Arg Leu Ala Pro Leu
 210 215 220
 Ile Pro Asn Ser Leu Trp Ala Asn Val Ile Asp Leu Arg Ala Val Ser
 225 230 235 240
 Gln Ala Ser Ala Ala Asp Gly Glu Asp Val Pro Gly Lys Gln Leu Ser
 245 250 255
 Ile Thr Gly Ile Thr Asn Phe Phe His Ala Asn His Thr Gly Asp Ala
 260 265 270
 Arg Ser Tyr Arg His Met Gly Gly Gly Tyr Leu Ile Asn Thr Tyr Thr
 275 280 285
 Arg Ile Thr Pro Asp Ala Ala Leu Ser Leu Gly Phe Gly Gln Leu Phe
 290 295 300
 Thr Lys Ser Lys Asp Tyr Leu Val Gly His Gly His Ser Asn Val Tyr
 305 310 315 320
 Phe Ala Thr Val Tyr Ser Asn Ile Thr Lys Ser Leu Phe Gly Ser Ser
 325 330 335
 Arg Phe Phe Ser Gly Gly Thr Ser Arg Val Thr Tyr Ser Arg Ser Asn
 340 345 350
 Glu Lys Val Lys Thr Ser Tyr Thr Lys Leu Pro Lys Gly Arg Cys Ser
 355 360 365
 Trp Ser Asn Asn Cys Trp Leu Gly Glu Leu Glu Gly Asn Leu Pro Ile
 370 375 380
 Thr Leu Ser Ser Arg Ile Leu Asn Leu Lys Gln Ile Ile Pro Phe Val
 385 390 395 400
 Lys Ala Glu Val Ala Tyr Ala Thr His Gly Gly Ile Gln Glu Asn Thr
 405 410 415

Pro Glu Gly Arg Ile Phe Gly His Gly His Leu Leu Asn Val Ala Val
 420 425 430
 Pro Val Gly Val Arg Phe Gly Lys Asn Ser His Asn Arg Pro Asp Phe
 435 440 445
 Tyr Thr Ile Ile Val Ala Tyr Ala Pro Asp Val Tyr Arg His Asn Pro
 450 455 460
 Asp Cys Asp Thr Thr Leu Pro Ile Asn Gly Ala Thr Trp Thr Ser Ile
 465 470 475 480
 Gly Asn Asn Leu Thr Arg Ser Thr Leu Leu Val Gln Ala Ser Ser His
 485 490 495
 Thr Ser Val Asn Asp Val Leu Glu Ile Phe Gly His Cys Gly Cys Asp
 500 505 510
 Ile Arg Arg Thr Ser Arg Gln Tyr Thr Leu Asp Ile Gly Ser Lys Leu
 515 520 525

Arg Phe
 530

<210>483

<211>280

<212>PRT

<213>Chlamydia pneumoniae

<400>483

Gly Met Pro Leu Ser Phe Lys Ser Ser Ser Phe Cys Leu Leu Ala Cys
 1 5 10 15
 Leu Cys Ser Ala Ser Cys Ala Phe Ala Glu Thr Arg Leu Gly Gly Asn
 20 25 30
 Phe Val Pro Pro Ile Thr Asn Gln Gly Glu Glu Ile Leu Leu Thr Ser
 35 40 45
 Asp Phe Val Cys Ser Asn Phe Leu Gly Ala Ser Phe Ser Ser Ser Phe
 50 55 60
 Ile Asn Ser Ser Ser Asn Leu Ser Leu Leu Gly Lys Gly Leu Ser Leu
 65 70 75 80
 Thr Phe Thr Ser Cys Gln Ala Pro Thr Asn Ser Asn Tyr Ala Leu Leu
 85 90 95
 Ser Ala Ala Glu Thr Leu Thr Phe Lys Asn Phe Ser Ser Ile Asn Phe
 100 105 110
 Thr Gly Asn Gln Ser Thr Gly Leu Gly Gly Leu Ile Tyr Gly Lys Asp
 115 120 125
 Ile Val Phe Gln Ser Ile Lys Asp Leu Ile Phe Thr Thr Asn Arg Val
 130 135 140
 Ala Tyr Ser Pro Ala Ser Val Thr Thr Ser Ala Thr Pro Ala Ile Thr
 145 150 155 160
 Thr Val Thr Thr Gly Ala Ser Ala Leu Gln Pro Thr Asp Ser Leu Thr
 165 170 175
 Val Glu Asn Ile Ser Gln Ser Ile Lys Phe Phe Gly Asn Leu Ala Asn
 180 185 190
 Phe Gly Ser Ala Ile Ser Ser Ser Pro Thr Ala Val Val Lys Phe Ile
 195 200 205
 Asn Asn Thr Ala Thr Met Ser Phe Ser His Asn Phe Thr Ser Ser Gly
 210 215 220
 Gly Gly Val Ile Tyr Gly Gly Ser Ser Leu Leu Phe Glu Asn Asn Ser
 225 230 235 240
 Gly Cys Ile Ile Phe Thr Ala Asn Ser Cys Val Asn Ser Leu Lys Gly
 245 250 255
 Val Thr Pro Ser Ser Gly Thr Tyr Ala Leu Gly Ser Gly Gly Ala Ser
 260 265 270
 Ala Ser Leu Arg Glu Leu Ser Asn
 275 280

<210>484

<211>82

<212>PRT

<213>Chlamydia pneumoniae

<400>484

Ile Thr Pro Pro Pro Asp Glu Val Lys Leu Trp Glu Lys Leu Met Val
 1 5 10 15

Ala Val Leu Leu Met Asn Leu Thr Thr Ala Val Gly Glu Leu Leu Ile
 20 25 30
 Ala Glu Pro Lys Leu Ala Arg Phe Pro Lys Asn Leu Ile Asp Trp Asp
 35 40 45
 Met Phe Ser Thr Val Ser Glu Ser Val Gly Trp Arg Ala Glu Ala Pro
 50 55 60
 Val Val Thr Val Val Ile Ala Gly Val Ala Asp Val Val Thr Asp Ala
 65 70 75 80
 Gly Glu

<210>485

<211>492

<212>PRT

<213>Chlamydia pneumoniae

<400>485

Lys Gln Phe Trp Met His His Leu His Arg Gln Leu Leu Cys Glu Gln
 1 5 10 15
 Leu Lys Arg Arg His Pro Phe Ile Arg Asn Leu Cys Phe Arg Lys Trp
 20 25 30
 Arg Ser Ile Cys Ile Pro Thr Gly Thr Phe Glu Leu Lys Asn Asn Gln
 35 40 45
 Gly Lys Cys Thr Phe Ser Tyr Asn Gly Thr Pro Asn Asp Ala Gly Ala
 50 55 60
 Ile Tyr Ala Glu Thr Cys Asn Ile Val Gly Asn Gln Gly Ala Leu Leu
 65 70 75 80
 Leu Asp Ser Asn Thr Ala Ala Arg Asn Gly Gly Ala Ile Cys Ala Lys
 85 90 95
 Val Leu Asn Ile Gln Gly Arg Gly Pro Ile Glu Phe Ser Arg Asn Arg
 100 105 110
 Ala Glu Lys Gly Gly Ala Ile Phe Ile Gly Pro Ser Val Gly Asp Pro
 115 120 125
 Ala Lys Gln Thr Ser Thr Leu Thr Ile Leu Ala Ser Glu Gly Asn Ile
 130 135 140
 Ala Phe Gln Gly Asn Met Leu Asn Thr Lys Pro Gly Ile Arg Asn Ala
 145 150 155 160
 Ile Thr Val Glu Ala Gly Gly Glu Ile Val Ser Leu Ser Ala Gln Gly
 165 170 175
 Gly Ser Arg Leu Val Phe Tyr Asp Pro Ile Thr His Ser Leu Pro Thr
 180 185 190
 Thr Ser Pro Ser Asn Lys Asp Ile Thr Ile Asn Ala Asn Gly Ala Ser
 195 200 205
 Gly Ser Val Val Phe Thr Ser Lys Gly Leu Ser Ser Thr Glu Leu Leu
 210 215 220
 Leu Pro Ala Asn Thr Thr Thr Ile Leu Leu Gly Thr Val Lys Ile Ala
 225 230 235 240
 Ser Gly Glu Leu Lys Ile Thr Asp Asn Ala Val Val Asn Val Leu Gly
 245 250 255
 Phe Ala Thr Gln Gly Ser Gly Gln Leu Thr Leu Gly Ser Gly Gly Thr
 260 265 270
 Leu Gly Leu Ala Thr Pro Thr Gly Ala Pro Ala Ala Val Asp Phe Thr
 275 280 285
 Ile Gly Lys Leu Ala Phe Asp Pro Phe Ser Phe Leu Lys Arg Asp Phe
 290 295 300
 Val Ser Ala Ser Val Asn Ala Gly Thr Lys Asn Val Thr Leu Thr Gly
 305 310 315 320
 Ala Leu Val Leu Asp Glu His Asp Val Thr Asp Leu Tyr Asp Met Val
 325 330 335
 Ser Leu Gln Ser Pro Val Ala Ile Pro Ile Ala Val Phe Lys Gly Ala
 340 345 350
 Thr Val Thr Lys Thr Gly Phe Pro Asp Gly Glu Ile Ala Thr Pro Ser
 355 360 365
 His Tyr Gly Tyr Gln Gly Lys Trp Ser Tyr Thr Trp Ser Arg Pro Leu
 370 375 380
 Leu Ile Pro Ala Pro Asp Gly Gly Phe Pro Gly Gly Pro Ser Pro Ser

385 390 395 400
Ala Asn Thr Leu Tyr Ala Val Trp Asn Ser Asp Thr Leu Val Arg Ser
405 410 415
Thr Tyr Ile Leu Asp Pro Glu Arg Tyr Gly Glu Ile Val Ser Asn Ser
420 425 430
Leu Trp Ile Ser Phe Leu Gly Asn Gln Ala Phe Ser Asp Ile Leu Gln
435 440 445
Asp Val Leu Leu Ile Asp His Pro Gly Leu Ser Ile Thr Ala Lys Ala
450 455 460
Leu Gly Ala Tyr Val Glu His Thr Pro Arg Gln Gly His Glu Gly Phe
465 470 475 480
Ser Gly Arg Tyr Gly Gly Tyr Gln Val Arg Tyr Leu
485 490

<210>486

<211>264

<212>PRT

<213>Chlamydia pneumoniae

<400>486

Gly Leu Phe Arg Ser Leu Trp Arg Leu Pro Ser Ala Leu Ser Met Asn
1 5 10 15
Tyr Thr Asp His Thr Thr Leu Gly Leu Ser Phe Gly Gln Leu Tyr Gly
20 25 30
Lys Thr Asn Ala Asn Pro Tyr Asp Ser Arg Cys Ser Glu Gln Met Tyr
35 40 45
Leu Leu Ser Phe Phe Gly Gln Phe Pro Ile Val Thr Gln Lys Ser Glu
50 55 60
Ala Leu Ile Ser Trp Lys Ala Ala Tyr Gly Tyr Ser Lys Asn His Leu
65 70 75 80
Asn Thr Thr Tyr Leu Arg Pro Asp Lys Ala Pro Lys Ser Gln Gly Gln
85 90 95
Trp His Asn Asn Ser Tyr Tyr Val Leu Ile Ser Ala Glu His Pro Phe
100 105 110
Leu Asn Trp Cys Leu Leu Thr Arg Pro Leu Ala Gln Ala Trp Asp Leu
115 120 125
Ser Gly Phe Ile Ser Ala Glu Phe Leu Gly Gly Trp Gln Ser Lys Phe
130 135 140
Thr Glu Thr Gly Asp Leu Gln Arg Ser Phe Ser Arg Gly Lys Gly Tyr
145 150 155 160
Asn Val Ser Leu Pro Ile Gly Cys Ser Ser Gln Trp Phe Thr Pro Phe
165 170 175
Lys Lys Ala Pro Ser Thr Leu Thr Ile Lys Leu Ala Tyr Lys Pro Asp
180 185 190
Ile Tyr Arg Val Asn Pro His Asn Ile Val Thr Val Val Ser Asn Gln
195 200 205
Glu Ser Thr Ser Ile Ser Gly Ala Asn Leu Arg Arg His Gly Leu Phe
210 215 220
Val Gln Ile His Asp Val Val Asp Leu Thr Glu Asp Thr Gln Ala Phe
225 230 235 240
Leu Asn Tyr Thr Phe Asp Gly Lys Asn Gly Phe Thr Asn His Arg Val
245 250 255
Ser Thr Gly Leu Lys Ser Thr Phe
260

<210>487

<211>357

<212>PRT

<213>Chlamydia pneumoniae

<400>487

Asn Arg Gln Arg Leu His Ala Pro Leu Ser Gln Gly Ser His Cys His
1 5 10 15
Ser Tyr Leu Ala Asp Leu Thr His Glu Leu Lys Ile Leu Leu Phe
20 25 30
Ser Ala Phe Val Asp Ala Lys Asn Ile Ser Lys Lys Glu Leu Arg Glu
35 40 45
Val Ser Leu Asn Phe Ala Asn Asp Thr Ser Val Glu Ser Trp Leu Arg

50	55	60
Phe Leu Leu Leu Val	Ser Tyr Asp Glu Lys Glu	Lys Asp Val Val Val
65	70	75
Val Cys Asn His Ser	Glu Pro Asn Ile Leu Gly	Leu Pro Pro Glu Ala
85	90	95
Val Ser Gln Leu Ile	Glu Glu Leu Ser Asp	Glu Gly Tyr Ser Tyr Leu
100	105	110
Asn Val Val Arg Cys	Asp Leu Ser Gly Glu Thr	Thr Val Gln Gln Arg
115	120	125
Leu Leu Leu Asn Ala	Asp Glu Gly Arg Ser Met	Thr Val Val Ile Ser
130	135	140
Glu Leu Pro Glu Gly	His Pro Asp Ile Arg	Asn Leu Gln Leu Ala Ser
145	150	155
Glu Arg Ile Phe Val	Ser Arg Glu Lys Glu Ala	Ala Asp Ala Tyr Ala
165	170	175
Ser Gly Cys Lys Val	Val Ala Phe Asp Asp	Glu His Leu Pro Trp Val
180	185	190
Ser Ser His Ile Ala	Tyr Ala Glu Glu Ile Arg	Glu Lys Gln Glu Gln
195	200	205
Thr Met Gln Gly Ser	Leu Thr Glu Glu Gln Leu	Gly Ala Leu Leu Cys
210	215	220
Asn Thr Val Ser Thr	Glu Lys Asn Leu Ala Phe	Ala Leu Asp Ala Val
225	230	235
Ile Lys Gln Ser Val	Trp Arg Phe Arg Asn Pro	Asp Leu Phe Ala Tyr
245	250	255
Glu Arg Glu Ala Leu	Glu Ala Ser Val Thr	Asp Ala Leu Val Ser Tyr
260	265	270
Val Ser Asn Leu Asp	Met Ile Pro Tyr Thr	Ser Ser Gln Gly Ile Val
275	280	285
Ile Glu Asp Ser Ser	Ile Val Arg Thr Ser	Gln Glu His Thr Leu Ile
290	295	300
Val Asn Cys Ala Ala	Phe Asp Lys Leu Ala Ser	Gln Ile Glu Phe Leu
305	310	315
Cys Pro Ser Asp Val	Leu Pro Ile Ser Gly	Lys Asp Pro Leu Ile Ser
325	330	335
Asp Asp Glu Asp Glu	Glu Leu Asn Pro Lys	Val Ser Ser Ala Ala Asp
340	345	350
Ser Lys Asp Lys Thr		
355		

<210>498
 <211>347
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>466

Ile Pro Cys Thr Phe	Glu Ser Lys Arg Lys Phe	Leu Met Thr His Cys
1	5	10
Leu His Gly Trp Phe	Ser Val Val Arg His	His Phe Val Gln Ala Phe
20	25	30
Asn Phe Ser Arg Pro	Leu Tyr Ser Arg Ile	Thr His Phe Ala Leu Gly
35	40	45
Val Ile Lys Ala Ile	Pro Ile Val Gly His	Leu Val Met Gly Val Asp
50	55	60
Trp Leu Ile Ser His	Cys Phe Glu Arg Gly	Val Ser His Pro Gly Phe
65	70	75
Pro Ser Asp Ile Ala	Pro Ile Leu Lys Val	Glu Lys Ile Ala Gly Arg
85	90	95
Asp His Ile Ser Arg	Ile Glu Asn Gln Leu	Lys Ser Leu Arg Lys Thr
100	105	110
Ile Glu Val Glu Asp	Leu Asp Lys Val His	Gly Gln Tyr Gln Glu Asp
115	120	125
Pro Tyr Ala Asp Met	Ala Ser Ser Glu Val	Leu Lys Leu Asp Lys Gly
130	135	140
Val His Val Ser Glu	Leu Gly Lys Ala Phe	Ser Arg Val Arg Asn Arg
145	150	155
		160

Ile Thr Arg Ser Tyr Ser Tyr Ala Pro Thr Pro Gln Leu Asp Ser Ile
 165 170 175
 Ala Ile Val Gly Ile Asp Leu Val Ser Pro Glu Glu Gln Glu Asn Leu
 180 185 190
 Val Arg Leu Ala Asn Glu Val Ile Gln Leu Tyr Pro Lys Ser Lys Thr
 195 200 205
 Thr Leu Tyr Leu Leu Ile Asp Phe Asn Xaa Glu Trp Val Gly Asp Ile
 210 215 220
 Ser Ser Asp Lys Glu Lys Gln Leu Arg Ser Leu Gly Leu His Ser Glu
 225 230 235 240
 Val Gln Cys Leu Ser Val Leu Glu Pro Gln Gly Ala Glu Gly Glu Asp
 245 250 255
 Thr Lys His Phe Asp Leu Met Val Gly Cys Tyr Gly Lys Asp Ser Tyr
 260 265 270
 Leu Arg Glu Gly Lys Ile Leu Gln Gln Ala Leu Gly Thr Ser Leu Gly
 275 280 285
 Thr Val Pro Trp Val Asn Val Met His Thr Leu Pro Ser Arg Tyr Arg
 290 295 300
 Ser Arg Leu Ser Leu Pro Ile Asn Thr Glu Lys Asp Lys Thr Glu Leu
 305 310 315 320
 Tyr Lys Glu Ile Ser Arg Thr His His Gln Leu His Thr Leu Gly Met
 325 330 335
 Gly Leu Gly Ala Gln Asp Phe Arg Asp Cys Ser
 340 345

<210>489

<211>636

<212>PRT

<213>Chlamydia pneumoniae

<400>489

Val Phe Leu Pro Ser Arg Val Met Ala Ser Cys Leu Ser Ala Trp Phe
 1 5 10 15
 Ser Ile Val Arg Glu His Phe Tyr Arg Ala Phe Asp Phe Ser Leu Pro
 20 25 30
 Phe Cys Ala Arg Ile Thr Glu Phe Val Leu Gly Val Ile Lys Gly Ile
 35 40 45
 Pro Val Val Gly His Ile Ile Val Gly Ile Glu Trp Leu Val Ser Arg
 50 55 60
 Tyr Leu Glu Ser Phe Val Thr Lys Pro Thr Phe Val Ser Asp Val Val
 65 70 75 80
 Ser Leu Leu Lys Thr Glu Lys Val Ala Gly Arg Asp His Ile Ala Arg
 85 90 95
 Val Val Glu Thr Leu Lys Arg Gln Arg Val Ala Val Ala Pro Glu Asp
 100 105 110
 Glu Asp Lys Val His Gly Lys Ile Pro Val His Pro Phe Gly Gly Ile
 115 120 125
 Gln Pro Val Glu Val Leu Thr Leu Tyr Pro Glu Val Gln Asp Ala Thr
 130 135 140
 Leu Gly Leu Ala Phe Ser Lys Ile Arg Asn Arg Val Arg Gln Ala Tyr
 145 150 155 160
 Leu Gln Ala Pro Arg Pro Lys Leu Gln Lys Ile Tyr Ile Ile Gly Asn
 165 170 175
 Asp Met Asn Pro Phe Glu Val Asp Asp Phe Leu His Leu Ala Arg Leu
 180 185 190
 Cys Asn Glu Thr Gln Arg Leu Tyr Pro Asp Ala Thr Ile Ser Leu Tyr
 195 200 205
 Leu Thr Ala Ser Gly Gly Arg Asn Ala Met Asp Lys Lys Asn Arg Lys
 210 215 220
 Leu Leu Ser Asp Cys Glu Leu Asn Pro Lys Ile Ala Cys Leu Asp Phe
 225 230 235 240
 Asn Gln Gly Asp Val Val Lys Gln Ala Thr Cys Asp Cys Trp Met Val
 245 250 255
 Tyr His Gly Glu Asn Asp Gln Gly Thr Leu Asn Gln Ile Gln Glu Glu
 260 265 270
 Leu Glu Lys Ser Gly Glu Glu Thr Pro Trp Ile His Val Gly Gln Lys

275	280	285
Pro Leu Ser Gln Ser Leu Trp Asp Phe Ser Pro Phe Ser Ser Leu Glu		
290	295	300
Met Lys Gly Asp Lys Glu Lys Ala Leu Glu Tyr Ser Glu Leu Glu Lys		
305	310	315
Glu Gln Leu Tyr Ser Arg Leu Val Tyr Val Gly Glu Arg Ser Ser Val		
	325	330
Leu Ser Leu Gly Phe Gly Asp Ser Arg Ser Gly Ile Leu Met Asp Pro		
	340	345
Lys Arg Val His Ala Pro Leu Ser Glu Gly His Tyr Cys His Ser Tyr		
	355	360
Leu Ala Asp Leu Glu Asn Pro Gly Leu Gln Lys Thr Ile Leu Ala Ala		
	370	375
Phe Leu Asn Pro Lys Glu Leu Ser Ser Thr Ile Leu Gln Pro Ile Ser		
385	390	395
Leu Asn Leu Ile Leu Asn Ser Lys Thr Tyr Leu Arg Gln His Phe Gly		
	405	410
Phe Phe Glu Arg Met Ser Arg Ser Asp Arg Asn Val Val Val Val Val		
	420	425
Cys Asp Ser Trp Trp Gly Thr Asp Trp Lys Glu Glu Pro Ser Phe Gln		
	435	440
His Phe Ile Met Glu Leu Glu Cys Arg Gly Tyr Ser His Phe Asn Ile		
	450	455
Phe Ala Phe Arg Ser Asn Ser Met Cys Val Glu Glu Arg Arg Ile Leu		
465	470	475
Asn Glu Ser Ser Gln Glu Lys Ala Phe Thr Met Ile Phe Cys Glu Asp		
	485	490
Ser Val Ser Gln Gly Asp Ile Arg Cys Leu His Leu Ala Ser Glu Gly		
	500	505
Met Leu Cys Gly Lys Glu Cys Tyr Ala Val Asp Val Tyr Thr Ser Gly		
	515	520
Cys Ala Asn Phe Met Met Glu Glu Val Leu Thr Leu Glu Arg Glu Ser		
	530	535
Asn Leu Trp Asn Arg Lys His Gly Leu Trp Lys Arg Glu Val Arg Lys		
545	550	555
Gln Lys Gln Glu Ala Ala Leu Asp Gln Asp Glu Ser Glu Ile Tyr Val		
	565	570
Cys Asn Gln Leu Thr Ala Gln Gln Asn Phe Ala Cys Ser Leu Asp Ala		
	580	585
Ala Ile Arg Gln Ser Ile Trp Arg Ser Arg Met Pro Glu Leu Leu Ser		
	595	600
Ile Glu Arg Arg Ala Leu Gly Glu Gln Leu Phe Thr Thr Val His His		
	610	615
Tyr Leu Thr Thr Gln Lys Lys Ile Leu Arg Gly Ile		
625	630	635

<210>490

<211>703

<212>PRT

<213>Chlamydia pneumoniae

<400>490

Tyr Phe Leu Cys Cys Tyr Leu Lys Leu Phe Val Ser Asn Phe Ile Phe		
1	5	10
Phe Val Xaa Met Pro Ile Pro Tyr Ile Ser Ser Trp Ile Ser Thr Val		
	20	25
Arg Gln His Phe Val Lys Ala Phe Asp Phe Ser Arg Pro Phe Cys Ser		
	35	40
Arg Val Thr Asn Phe Ala Leu Gly Val Ile Lys Ala Ile Pro Ile Val		
	50	55
Gly His Ile Val Met Gly Met Glu Trp Leu Val Ser Ser Cys Val Ala		
	65	70
Gly Ile Ile Thr Arg Ser Ser Phe Thr Ser Asp Val Val Gln Ile Val		
	85	90
Lys Thr Glu Lys Ala Leu Gly Arg Asp His Ile Ser Arg Val Ala Glu		
	100	105
		110

Ile	Leu	Gln	Arg	Glu	Arg	Gly	Thr	Ile	Thr	Pro	Glu	Asn	Gln	Asp	Lys	
	115						120					125				
Val	His	Gly	Lys	Phe	Pro	Val	Cys	Pro	Phe	Gly	Arg	Leu	Lys	Ser	Glu	
	130						135				140					
Glu	Thr	Leu	Lys	Leu	Lys	Pro	Gly	Glu	Arg	Gly	Gly	Thr	Leu	Asp	Thr	
145					150					155					160	
Val	Phe	Ser	Pro	Ile	Arg	Thr	Arg	Val	Thr	Arg	Ala	Tyr	Leu	Gln	Ala	
				165					170					175		
Pro	Arg	Pro	Glu	Ile	Arg	Thr	Ile	Ser	Ile	Val	Gly	Ser	Lys	Leu	Lys	
			180				185						190			
Thr	Pro	Gln	Asp	Phe	Ser	Gln	Phe	Val	Ser	Leu	Ala	Asn	Glu	Thr	Gln	
	195						200					205				
Arg	Leu	His	Pro	Glu	Ala	Leu	Val	Cys	Leu	Tyr	Leu	Thr	Gly	Leu	Asn	
	210					215					220					
Arg	Glu	Ser	Gln	Met	Cys	Asp	Thr	Thr	Thr	Ala	Glu	Lys	Lys	Gln	Tyr	
225					230					235					240	
Leu	His	Asn	Ser	Gly	Leu	Asp	Ser	Arg	Ile	Gln	Cys	Lys	Asp	Ser	Lys	
				245					250					255		
Glu	Asp	Asp	Ala	Gly	Ser	Pro	Glu	Asn	Pro	Glu	Leu	Trp	Ile	Gly	Tyr	
			260				265						270			
Tyr	Ser	Arg	Glu	Gln	Gln	His	Asn	Ile	Asp	Gly	Gln	Tyr	Ile	Gln	Gln	
		275					280					285				
Cys	Leu	Gly	Lys	Ser	Ala	Asp	Pro	Ile	Pro	Trp	Ile	His	Val	Thr	Glu	
	290					295					300					
Asp	Thr	Lys	Asp	Phe	Tyr	Tyr	Pro	Pro	Asn	Phe	Thr	Ser	Tyr	Ser	His	
305					310					315					320	
Thr	Arg	Gln	Ser	Thr	Asp	Pro	Thr	Ser	Pro	Pro	Arg	Leu	Pro	Glu	Ser	
				325					330					335		
Glu	Gly	Asp	Lys	Asp	Ser	Leu	Tyr	Gly	Gln	Leu	Ser	Arg	Ser	Tyr	His	
			340					345					350			
His	Glu	Tyr	Met	Leu	Gly	Leu	Gly	Leu	Lys	Pro	Glu	Asp	Ala	Gly	Leu	
	355						360					365				
Leu	Met	Asp	Pro	Asp	Arg	Ile	Tyr	Ala	Pro	Leu	Ser	Gln	Gly	His	Tyr	
	370					375					380					
Cys	His	Ser	Tyr	Leu	Ala	Asp	Ile	Glu	Asn	Glu	Asp	Leu	Arg	Thr	Leu	
385					390					395					400	
Val	Leu	Ser	Pro	Phe	Leu	Asp	Pro	Gly	Asn	Leu	Ser	Ser	Glu	Asp	Leu	
				405					410					415		
Arg	Pro	Val	Ala	Phe	Asn	Ile	Ala	Arg	Leu	Pro	Leu	Glu	Leu	Asp	Ser	
			420					425						430		
Leu	Phe	Phe	Arg	Leu	Val	Ala	Gly	Gln	Gln	Glu	Gly	Arg	Asn	Ile	Val	
	435						440						445			
Thr	Leu	Ala	His	Gly	Thr	Pro	Arg	Pro	Glu	Asp	Leu	Asp	Pro	Asp	Ser	
	450					455					460					
Met	Asn	Ile	Leu	Thr	Arg	Arg	Leu	Gln	Met	Ser	Gly	Tyr	Ser	Tyr	Leu	
465					470					475					480	
Asn	Ile	Phe	Ser	Tyr	Lys	Ser	Arg	Lys	Met	Ile	Val	Lys	Glu	Arg	Gln	
				485					490					495		
Phe	Phe	Gly	Asp	Arg	Ser	Glu	Gly	Lys	Ser	Phe	Thr	Leu	Ile	Leu	Phe	
			500					505					510			
Glu	Asp	Pro	Ile	Ser	Ala	Ala	Asp	Phe	Arg	Cys	Leu	Gln	Leu	Ala	Ala	
			515				520					525				
Glu	Gly	Met	Val	Ala	Lys	Asp	Leu	Pro	Ser	Val	Ala	Asp	Ile	Cys	Ala	
	530					535					540					
Ser	Gly	Cys	Ser	Cys	Ile	Gln	Phe	Ser	Glu	Met	Gln	Ser	Pro	Gln	Ala	
545					550					555					560	
Ile	Glu	Tyr	Arg	Gln	Trp	Glu	Ala	Arg	Val	Glu	Asp	Glu	Ala	Gly	Glu	
				565					570					575		
Glu	Ala	Arg	Glu	Pro	Val	Ile	Tyr	Ser	Gln	Asp	Gln	Leu	Ser	Ser	Met	
			580					585					590			
Leu	Thr	Thr	Gln	Gln	Asn	Phe	Val	Phe	Ser	Leu	Asp	Ala	Val	Val	Lys	
			595				600					605				
Gln	Ala	Ile	Trp	Arg	Phe	Arg	Ser	Lys	Gly	Leu	Leu	Thr	Met	Glu	Arg	
	610					615						620				

Lys Ala Leu Gly Glu Glu Phe Leu Thr Ala Ile Phe Ser Tyr Leu Gly
 625 630 635 640
 Ser Gln Glu Arg Asn Glu Asn Met Gly Lys Arg Thr Thr Glu Glu His
 645 650 655
 Glu Val Val Ile Ser Phe Glu Glu Leu Asp Arg Met Val Gln Val Leu
 660 665 670
 Pro Ala Glu Val Pro Ala Asp Ser Gly Asn Asp Pro Thr His Pro Val
 675 680 685
 Pro Asn Pro Asp Ser Asn Pro Asp Ser Ser Gln Asn Glu Gly Ser
 690 695 700

<210>491

<211>148

<212>PRT

<213>Chlamydia pneumoniae

<400>491

Ser Thr Lys Ile Gln Met His Pro Gly Leu Arg Asn Trp Arg Thr Ser
 1 5 10 15
 Thr Asn Lys Leu Arg Glu Glu Gly Ser Val Ser Phe Arg Glu Tyr Phe
 20 25 30
 Arg Ala Tyr Met Cys Asp Lys Ile Val Ala Gln Lys Asn Phe Leu Phe
 35 40 45
 Thr Leu Asp Ala Val Ile Lys Gln Ala Gly Trp Arg Ser Gln Glu Lys
 50 55 60
 Leu Asn Leu Phe Tyr Val Glu Ser Gln Ala Leu Gly Arg Glu Ile Lys
 65 70 75 80
 Val Ser Leu Glu Glu Tyr Ile Gln Ser Met Val Gly Ile Leu Gly Ser
 85 90 95
 Gln Arg Thr Lys Lys Ser Phe Lys Phe Ser Val Asp Phe Thr Pro Leu
 100 105 110
 Glu Gln Ala Leu Gln Glu Arg Cys Ser Ser Asp Asp Asp Glu Asp Ala
 115 120 125
 Thr Ala Ala Ser Thr Ala Thr Gly Ala Thr Ala Ser Pro Thr Asp Met
 130 135 140
 His Glu Asp Glu
 145

<210>492

<211>283

<212>PRT

<213>Chlamydia pneumoniae

<400>492

Val Ile Gln His Leu Leu Asn Phe Ala Leu Glu Glu Thr Pro Ser Ile
 1 5 10 15
 Ser Val Gln Tyr Gln Glu Gln Glu Lys Leu Ser Pro Cys Asp His Ser
 20 25 30
 Pro Glu Ile Gly Lys Lys Lys Arg Trp Asn Lys Leu Glu Ser Phe Ser
 35 40 45
 Thr Tyr Cys Ser Leu Phe Met Ser Val Lys Asp His Tyr Lys Leu Asn
 50 55 60
 Leu Gly Ile Gln Asn Ser Leu Ser Gly Trp Leu Leu Asp Pro Tyr Arg
 65 70 75 80
 Val Cys Ala Pro Leu Ser Ser Pro Tyr Ser Cys Pro Ser Tyr Leu Leu
 85 90 95
 Asp Leu Gln Asn Lys Glu Leu Arg Arg Ser Leu Leu Ser Thr Phe Leu
 100 105 110
 Asp Pro Lys Asn Leu Thr Ser Glu Thr Phe Arg Ser Val Ser Ile Asn
 115 120 125
 Phe Gly Asn Ser Ser Phe Gly Gln Arg Trp Ser Glu Phe Leu Ser Arg
 130 135 140
 Val Leu His Asp Glu Lys Glu Lys His Val Ala Val Val Cys Asn Asp
 145 150 155 160
 Ala Lys Leu Leu Glu Glu Gly Leu Ser Pro Glu Ala Leu Ser Leu Leu
 165 170 175
 Glu Glu Asp Leu Arg Glu Ser Gly Tyr Ser Tyr Leu Asn Ile Leu Ser
 180 185 190

Val Ser Pro Glu Gly Val Ser Lys Val Gln Glu Arg Gln Ile Leu Arg
 195 200 205
 Arg Asp Leu Gln Gly Arg Ser Phe Thr Val Met Ile Thr Asp Leu Pro
 210 215 220
 Leu Gly Ser Glu Asp Ile Arg Ser Leu Gln Leu Ala Ser Asp Arg Ile
 225 230 235 240
 Leu Val Ser Ser Ser Leu Asp Ala Ala Asp Ala Cys Ala Ser Gly Cys
 245 250 255
 Lys Val Leu Val Tyr Glu Asn Pro Asn Ala Ser Trp Ala Gln Glu Leu
 260 265 270
 Glu Asn Phe Tyr Lys Gln Val Glu Arg Arg Arg
 275 280

<210>493

<211>169

<212>PRT

<213>Chlamydia pneumoniae

<400>493

Leu Glu Ser Pro His Phe Pro Arg Arg Ser Arg Gln Ser Thr Arg Glu
 1 5 10 15
 Asn Pro Arg Arg Ser Leu Arg Arg Tyr His Thr His Arg Asn Cys Pro
 20 25 30
 Thr Phe Ser Leu Ile Glu Glu Leu Ser Thr Val Asp Glu Ala Leu Gln
 35 40 45
 Gly Val Arg Ser Arg Leu Thr Tyr Ala Tyr Arg Ser Val Glu Lys Pro
 50 55 60
 Met Ile Gln Asp Leu Ala Leu Val Gly Phe Gly Leu Arg Asp Ser Ala
 65 70 75 80
 Asp Leu Ile Asn Phe Val Arg Leu Ala Asn Gly Val Gln Asn His Tyr
 85 90 95
 Pro His Thr Lys Val Lys Leu Tyr Leu Ala Lys Asn Leu Ala Asp Val
 100 105 110
 Trp Asp Cys Glu Ile Ser Glu Glu Lys Gly Gln Leu Arg Ala Leu
 115 120 125
 Gly Leu Asp Pro Lys Ile Glu Ser Ile Ser Leu Thr Ser Ala Gly Leu
 130 135 140
 Pro Ser Val Pro Glu Val Ala Thr Val Asp Phe Met Ile Thr Cys Tyr
 145 150 155 160
 Gly Lys Asp Gln Glu Val Gln Asp Pro
 165

<210>494

<211>135

<212>PRT

<213>Chlamydia pneumoniae

<400>494

Ile Ser Thr Val Ala Cys Pro Ser Ile Ser Ser Trp Phe Thr Val Val
 1 5 10 15
 Arg Gln His Phe Val Asn Ala Phe Asp Phe Thr His Pro Val Cys Ser
 20 25 30
 Arg Ile Thr Asn Phe Ala Leu Gly Ile Ile Lys Ala Ile Pro Val Leu
 35 40 45
 Gly His Ile Val Met Gly Ile Glu Trp Leu Ile Ser Trp Ile Pro Arg
 50 55 60
 His Thr Val Arg His Gly Met Phe Thr Ser Asp Val Ser Ser Ala Ile
 65 70 75 80
 Lys Val Glu Gln Thr Arg Gly His Asn Cys Leu Ala Pro Leu Glu Ala
 85 90 95
 Tyr Leu Ser Ser Leu Arg Val Pro Ile Ser Gln Glu Asp Leu Gly Lys
 100 105 110
 Val His Gly Arg Thr Pro Glu Asp Pro Phe Val Asp Ile Thr Pro Thr
 115 120 125
 Glu Ile Val Gln Pro Ser Pro
 130 135

<210>495

<211>156

<212>PRT

<213>Chlamydia pneumoniae

<400>495

Phe Leu Ser Ala Leu Asp Ala Ala Asp Ala Cys Ala Ser Glu Cys Lys
 1 5 10 15
 Ile Leu Glu Tyr Glu Asp Pro Glu Gln Glu Trp Ala Gln Gln Tyr Ala
 20 25 30
 Ser Phe Tyr Arg Asn Ile Asp Arg Ala Gly Asp Leu Gln Arg Gln Gly
 35 40 45
 Ile Pro Gly Glu Pro Leu Gly Val Ser Ala Ser Thr Arg Val Val Leu
 50 55 60
 Glu Lys Asp Ile Val Phe Asn Leu Asn Ala Val Ile Gln Gln Ala Met
 65 70 75 80
 Trp Lys Phe Lys Lys Arg Asp Leu Phe Ala Val Glu Ser Gln Ala Leu
 85 90 95
 Gly Asp Asp Met Arg Arg Ala Leu Glu Gly Tyr Ile Gly Ser Ser Leu
 100 105 110
 Leu Val Glu Gly Thr Ile Gln Pro Gln Val Ala Cys Asn Val Asn Val
 115 120 125
 Ser Phe Ala Thr Leu Asp Glu Ala Val Cys Ala Ala Cys Asp Ser Ala
 130 135 140
 Gln Asp Ala Pro Ser Glu Glu Asn Asn Thr Asp Asp
 145 150 155

<210>496

<211>542

<212>PRT

<213>Chlamydia pneumoniae

<400>496

Leu Ile Phe Tyr Leu Phe Leu Asn Leu Tyr Ile Ala Cys Val Arg Phe
 1 5 10 15
 His Phe Gln Cys Trp Phe Asp Pro Met Ala Cys Tyr Ile Ser Ile Trp
 20 25 30
 Ile Ser Thr Val Lys Gln His Phe Ile Arg Ala Phe Asp Phe Thr Arg
 35 40 45
 Pro Leu Gly Ser Arg Ile Thr Asn Phe Ala Leu Gly Val Ile Lys Ala
 50 55 60
 Ile Pro Ile Leu Gly Cys Val Val Ile Gly Val Ser Trp Leu Val Ser
 65 70 75 80
 Thr Cys Ser Ala Arg Arg Phe Gly Lys Pro Ala Phe Thr Ser Asp Val
 85 90 95
 Ala Ser Ile Val Lys Ile Glu Lys Thr Arg Gly Tyr Asn Pro Leu Ala
 100 105 110
 Trp Val Glu Gln Tyr Leu Arg Gln Leu Arg Val Arg Leu Pro Glu Gly
 115 120 125
 Asp Leu Gly Lys Ile His Gly Lys Val Ser Arg Asp Tyr Val Cys Asp
 130 135 140
 Arg Thr Pro Gln Glu Asn Leu Asn Met Val Pro His Gln Tyr Leu Gly
 145 150 155 160
 Glu Leu Gly Arg Ala Phe Tyr Gly Ile Arg Asn Arg Val Thr Lys Ala
 165 170 175
 Tyr Gln Arg Val Thr Pro Leu Glu Val Pro Cys Leu Thr Leu Val Gly
 180 185 190
 Phe Asp Ile Leu Asp Pro Glu Asp Gln Val Asn Phe Val Arg Leu Ala
 195 200 205
 Asn Gly Ile Gln Thr Gln Tyr Pro Gln Thr Gln Ile Lys Leu Tyr Leu
 210 215 220
 Ile Ser Ile Gln Lys Ile Trp Asn Gln Cys Asp Gly Thr Ile Ser Gln
 225 230 235 240
 Glu Lys Glu Gln Gln Leu Arg Ser Leu Gly Leu Asp Ala Lys Ile Lys
 245 250 255
 Cys Val Ser Ala Pro Ala Leu Leu Leu Gln Lys Tyr Leu Gln Ser Glu
 260 265 270
 Asn Leu Pro Ser Cys Asp Leu Leu Ile Asn Tyr Tyr Gly Lys Gln Gln
 275 280 285

Ser Val Arg Asp Val Asp Ser Ile Lys Ser Leu Leu Asn Leu Ser Ser
 290 295 300
 Glu His Ile Pro Ala Ile Ser Val Thr Tyr Arg Pro Asp Asp Pro Phe
 305 310 315 320
 Tyr Ser Tyr Tyr Phe Phe Pro Gly Ser Gln Gly Gly Thr Ala Pro Asp
 325 330 335
 Gln Arg Ile Pro Trp Ser Glu Gln Glu His Leu Gln Thr Tyr Thr Thr
 340 345 350
 Leu Ser Asn Pro Arg Cys Asp Arg Tyr Ala Val His Leu Gly Met Glu
 355 360 365
 Asp Phe Ala Ser Gly Val Phe Leu Asp Pro Leu Arg Val Ser Ala Pro
 370 375 380
 Leu Ser Gly Glu Tyr Ser Cys Pro Ser Tyr Leu Leu Asp Leu Lys Ser
 385 390 395 400
 Glu Glu Leu Arg Cys Phe Leu Leu Ser Ala Phe Ile Asp Pro Asn Asn
 405 410 415
 Ser Gly Gln Gly Asn Pro Arg Pro Met Ser Ile Asn Phe Gly Asn Ser
 420 425 430
 Pro Leu Gly Gln Arg Trp Ser Glu Phe Leu Ser Arg Val Leu His Asp
 435 440 445
 Glu Thr Glu Lys His Val Ala Val Val Cys Asn Asn Pro Gln Leu Ile
 450 455 460
 Lys Lys Ser Phe Pro Ser His Ser Leu Ser Leu Leu Glu Asn Glu Leu
 465 470 475 480
 Glu Glu Ser Gly Tyr Ser Tyr Leu Asn Ile Val Ser Val Ser Gln Glu
 485 490 495
 Arg Thr Cys Val Lys Glu Arg Arg Ile Leu Ser Ser Asp Pro Ser Gly
 500 505 510
 Arg Ser Phe Thr Val Ile Leu Thr Asp Leu Pro Glu Gly Ser Ser Asp
 515 520 525
 Ile Arg Asn Leu Gln Leu Ala Ser Asp Arg Ile Leu Val Ser
 530 535 540

<210>497

<211>430

<212>PRT

<213>Chlamydia pneumoniae

<400>497

Leu Ser Ser Pro Tyr Glu Lys Thr Glu Gln Leu Leu Gly Thr Pro Asn
 1 5 10 15
 Cys Arg Thr Pro Arg Val Asn Ile Ser Thr Val Gly Ile Pro Ile Asp
 20 25 30
 Glu Thr Ser Asn Ala Phe Val Asp Ser Met Met Lys Gln Gly Val Gly
 35 40 45
 Gln Asp Ala Lys Glu Leu Tyr Thr Phe Leu Ser Arg Gly Asn Glu His
 50 55 60
 Tyr Gln Pro Cys Leu Trp Phe Ser Leu Glu Glu Leu Gly Phe Leu
 65 70 75 80
 Phe Asp Glu Lys Met Leu Cys Ala Pro Leu Ser Glu Asp His Tyr Cys
 85 90 95
 His Ser Tyr Leu Val Asp Leu Val Asp Gln His Leu Lys Asp Leu Ile
 100 105 110
 Leu Ser Met Phe Leu Asp Pro Gln Asn Ile Ser Ala Gly Glu Leu Leu
 115 120 125
 Lys Val Ser Ile Asn Val Gly Asp Ser Phe Ser Pro Leu Gln Gln Lys
 130 135 140
 Asp Phe Leu Ser Met Val Leu Arg Asp Glu Thr Gly Lys Asn Val Val
 145 150 155 160
 Val Val Phe Lys Gly Val Leu Ser Leu Pro Ala Thr Gln Val Cys Lys
 165 170 175
 Leu Val Glu Glu Leu Asn Ser Lys Asp Tyr Ser Tyr Leu Asn Ile Phe
 180 185 190
 Ser Cys His Gly Asp Ser Ser Pro Gln Leu Leu Phe Arg Lys Glu Leu
 195 200 205
 Glu Gly Thr Ser Gly Arg Tyr Phe Thr Val Ile Cys Ala Leu Tyr Leu

310	215	220
Gly Asp Thr Asp Met Arg Ser Leu Gln Leu Ala Ser Glu Arg Ile Met		
225	230	235
Val Ser Arg Glu Phe Asp Leu Val Asp Ala Tyr Ala Ala Arg Cys Lys		
245	250	255
Leu Leu Lys Ile Asp His Thr Asn Trp Arg Pro Gly Thr Phe Ser Arg		
260	265	270
His Ala Asp Phe Ala Asp Ala Val Asp Val Ser Ala Gly Phe Asn Ser		
275	280	285
Arg Glu Phe Lys Leu Ile Thr Gln Ala Asn Gln Gly Ile Leu Glu Ser		
290	295	300
Gly Glu Leu Pro Leu Pro Ser Lys Thr Phe Trp Glu Gly Phe Leu Ala		
305	310	315
Phe Cys Asp Arg Val Thr Val Thr Arg His Phe Ile Pro Met Leu Asp		
325	330	335
Ala Ala Ile Lys Gln Ala Val Trp Thr His Lys His Pro Ser Leu Ile		
340	345	350
Asp Lys Glu Cys Glu Ala Leu Asp Leu Lys Thr Gln Cys Leu Pro Ser		
355	360	365
Ile Val Ser Tyr Leu Glu Tyr Val Thr Asn Ser His Glu Lys Thr Ser		
370	375	380
Lys Gly Pro Phe Ile Gln Lys Glu Ile Ile Ala Asp Cys Ser Pro Leu		
385	390	395
Lys Glu Ala Leu Phe Pro Gly Ser Asp Glu Asp Val Pro Ser Thr Ser		
405	410	415
Glu Asp Pro Ser Asp Asp His Pro Ser Asp Leu Glu Asp Ser		
420	425	430

<210>499

<211>186

<212>PRT

<213>Chlamydia pneumoniae

<400>498

Ser Leu Glu Thr Arg Gly Arg Phe Ala Glu Ile Cys Leu Gln Leu Leu		
1	5	10
Phe Phe Asp Ile Gln Ser Leu Lys Phe Leu Gln Leu Phe Ser Glu Gly		
20	25	30
Thr Ala Leu Asn Leu Phe Arg Ile Phe Ala Pro Leu Arg Asn Arg Val		
35	40	45
Thr Thr Glu Tyr Ser Arg Ala Arg Gln Pro Asp Leu His Arg Ile Ala		
50	55	60
Ile Val Tyr Ile Gly Val Leu Asp Ser Glu Ser Ser Lys Ile Leu Glu		
65	70	75
Arg Leu Ile Ser Tyr Met Ser Cys Ile Tyr Ser Glu Ser Gln Met Tyr		
85	90	95
Leu Arg Phe Phe Met Gly Lys Asn Val Asn Gln Ser Ala Val Leu Ser		
100	105	110
Lys Leu His Val Glu Asn Leu His Ile Arg Cys Gly Phe Phe Ser Glu		
115	120	125
Asp Ala Val Pro Glu Ser Glu Pro Phe Asp Leu Ser Ile Tyr Val His		
130	135	140
Thr Asp Arg Ser Cys Pro Leu Pro Thr Lys Lys Arg Ser Ser Ser Trp		
145	150	155
Glu Leu Gln Thr Val Glu Leu Pro Glu Ser Ile Tyr Pro Gln Ser Glu		
165	170	175
Phe Leu Leu Met Arg Pro Arg Met Leu Ser		
180	185	

<210>499

<211>136

<212>PRT

<213>Chlamydia pneumoniae

<400>499

Leu Leu Glu Asn Asn Arg Phe Phe Leu Phe Phe Lys Val Lys Tyr Phe		
1	5	10
Leu Lys Asp Ser Phe Leu Met Ser Tyr Tyr Phe Ser Leu Trp Tyr Leu		

20 25 30
 Lys Val Gln Gln His Phe Gln Ala Ala Phe Asp Phe Thr Arg Ser Leu
 35 40 45
 Cys Ser Arg Ile Ser Asn Phe Ala Leu Gly Val Ile Ala Leu Leu Pro
 50 55 60
 Ile Ile Gly Gln Leu Tyr Val Gly Leu Asp Trp Leu Leu Ser Arg Ile
 65 70 75 80
 Lys Lys Pro Glu Phe Pro Ser Asp Val Asp Gln Ile Val Arg Val Glu
 85 90 95
 His Val Val Gly His Asp His Arg Ser Arg Val Glu Asp Ile Leu Lys
 100 105 110
 Arg Gln Arg Leu Ser Leu Glu Pro Arg Asp Glu Gly Lys Val Arg Gly
 115 120 125
 Asp Leu Pro Ser Ala Pro Phe Phe
 130 135
 <210>500
 <211>940
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>500
 Thr Ser Met Arg Phe Phe Cys Phe Gly Met Leu Leu Pro Phe Thr Phe
 1 5 10 15
 Val Leu Ala Asn Glu Gly Leu Gln Leu Pro Leu Glu Thr Tyr Ile Thr
 20 25 30
 Leu Ser Pro Glu Tyr Gln Ala Ala Pro Gln Val Gly Phe Thr His Asn
 35 40 45
 Gln Asn Gln Asp Leu Ala Ile Val Gly Asn His Asn Asp Phe Ile Leu
 50 55 60
 Asp Tyr Lys Tyr Tyr Arg Ser Asn Gly Gly Ala Leu Thr Cys Lys Asn
 65 70 75 80
 Leu Leu Ile Ser Glu Asn Ile Gly Asn Val Phe Phe Glu Lys Asn Val
 85 90 95
 Cys Pro Asn Ser Gly Gly Ala Ile Tyr Ala Ala Gln Asn Cys Thr Ile
 100 105 110
 Ser Lys Asn Gln Asn Tyr Ala Phe Thr Thr Asn Leu Val Ser Asp Asn
 115 120 125
 Pro Thr Ala Thr Ala Gly Ser Leu Leu Gly Gly Ala Leu Phe Ala Ile
 130 135 140
 Asn Cys Ser Ile Thr Asn Asn Leu Gly Gln Gly Thr Phe Val Asp Asn
 145 150 155 160
 Leu Ala Leu Asn Lys Gly Gly Ala Leu Tyr Thr Glu Thr Asn Leu Ser
 165 170 175
 Ile Lys Asp Asn Lys Gly Pro Ile Ile Ile Lys Gln Asn Arg Ala Leu
 180 185 190
 Asn Ser Asp Ser Leu Gly Gly Gly Ile Tyr Ser Gly Asn Ser Leu Asn
 195 200 205
 Ile Glu Gly Asn Ser Gly Ala Ile Gln Ile Thr Ser Asn Ser Ser Gly
 210 215 220
 Ser Gly Gly Gly Ile Phe Ser Thr Gln Thr Leu Thr Ile Ser Ser Asn
 225 230 235 240
 Lys Lys Leu Ile Glu Ile Ser Glu Asn Ser Ala Phe Ala Asn Asn Tyr
 245 250 255
 Gly Ser Asn Phe Asn Pro Gly Gly Gly Gly Leu Thr Thr Thr Phe Cys
 260 265 270
 Thr Ile Leu Asn Asn Arg Glu Gly Val Leu Phe Asn Asn Asn Gln Ser
 275 280 285
 Gln Ser Asn Gly Gly Ala Ile His Ala Lys Ser Ile Ile Ile Lys Glu
 290 295 300
 Asn Gly Pro Val Tyr Phe Leu Asn Asn Thr Ala Thr Arg Gly Gly Ala
 305 310 315 320
 Leu Leu Asn Leu Ser Ala Gly Ser Gly Asn Gly Ser Phe Ile Leu Ser
 325 330 335
 Ala Asp Asn Gly Asp Ile Ile Phe Asn Asn Asn Thr Ala Ser Lys His
 340 345 350

Ala	Leu	Asn	Pro	Pro	Tyr	Arg	Asn	Ala	Ile	His	Ser	Thr	Pro	Asn	Met
355							360					365			
Asn	Leu	Gln	Ile	Gly	Ala	Arg	Pro	Gly	Tyr	Arg	Val	Leu	Phe	Tyr	Asp
370						375					380				
Pro	Ile	Glu	His	Glu	Leu	Pro	Ser	Ser	Phe	Pro	Ile	Leu	Phe	Asn	Phe
385					390					395					400
Glu	Thr	Gly	His	Thr	Gly	Thr	Val	Leu	Phe	Ser	Gly	Glu	His	Val	His
				405					410						415
Gln	Asn	Phe	Thr	Asp	Glu	Met	Asn	Phe	Phe	Ser	Tyr	Leu	Arg	Asn	Thr
			420					425					430		
Ser	Glu	Leu	Arg	Gln	Gly	Val	Leu	Ala	Val	Glu	Asp	Gly	Ala	Gly	Leu
		435					440					445			
Ala	Cys	Tyr	Lys	Phe	Phe	Gln	Arg	Gly	Gly	Thr	Leu	Leu	Leu	Gly	Gln
450						455					460				
Gly	Ala	Val	Ile	Thr	Thr	Ala	Gly	Thr	Ile	Pro	Thr	Pro	Ser	Ser	Thr
465					470					475					480
Pro	Thr	Thr	Val	Gly	Ser	Thr	Ile	Thr	Leu	Asn	His	Ile	Ala	Ile	Asp
				485					490						495
Leu	Pro	Ser	Ile	Leu	Ser	Phe	Gln	Ala	Gln	Ala	Pro	Lys	Ile	Trp	Ile
		500					505						510		
Tyr	Pro	Thr	Lys	Thr	Gly	Ser	Thr	Tyr	Thr	Glu	Asp	Ser	Asn	Pro	Thr
	515						520					525			
Ile	Thr	Ile	Ser	Gly	Thr	Leu	Thr	Leu	Arg	Asn	Ser	Asn	Asn	Glu	Asp
530					535						540				
Pro	Tyr	Asp	Ser	Leu	Asp	Leu	Ser	His	Ser	Leu	Glu	Lys	Val	Pro	Leu
545					550					555					560
Leu	Tyr	Ile	Val	Asp	Val	Ala	Ala	Gln	Lys	Ile	Asn	Ser	Ser	Gln	Leu
			565						570					575	
Asp	Leu	Ser	Thr	Leu	Asn	Ser	Gly	Glu	His	Tyr	Gly	Tyr	Gln	Gly	Ile
			580					585					590		
Trp	Ser	Thr	Tyr	Trp	Val	Glu	Thr	Thr	Thr	Ile	Thr	Asn	Pro	Thr	Ser
	595					600						605			
Leu	Leu	Gly	Ala	Asn	Thr	Lys	His	Lys	Leu	Leu	Tyr	Ala	Asn	Trp	Ser
610					615						620				
Pro	Leu	Gly	Tyr	Arg	Pro	His	Pro	Glu	Arg	Arg	Gly	Glu	Phe	Ile	Thr
625					630					635					640
Asn	Ala	Leu	Trp	Gln	Ser	Ala	Tyr	Thr	Ala	Leu	Ala	Gly	Leu	His	Ser
				645					650					655	
Leu	Ser	Ser	Trp	Asp	Glu	Glu	Lys	Gly	His	Ala	Ala	Ser	Leu	Gln	Gly
			660					665					670		
Ile	Gly	Leu	Leu	Val	His	Gln	Lys	Asp	Lys	Asn	Gly	Phe	Lys	Gly	Phe
	675					680						685			
Arg	Ser	His	Met	Thr	Gly	Tyr	Ser	Ala	Thr	Thr	Glu	Ala	Thr	Ser	Ser
	690				695						700				
Gln	Ser	Pro	Asn	Phe	Ser	Leu	Gly	Phe	Ala	Gln	Phe	Phe	Ser	Lys	Ala
705					710					715					720
Lys	Glu	His	Glu	Ser	Gln	Asn	Ser	Thr	Ser	Ser	His	His	Tyr	Phe	Ser
			725						730					735	
Gly	Met	Cys	Ile	Glu	Asn	Thr	Leu	Phe	Lys	Glu	Trp	Ile	Arg	Leu	Ser
			740					745					750		
Val	Ser	Leu	Ala	Tyr	Met	Phe	Thr	Ser	Glu	His	Thr	His	Thr	Met	Tyr
	755						760					765			
Gln	Gly	Leu	Leu	Glu	Gly	Asn	Ser	Gln	Gly	Ser	Phe	His	Asn	His	Thr
	770					775					780				
Leu	Ala	Gly	Ala	Leu	Ser	Cys	Val	Phe	Leu	Pro	Gln	Pro	His	Gly	Glu
785					790					795					800
Ser	Leu	Gln	Ile	Tyr	Pro	Phe	Ile	Thr	Ala	Leu	Ala	Ile	Arg	Gly	Asn
			805						810					815	
Leu	Ala	Ala	Phe	Gln	Glu	Ser	Gly	Asp	His	Ala	Arg	Glu	Phe	Ser	Leu
			820					825					830		
His	Arg	Pro	Leu	Thr	Asp	Val	Ser	Leu	Pro	Val	Gly	Ile	Arg	Ala	Ser
	835						840					845			
Trp	Lys	Asn	His	His	Arg	Val	Pro	Leu	Val	Trp	Leu	Thr	Glu	Ile	Ser
850						855							860		

Tyr Arg Ser Thr Leu Tyr Arg Gln Asp Pro Glu Leu Met Ser Lys Leu
 865 870 875 880
 Leu Ile Ser Gln Gly Thr Trp Thr Thr Gln Ala Thr Pro Val Thr Tyr
 885 890 895
 Asp Ala Leu Gly Ile Lys Val Lys Asn Thr Met Gln Val Phe Pro Lys
 900 905 910
 Val Thr Leu Ser Leu Asp Tyr Ser Ala Asp Ile Ser Ser Ser Thr Leu
 915 920 925
 Ser His Tyr Leu Asn Val Ala Ser Arg Met Arg Phe
 930 935 940

<210>501

<211>969

<212>PRT

<213>Chlamydia pneumoniae

<400>501

Asn Glu Ile Leu Thr Ile Ser Asp Gln Asn Arg Lys Ile Lys Glu Pro
 1 5 10 15
 Leu Val Ser Lys Thr Pro Pro Lys Phe Leu Phe Tyr Leu Gly Asn Phe
 20 25 30
 Thr Ala Cys Met Phe Gly Met Thr Pro Ala Val Tyr Ser Leu Gln Thr
 35 40 45
 Asp Ser Leu Glu Lys Phe Ala Leu Glu Arg Asp Glu Glu Phe Arg Thr
 50 55 60
 Ser Phe Pro Leu Leu Asp Ser Leu Ser Thr Leu Thr Gly Phe Ser Pro
 65 70 75 80
 Ile Thr Thr Phe Val Gly Asn Arg His Asn Ser Ser Gln Asp Ile Val
 85 90 95
 Leu Ser Asn Tyr Lys Ser Ile Asp Asn Ile Leu Leu Leu Trp Thr Ser
 100 105 110
 Ala Gly Gly Ala Val Ser Cys Asn Asn Phe Leu Leu Ser Asn Val Glu
 115 120 125
 Asp His Ala Phe Phe Ser Lys Asn Leu Ala Ile Gly Thr Gly Gly Ala
 130 135 140
 Ile Ala Cys Gln Gly Ala Cys Thr Ile Thr Lys Asn Arg Gly Pro Leu
 145 150 155 160
 Ile Phe Phe Ser Asn Arg Gly Leu Asn Asn Ala Ser Thr Gly Gly Glu
 165 170 175
 Thr Arg Gly Gly Ala Ile Ala Cys Asn Gly Asp Phe Thr Ile Ser Gln
 180 185 190
 Asn Gln Gly Thr Phe Tyr Phe Val Asn Asn Ser Val Asn Asn Trp Gly
 195 200 205
 Gly Ala Leu Ser Thr Asn Gly His Cys Arg Ile Gln Ser Asn Arg Ala
 210 215 220
 Pro Leu Leu Phe Phe Asn Asn Thr Ala Pro Ser Gly Gly Gly Ala Leu
 225 230 235 240
 Arg Ser Glu Asn Thr Thr Ile Ser Asp Asn Thr Arg Pro Ile Tyr Phe
 245 250 255
 Lys Asn Asn Cys Gly Asn Asn Gly Gly Ala Ile Gln Thr Ser Val Thr
 260 265 270
 Val Ala Ile Lys Asn Asn Ser Gly Ser Val Ile Phe Asn Asn Asn Thr
 275 280 285
 Ala Leu Ser Gly Ser Ile Asn Ser Gly Asn Gly Ser Gly Gly Ala Ile
 290 295 300
 Tyr Thr Thr Asn Leu Ser Ile Asp Asp Asn Pro Gly Thr Ile Leu Phe
 305 310 315 320
 Asn Asn Asn Tyr Cys Ile Arg Asp Gly Gly Ala Ile Cys Thr Gln Phe
 325 330 335
 Leu Thr Ile Lys Asn Ser Gly His Val Tyr Phe Thr Asn Asn Gln Gly
 340 345 350
 Asn Trp Gly Gly Ala Leu Met Leu Leu Gln Asp Ser Thr Cys Leu Leu
 355 360 365
 Phe Ala Glu Gln Gly Asn Ile Ala Phe Gln Asn Asn Glu Val Phe Leu
 370 375 380
 Thr Thr Phe Gly Arg Tyr Asn Ala Ile His Cys Thr Pro Asn Ser Asn

385 390 395 400
 Leu Gln Leu Gly Ala Asn Lys Gly Tyr Thr Thr Ala Phe Phe Asp Pro
 405 410 415
 Ile Glu His Gln His Pro Thr Thr Asn Pro Leu Ile Phe Asn Pro Asn
 420 425 430
 Ala Asn His Gln Gly Thr Ile Leu Phe Ser Ser Ala Tyr Ile Pro Glu
 435 440 445
 Ala Ser Asp Tyr Glu Asn Asn Phe Ile Ser Ser Ser Lys Asn Thr Ser
 450 455 460
 Glu Leu Arg Asn Gly Val Leu Ser Ile Glu Asp Arg Ala Gly Trp Gln
 465 470 475 480
 Phe Tyr Lys Phe Thr Gln Lys Gly Gly Ile Leu Lys Leu Gly His Ala
 485 490 495
 Ala Ser Ile Ala Thr Thr Ala Asn Ser Glu Thr Pro Ser Thr Ser Val
 500 505 510
 Gly Ser Gln Val Ile Ile Asn Asn Leu Ala Ile Asn Leu Pro Ser Ile
 515 520 525
 Leu Ala Lys Gly Lys Ala Pro Thr Leu Trp Ile Arg Pro Leu Gln Ser
 530 535 540
 Ser Ala Pro Phe Thr Glu Asp Asn Asn Pro Thr Ile Thr Leu Ser Gly
 545 550 555 560
 Pro Leu Thr Leu Leu Asn Glu Glu Asn Arg Asp Pro Tyr Asp Ser Ile
 565 570 575
 Asp Leu Ser Glu Pro Leu Gln Asn Ile His Leu Leu Ser Leu Ser Asp
 580 585 590
 Val Thr Ala Arg His Ile Asn Thr Asp Asn Phe His Pro Glu Ser Leu
 595 600 605
 Asn Ala Thr Glu His Tyr Gly Tyr Gln Gly Ile Trp Ser Pro Tyr Trp
 610 615 620
 Val Glu Thr Ile Thr Thr Thr Asn Asn Ala Ser Ile Glu Thr Ala Asn
 625 630 635 640
 Thr Leu Tyr Arg Ala Leu Tyr Ala Asn Trp Thr Pro Leu Gly Tyr Lys
 645 650 655
 Val Asn Pro Glu Tyr Gln Gly Asp Leu Ala Thr Thr Pro Leu Trp Gln
 660 665 670
 Ser Phe His Thr Met Phe Ser Leu Leu Arg Ser Tyr Asn Arg Thr Gly
 675 680 685
 Asp Ser Asp Ile Glu Arg Pro Phe Leu Glu Ile Gln Gly Ile Ala Asp
 690 695 700
 Gly Leu Phe Val His Gln Asn Ser Ile Pro Gly Ala Pro Gly Phe Arg
 705 710 715 720
 Ile Gln Ser Thr Gly Tyr Ser Leu Gln Ala Ser Ser Glu Thr Ser Leu
 725 730 735
 His Gln Lys Ile Ser Leu Gly Phe Ala Gln Phe Phe Thr Arg Thr Lys
 740 745 750
 Glu Ile Gly Ser Ser Asn Asn Val Ser Ala His Asn Thr Val Ser Ser
 755 760 765
 Leu Tyr Val Glu Leu Pro Trp Phe Gln Gln Ala Phe Ala Thr Ser Thr
 770 775 780
 Val Leu Ala Tyr Gly Tyr Gly Asp His His Leu His Ser Leu His Pro
 785 790 795 800
 Ser His Gln Glu Gln Ala Glu Gly Thr Cys Tyr Ser His Thr Leu Ala
 805 810 815
 Ala Ala Ile Gly Cys Ser Phe Pro Trp Gln Gln Lys Ser Tyr Leu His
 820 825 830
 Leu Ser Pro Phe Val Gln Ala Ile Ala Ile Arg Ser His Gln Thr Ala
 835 840 845
 Phe Glu Glu Ile Gly Asp Asn Pro Arg Lys Phe Val Ser Gln Lys Pro
 850 855 860
 Phe Tyr Asn Leu Thr Leu Pro Leu Gly Ile Gln Gly Lys Trp Gln Ser
 865 870 875 880
 Lys Phe His Val Pro Thr Glu Trp Thr Leu Glu Leu Ser Tyr Glu Pro
 885 890 895
 Val Leu Tyr Gln Gln Asn Pro Gln Ile Gly Val Thr Leu Leu Ala Ser

245 250 255
 Gln Asn Ile Gln Ile Asn Asp Asn Ala Ser Gly Gln Gly Val Val Tyr
 260 265 270
 Phe Leu Pro
 275

<210>504

<311>354

<212>PRT

<213>Chlamydia pneumoniae

<400>504

Cys Phe Arg Thr Arg Gly Gly Ile Phe Ser Ala Leu Gly Val Ile Ile
 1 5 10 15
 Ser Ser Asn Lys Glu Ile Ile Glu Ile Ser Asn His Ser Ala Ser Ser
 20 25 30
 Ile Asn Thr Ala Ser Gly Lys Leu Tyr Pro Gly Gly Gly Gly Ile Met
 35 40 45
 Cys Thr Ser Leu Val Ile Glu Asn Asn Pro Lys Gly Leu Ile Phe Asn
 50 55 60
 Asn Lys Thr Ala Ala Leu Ser Gly Gly Ala Ile His Thr Arg Ser Phe
 65 70 75 80
 Ile Phe Gln Asn Asn Gly Pro Thr Ala Phe Ile Asn Asn Ser Ala Thr
 85 90 95
 Ser Gly Gly Ala Leu Ile Asn Leu Ser Gly Ile Gly Ser Thr Pro Gln
 100 105 110
 Asn Phe Phe Leu Ser Ala Asp Tyr Gly Asp Ile Leu Phe Asn Asn Asn
 115 120 125
 Thr Ile Thr Ser Ser Ser Pro Gln Pro Gly Tyr Arg Asn Ala Leu Tyr
 130 135 140
 Ala Ala Pro Gly Ile Asn Leu Lys Leu Gly Ala Arg Gln Gly Tyr Lys
 145 150 155 160
 Ile Leu Phe Tyr Asp Pro Ile Asp His Asp Gln Thr Thr Thr Asp Pro
 165 170 175
 Ile Val Phe Asn Tyr Glu Pro His His Leu Gly Thr Val Leu Phe Ser
 180 185 190
 Gly Ile Asn Val Asp Ser Asn Ala Thr Asn Pro Leu Asn Phe Leu Ser
 195 200 205
 Lys Phe Ser Asn Ser Ser Arg Leu Glu Arg Gly Val Leu Ala Ile Glu
 210 215 220
 Asp Arg Ala Ala Ile Ser Cys Lys Thr Leu Ser Gln Thr Gly Gly Ile
 225 230 235 240
 Leu Arg Leu Gly Asn Ala Ala Leu Ile Arg Thr Lys Gly Pro Gly Ser
 245 250 255
 Ser Ile Asn Phe Asn Ala Ile Ala Ile Asn Leu Pro Ser Ile Leu Gln
 260 265 270
 Ser Glu Ala Ser Ala Pro Lys Phe Trp Ile Tyr Pro Thr Leu Thr Gly
 275 280 285
 Ser Thr Tyr Ser Glu Asp Thr Ser Ser Thr Ile Thr Leu Ser Gly Pro
 290 295 300
 Leu Thr Phe Leu Asn Asp Glu Asn Glu Asn Pro Tyr Asp Ser Leu Asp
 305 310 315 320
 Leu Ser Glu Pro Arg Lys Asp Ile Pro Pro Leu Pro Pro Arg Cys
 325 330 335
 Asp Cys Lys Lys Asn Arg Tyr Phe Glu Ser His Cys Arg Ser His Glu
 340 345 350
 Leu Arg

<210>505

<211>392

<212>PRT

<213>Chlamydia pneumoniae

<400>505

Ile Ser Leu Asn Leu Glu Arg Ile Ser Pro Leu Leu Tyr Leu Leu Asp
 1 5 10 15
 Val Thr Ala Lys Lys Ile Asp Thr Ser Asn Leu Ile Val Glu Ala Met

20 25 30
 Asn Leu Asp Glu His Tyr Gly Tyr Gln Gly Ile Trp Ser Pro Tyr Trp
 35 40 45
 Met Glu Thr Thr Thr Thr Thr Ser Ser Thr Val Pro Glu Gln Thr Asn
 50 55 60
 Thr Asn His Arg Gln Leu Tyr Val Asp Trp Thr Pro Val Gly Tyr Arg
 65 70 75 80
 Pro Asn Pro Glu Arg His Gly Glu Phe Ile Ala Asn Thr Leu Trp Gln
 85 90 95
 Ser Ala Tyr Asn Ala Leu Leu Gly Ile Arg Ile Leu Pro Pro Gln Asn
 100 105 110
 Leu Lys Glu His Asp Leu Glu Ala Ser Leu Gln Gly Leu Gly Leu Leu
 115 120 125
 Ile Asn Gln His Asn Arg Glu Gly Arg Lys Gly Phe Arg Asn His Thr
 130 135 140
 Thr Gly Tyr Ala Ala Thr Thr Ser Ala Lys Thr Ala Ala Arg His Ser
 145 150 155 160
 Phe Ser Leu Gly Phe Ala Gln Met Phe Ser Lys Thr Arg Glu Arg Gln
 165 170 175
 Ser Pro Ser Thr Thr Ser Ser His Asn Tyr Phe Ala Gly Leu Arg Phe
 180 185 190
 Asp Ser Leu Leu Phe Arg Asp Phe Ile Ser Thr Gly Leu Ser Leu Gly
 195 200 205
 Tyr Ser Tyr Gly Asp His His Met Leu Cys His Tyr Thr Glu Ile Leu
 210 215 220
 Lys Gly Ser Ser Lys Ala Phe Phe Asn Asn His Thr Leu Val Ala Ser
 225 230 235 240
 Leu Asp Cys Thr Phe Leu Pro Ala Arg Ile Thr Arg Thr Leu Glu Leu
 245 250 255
 Gln Pro Phe Ile Ser Ala Ile Ala Leu Arg Cys Ser Gln Ala Ser Phe
 260 265 270
 Gln Glu Thr Gly Asp His Ile Arg Lys Phe His Pro Lys His Pro Leu
 275 280 285
 Thr Asp Leu Ser Ser Pro Ile Gly Phe Arg Ser Glu Trp Lys Thr Ser
 290 295 300
 His His Ile Pro Met Leu Trp Thr Thr Glu Ile Ser Tyr Val Pro Thr
 305 310 315 320
 Leu Tyr Arg Lys Asn Pro Glu Met Phe Thr Thr Leu Leu Ile Ser Asn
 325 330 335
 Gly Thr Trp Thr Thr Gln Ala Thr Pro Val Ser Tyr Asn Ser Val Ala
 340 345 350
 Ala Lys Ile Lys Asn Thr Ser Gln Leu Phe Ser Arg Val Thr Leu Ser
 355 360 365
 Leu Asp Tyr Ser Ala Gln Val Ser Ser Ser Thr Val Gly Gln Tyr Leu
 370 375 380
 Lys Ala Glu Ser His Cys Thr Phe
 385 390
 <210>506
 <211>632
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>506
 Thr Val Gln Asn Asn Arg Ser Leu Ser Lys Ser Ser Phe Phe Val Gly
 1 5 10 15
 Ala Leu Ile Leu Gly Lys Thr Thr Ile Leu Leu Asn Ala Thr Pro Leu
 20 25 30
 Ser Asp Tyr Phe Asp Asn Gln Ala Asn Gln Leu Thr Thr Leu Phe Pro
 35 40 45
 Leu Ile Asp Thr Leu Thr Asn Met Thr Pro Tyr Ser His Arg Ala Thr
 50 55 60
 Leu Phe Gly Val Arg Asp Thr Asn Gln Asp Ile Val Leu Asp His
 65 70 75 80
 Gln Asn Ser Ile Glu Ser Trp Phe Glu Asn Phe Ser Gln Asp Gly Gly
 85 90 95

Ala	Leu	Ser	Cys	Lys	Ser	Leu	Ala	Ile	Thr	Asn	Thr	Lys	Asn	Gln	Ile		
			100					105					110				
Leu	Phe	Leu	Asn	Ser	Phe	Ala	Ile	Lys	Arg	Ala	Gly	Ala	Met	Tyr	Val		
			115					120					125				
Asn	Gly	Asn	Phe	Asp	Leu	Ser	Glu	Asn	His	Gly	Ser	Ile	Ile	Phe	Ser		
			130					135					140				
Gly	Asn	Leu	Ser	Phe	Pro	Asn	Ala	Ser	Asn	Phe	Ala	Asp	Thr	Cys	Thr		
145					150					155					160		
Gly	Gly	Ala	Val	Leu	Cys	Ser	Lys	Asn	Val	Thr	Ile	Ser	Lys	Asn	Gln		
			165						170					175			
Arg	Thr	Ala	Tyr	Phe	Ile	Asn	Asn	Lys	Ala	Lys	Ser	Ser	Gly	Gly	Ala		
			180					185					190				
Ile	Gln	Ala	Ala	Ile	Ile	Asn	Ile	Lys	Asp	Asn	Thr	Gly	Pro	Cys	Leu		
		195					200					205					
Phe	Phe	Asn	Asn	Ala	Ala	Gly	Xaa	Thr	Ala	Gly	Gly	Ala	Leu	Phe	Ala		
		210				215					220						
Asn	Ala	Cys	Arg	Ile	Glu	Asn	Asn	Ser	Gln	Pro	Ile	Tyr	Phe	Leu	Asn		
225					230					235					240		
Asn	Gln	Ser	Gly	Leu	Gly	Gly	Ala	Ile	Arg	Val	His	Gln	Glu	Cys	Ile		
			245						250					255			
Leu	Thr	Lys	Asn	Thr	Gly	Ser	Val	Ile	Phe	Asn	Asn	Asn	Phe	Ala	Met		
			260					265					270				
Glu	Ala	Asp	Ile	Ser	Ala	Asn	His	Ser	Ser	Gly	Gly	Ala	Ile	Tyr	Cys		
		275					280					285					
Ile	Ser	Cys	Ser	Ile	Lys	Asp	Asn	Pro	Gly	Ile	Ala	Ala	Phe	Asp	Asn		
		290				295					300						
Asn	Thr	Ala	Ala	Arg	Asp	Gly	Gly	Ala	Ile	Cys	Thr	Gln	Ser	Leu	Thr		
305				310						315					320		
Ile	Gln	Asp	Ser	Gly	Pro	Val	Tyr	Phe	Thr	Asn	Asn	Gln	Gly	Thr	Trp		
			325						330					335			
Gly	Gly	Ala	Ile	Met	Leu	Arg	Gln	Asp	Gly	Ala	Cys	Thr	Leu	Phe	Ala		
			340					345					350				
Asp	Gln	Gly	Asp	Ile	Ile	Phe	Tyr	Asn	Asn	Arg	His	Phe	Lys	Asp	Thr		
		355					360					365					
Phe	Ser	Asn	His	Val	Ser	Val	Asn	Cys	Thr	Arg	Asn	Val	Ser	Leu	Thr		
		370				375					380						
Val	Gly	Ala	Ser	Gln	Gly	His	Ser	Ala	Thr	Phe	Tyr	Asp	Pro	Ile	Leu		
385				390						395					400		
Gln	Arg	Tyr	Thr	Ile	Gln	Asn	Ser	Ile	Gln	Lys	Phe	Asn	Pro	Asn	Pro		
			405						410					415			
Glu	His	Leu	Gly	Thr	Ile	Leu	Phe	Ser	Ser	Ala	Tyr	Ile	Pro	Asp	Thr		
		420					425						430				
Ser	Thr	Ser	Arg	Asp	Asp	Phe	Ile	Ser	His	Phe	Arg	Asn	His	Ile	Gly		
		435				440						445					
Leu	Tyr	Asn	Gly	Thr	Leu	Ala	Leu	Glu	Asp	Arg	Ala	Glu	Trp	Lys	Val		
		450				455					460						
Tyr	Lys	Phe	Asp	Gln	Phe	Gly	Gly	Thr	Leu	Arg	Leu	Gly	Ser	Arg	Ala		
465				470						475					480		
Val	Phe	Ser	Thr	Thr	Asp	Glu	Glu	Gln	Ser	Ser	Ser	Ser	Val	Gly	Ser		
			485					490						495			
Val	Ile	Asn	Ile	Asn	Asn	Leu	Ala	Ile	Asn	Leu	Pro	Ser	Ile	Leu	Gly		
		500						505					510				
Asn	Arg	Val	Ala	Pro	Lys	Leu	Trp	Ile	Arg	Pro	Thr	Gly	Ser	Ser	Ala		
		515					520						525				
Pro	Tyr	Ser	Glu	Asp	Asn	Asn	Pro	Ile	Ile	Asn	Leu	Ser	Gly	Pro	Leu		
		530				535					540						
Ser	Leu	Leu	Asp	Asp	Glu	Asn	Leu	Asp	Pro	Tyr	Asp	Thr	Ala	Asp	Leu		
545				550						555				560			
Ala	Gln	Pro	Ile	Ala	Glu	Val	Pro	Leu	Leu	Tyr	Leu	Leu	Asp	Val	Thr		
			565					570						575			
Ala	Lys	His	Ile	Asn	Thr	Asp	Asn	Phe	Tyr	Pro	Glu	Gly	Leu	Asn	Thr		
		580					585						590				
Thr	Gln	His	Tyr	Gly	Tyr	Gln	Gly	Val	Trp	Ser	Pro	Tyr	Trp	Ile	Glu		
		595					600						605				

Thr Ile Thr Thr Ser Asp Thr Ser Ser Glu Asp Thr Val Asn Thr Leu
 610 615 620
 His Arg Gln Leu Tyr Gly Asp Trp Thr Pro Thr Gly Tyr Lys Val Asn
 625 630 635 640
 Pro Glu Asn Lys Gly Asp Ile Ala Leu Ser Ala Phe Trp Gln Ser Phe
 645 650 655
 His Asn Leu Phe Ala Thr Leu Arg Tyr Gln Thr Gln Gln Gly Gln Ile
 660 665 670
 Ala Pro Thr Ala Ser Gly Glu Ala Thr Arg Leu Phe Val His Gln Asn
 675 680 685
 Ser Asn Asn Asp Ala Lys Gly Phe His Met Glu Ala Thr Gly Tyr Ser
 690 695 700
 Leu Gly Thr Thr Ser Asn Thr Ala Ser Asn His Ser Phe Gly Val Asn
 705 710 715 720
 Phe Ser Gln Leu Phe Ser Asn Leu Tyr Glu Ser His Ser Asp Asn Ser
 725 730 735
 Val Ala Ser His Thr Thr Thr Val Ala Leu Gln Ile Asn Asn Pro Trp
 740 745 750
 Leu Gln Glu Arg Phe Ser Thr Ser Ala Ser Leu Ala Tyr Ser Tyr Ser
 755 760 765
 Asn His His Ile Lys Ala Ser Gly Tyr Ser Gly Lys Ile Gln Thr Glu
 770 775 780
 Gly Lys Cys Tyr Ser Thr Thr Leu Arg Gly Gly Ser Leu Leu Leu Ser
 785 790 795 800
 Ile Ser Thr Met Ala Ile Thr Thr Ser Pro Leu His Ser Phe Tyr Pro
 805 810 815
 Ser Asn Cys Arg Ser Phe
 820

<210>507

<211>155

<212>PRT

<213>Chlamydia pneumoniae

<400>507

Gly Ala Ala Leu Ser Cys Ser Leu Ser Leu Gln Trp Arg Ser Arg Pro
 1 5 10 15
 Leu His Phe Thr Pro Phe Ile Gln Ala Ile Ala Val Arg Ser Asn Gln
 20 25 30
 Thr Ala Phe Gln Glu Ser Gly Asp Lys Ala Arg Lys Phe Ser Val His
 35 40 45
 Lys Pro Leu Tyr Asn Leu Thr Val Pro Leu Gly Ile Gln Ser Ala Trp
 50 55 60
 Glu Ser Lys Phe Arg Leu Pro Thr Tyr Trp Asn Ile Glu Leu Ala Tyr
 65 70 75 80
 Gln Pro Val Leu Tyr Gln Gln Asn Pro Glu Val Asn Val Ser Leu Glu
 85 90 95
 Ser Ser Gly Ser Ser Trp Leu Leu Ser Gly Thr Thr Leu Ala Arg Asn
 100 105 110
 Ala Ile Ala Phe Lys Gly Arg Asn Gln Ile Phe Ile Phe Pro Lys Leu
 115 120 125
 Ser Val Phe Leu Asp Tyr Gln Gly Ser Val Ser Ser Ser Thr Thr Thr
 130 135 140
 His Tyr Leu His Ala Gly Thr Thr Phe Lys Phe
 145 150 155

<210>508

<211>778

<212>PRT

<213>Chlamydia pneumoniae

<400>508

Glu Val Phe Met Ala Ser Gly Ile Gly Gly Ser Ser Gly Leu Gly Lys
 1 5 10 15
 Ile Pro Pro Lys Asp Asn Gly Asp Arg Ser Arg Ser Pro Ser Pro Lys
 20 25 30
 Gly Glu Leu Gly Ser His Glu Ile Ser Leu Pro Pro Gln Glu His Gly
 35 40 45

Glu	Glu	Gly	Ala	Ser	Gly	Ser	Ser	His	Ile	His	Ser	Ser	Ser	Ser	Phe
50						55					60				
Leu	Pro	Glu	Asp	Gln	Glu	Ser	Gln	Ser	Ser	Ser	Ser	Ala	Ala	Ser	Ser
65					70					75					80
Pro	Gly	Phe	Phe	Ser	Arg	Val	Arg	Ser	Gly	Val	Asp	Arg	Ala	Leu	Lys
				85					90					95	
Ser	Phe	Gly	Asn	Phe	Phe	Ser	Ala	Glu	Ser	Thr	Ser	Gln	Ala	Arg	Glu
			100					105					110		
Thr	Arg	Gln	Ala	Phe	Val	Arg	Leu	Ser	Lys	Thr	Ile	Thr	Ala	Asp	Glu
			115				120						125		
Arg	Arg	Asp	Val	Asp	Ser	Ser	Ser	Ala	Ala	Ala	Thr	Glu	Ala	Arg	Val
			130				135				140				
Ala	Glu	Asp	Ala	Ser	Val	Ser	Gly	Glu	Asn	Pro	Ser	Gln	Gly	Val	Pro
145				150					155						160
Glu	Thr	Ser	Ser	Gly	Pro	Glu	Pro	Gln	Arg	Leu	Phe	Ser	Leu	Pro	Ser
				165				170						175	
Val	Lys	Lys	Gln	Ser	Gly	Leu	Gly	Arg	Leu	Val	Gln	Thr	Val	Arg	Asp
			180					185					190		
Arg	Ile	Val	Leu	Pro	Ser	Gly	Ala	Pro	Pro	Thr	Asp	Ser	Glu	Pro	Leu
			195				200					205			
Ser	Leu	Tyr	Glu	Leu	Asn	Leu	Arg	Leu	Ser	Ser	Leu	Arg	Gln	Glu	Leu
			210			215					220				
Ser	Asp	Ile	Gln	Ser	Asn	Asp	Gln	Leu	Thr	Pro	Glu	Glu	Lys	Ala	Glu
225				230						235					240
Ala	Thr	Val	Thr	Ile	Gln	Gln	Leu	Ile	Gln	Ile	Thr	Glu	Phe	Gln	Cys
			245					250						255	
Gly	Tyr	Met	Glu	Ala	Thr	Gln	Ser	Ser	Val	Ser	Leu	Ala	Glu	Ala	Arg
			260					265					270		
Phe	Lys	Gly	Val	Glu	Thr	Ser	Asp	Glu	Ile	Asn	Ser	Leu	Cys	Ser	Glu
			275				280					285			
Leu	Thr	Asp	Pro	Glu	Leu	Gln	Glu	Leu	Met	Ser	Asp	Gly	Asp	Ser	Leu
			290			295					300				
Gln	Asn	Leu	Leu	Asp	Glu	Thr	Ala	Asp	Asp	Leu	Glu	Ala	Ala	Leu	Ser
305				310						315					320
His	Ala	Arg	Leu	Ser	Phe	Ser	Leu	Asp	Asp	Asn	Pro	Thr	Pro	Ile	Asp
			325						330					335	
Asn	Asn	Pro	Thr	Leu	Ile	Ser	Gln	Glu	Glu	Pro	Ile	Tyr	Glu	Glu	Ile
			340					345					350		
Gly	Gly	Ala	Ala	Asp	Pro	Gln	Arg	Thr	Arg	Glu	Asn	Trp	Ser	Thr	Arg
			355				360					365			
Leu	Trp	Asn	Gln	Ile	Arg	Glu	Ala	Leu	Val	Ser	Leu	Leu	Gly	Met	Ile
			370			375					380				
Leu	Ser	Ile	Leu	Gly	Ser	Ile	Leu	His	Arg	Leu	Arg	Ile	Ala	Arg	His
385				390						395					400
Ala	Ala	Ala	Glu	Ala	Val	Gly	Arg	Cys	Cys	Thr	Cys	Arg	Gly	Glu	Glu
			405						410					415	
Cys	Thr	Ser	Ser	Glu	Glu	Asp	Ser	Met	Ser	Val	Gly	Ser	Pro	Ser	Glu
			420					425					430		
Ile	Asp	Glu	Thr	Glu	Arg	Thr	Gly	Ser	Pro	His	Asp	Val	Pro	Arg	Arg
			435				440					445			
Asn	Gly	Ser	Pro	Arg	Glu	Asp	Ser	Pro	Leu	Met	Asn	Ala	Leu	Val	Gly
			450			455					460				
Trp	Ala	His	Lys	His	Gly	Ala	Lys	Thr	Lys	Glu	Ser	Ser	Glu	Ser	Ser
465				470						475					480
Thr	Pro	Glu	Ile	Ser	Ile	Ser	Ala	Pro	Ile	Val	Arg	Gly	Trp	Ser	Gln
			485						490					495	
Asp	Ser	Ser	Val	Ser	Phe	Ile	Val	Met	Glu	Asp	Asp	His	Ile	Phe	Tyr
			500					505					510		
Asp	Val	Pro	Arg	Arg	Lys	Asp	Gly	Ile	Tyr	Asp	Val	Pro	Ser	Ser	Pro
			515				520					525			
Arg	Trp	Ser	Pro	Ala	Arg	Glu	Leu	Glu	Glu	Asp	Val	Phe	Gly	Asp	Tyr
			530			535					540				
Glu	Val	Pro	Ile	Thr	Ser	Ala	Glu	Pro	Ser	Lys	Asp	Lys	Asn	Ile	Tyr
545					550					555					560

Met Thr Pro Arg Leu Ala Thr Pro Ala Ile Tyr Asp Leu Pro Ser Arg
565 570 575
Pro Gly Ser Ser Gly Ser Ser Arg Ser Pro Ser Ser Asp Arg Val Arg
580 585 590
Ser Ser Ser Pro Asn Arg Arg Gly Val Pro Leu Pro Pro Val Pro Ser
595 600 605
Pro Ala Met Ser Glu Glu Gly Ser Ile Tyr Glu Asp Met Ser Gly Ala
610 615 620
Ser Gly Ala Gly Glu Ser Asp Tyr Glu Asp Met Ser Arg Ser Pro Ser
625 630 635 640
Pro Arg Gly Asp Leu Asp Glu Pro Ile Tyr Ala Asn Thr Pro Glu Asp
645 650 655
Asn Pro Phe Thr Gln Arg Asn Ile Asp Arg Ile Leu Gln Glu Arg Ser
660 665 670
Gly Gly Ala Ser Ala Ser Pro Val Glu Pro Ile Tyr Asp Glu Ile Pro
675 680 685
Trp Ile His Gly Arg Pro Pro Ala Thr Leu Pro Arg Pro Glu Asn Thr
690 695 700
Leu Thr Asn Val Ser Leu Arg Val Ser Pro Gly Phe Gly Pro Glu Val
705 710 715 720
Arg Ala Ala Leu Leu Ser Glu Ser Val Ser Ala Val Met Val Glu Ala
725 730 735
Glu Ser Ile Val Pro Pro Thr Glu Pro Gly Asp Gly Glu Ser Glu Tyr
740 745 750
Leu Glu Pro Leu Gly Gly Leu Val Ala Thr Thr Lys Ile Leu Leu Gln
755 760 765
Lys Gly Trp Pro Arg Gly Glu Ser Asn Ala
770 775

<210>509

<211>511

<212>PRT

<213>Chlamydia pneumoniae

<400>509

Gly Ser Ile Met Ala Val Gly Gly Val Gly Gly Ser Arg Ser Pro Ser
1 5 10 15
Pro Ile Pro Pro Asn Arg Arg Asn Ser Glu Asp Gly Lys Val Ser Pro
20 25 30
Lys Asp Asn Leu Gly Glu His Thr Val Ser Ser Ser Asp Ser Ser Leu
35 40 45
Ala Ser Gln Gly Pro Thr Ile Glu Glu Arg Lys Ala Gln Leu Gly Gly
50 55 60
Thr Asp Lys Ile Pro Leu Pro Ser Val Lys Glu Pro Gly Asp Ser Pro
65 70 75 80
Thr Ser Gly Arg Ser Gly Val Leu Gln Arg Ile Trp Lys Gly Val Lys
85 90 95
Gly Val Phe Lys Lys Thr Pro Gln Ala Arg Pro Glu Val Ser Ser Pro
100 105 110
Arg Leu Pro Ser His Val Gln His Gly Gln Arg Leu Pro Gly Leu Glu
115 120 125
Gly Phe Arg Asp Arg Ile Gln Lys Arg Ser Glu Asn Pro Glu Ala Asp
130 135 140
Leu Gly Lys Met Lys Arg Ser Tyr Ser Asp Gly Asp Leu Asp Arg Val
145 150 155 160
Gly His Asp Ser Asn Glu Asp Ser Thr Glu Asp Ser Arg Ser Glu Gly
165 170 175
Gly Glu Pro Ser Ser Lys Ser Ser Ser Phe Leu Ser Gly Val Arg Gly
180 185 190
Ala Val Ser Lys Val His Gly Ala Leu Gly Asp Ile Lys Gly Lys Phe
195 200 205
Gln Arg Ser Ala Ser Glu Asp Leu Thr Thr Gln Gly Glu Asp Ser
210 215 220
Ala Gly Asp Thr Val Lys Glu Arg Arg Ser Glu Glu Ala Glu Ala Ser
225 230 235 240
Ser Lys Ser Ser Ser Phe Leu Ser Gly Val Arg Gly Ala Thr Ser Thr

245 250 255
 Val Gln Gly Ala Leu Gly Asp Ala Lys Glu Lys Val Ser Ala Phe Gly
 260 265 270
 Glu Gln Ala Ala Gly Ala Ile Arg Ser Ala Pro Gly Asn Ile Arg Thr
 275 280 285
 Arg Phe Gln Arg Ser Ser Ser Glu Gly Asp Leu Ser Asn Val Asn Lys
 290 295 300
 Ala Ala Lys His Leu Arg Lys Ala Leu Glu Asn Leu Glu Lys Val Ala
 305 310 315 320
 Pro Glu Gln Val Ser Pro Glu Val Ala Ser Arg Val Gln Ser Leu Leu
 325 330 335
 Ala Arg Met Glu Gln Leu Thr His Gln Glu Pro Pro Thr Val Glu Asp
 340 345 350
 Leu Ile Thr Phe Val Glu Ser Asn Val Gly Ser Asp Ser Val Glu Tyr
 355 360 365
 Ala Ser Ile Val Pro Gln Asp Gly Ser Gln Ala Pro Ala Glu Thr Ala
 370 375 380
 Glu Ala Pro Glu Thr Gly Gly Val Glu Gly Ser Ala Ala Gln Gly Ala
 385 390 395 400
 Trp Lys Ala Leu Arg Asp Phe Val Val Ser Ile Phe Gln Ala Val Ala
 405 410 415
 Ser Phe Phe Arg Ala Ile Ala Ser Arg Leu Ser Ser Ala Arg Arg Glu
 420 425 430
 Ser Ala Val Asp Asp Leu Ala Ser Glu Ser Asn Thr Gln Trp Phe Val
 435 440 445
 Glu Gln Glu Gly Val Ser Asn Pro Ser Ala Ala Pro Ser Leu Ser Phe
 450 455 460
 Ala Glu Glu Ile Ala Arg Arg Ala Ala Glu Met Ser Asn Arg Asn Ala
 465 470 475 480
 Gln Ser Leu Glu Lys Leu Glu Ser Gly Asn Val Thr Asp Pro Val Ile
 485 490 495
 Gln Gln Gly Leu Gly Leu Ala Arg Ser Phe Ala Pro Glu Gly Gln
 500 505 510

<210>510

<211>122

<212>PRT

<213>Chlamydia pneumoniae

<400>510

Met Thr Gly Ser Val Thr Leu Pro Asp Ser Asn Phe Ser Arg Leu Trp
 1 5 10 15
 Ala Phe Leu Leu Leu Ile Ser Ala Ala Leu Arg Ala Ile Ser Ser Ala
 20 25 30
 Lys Asp Lys Leu Gly Ala Ala Asp Gly Phe Glu Thr Pro Ser Cys Ser
 35 40 45
 Thr Asn His Cys Val Leu Leu Ser Asp Ala Arg Ser Ser Thr Ala Asp
 50 55 60
 Ser Arg Arg Ala Glu Leu Asn Leu Glu Ala Ile Ala Leu Lys Lys Leu
 65 70 75 80
 Ala Thr Ala Trp Asn Met Leu Thr Thr Lys Ser Arg Asn Ala Phe His
 85 90 95
 Ala Pro Cys Ala Ala Asp Pro Ser Thr Pro Pro Val Ser Gly Ala Ser
 100 105 110
 Ala Val Ser Ala Gly Ala Cys Asp Pro Ser
 115 120

<210>511

<211>598

<212>PRT

<213>Chlamydia pneumoniae

<400>511

Leu Lys Ile Ile Ile Ser Ile Ser Phe Met Ser Thr Ser Pro Ile Ser
 1 5 10 15
 Asn Asp Pro Arg Tyr Leu Ser Leu Ser Asn Ala Thr Glu Lys Thr Ser
 20 25 30
 Leu Leu Ala Asn Ser Arg Ser Leu Ser Pro Val Pro Asn Ser Leu Val

35 40
 Pro Ser Asn Pro Glu Asp Thr Gly Leu Arg Lys Ser Ile Phe Thr His
 50 55 60
 Ser Val Thr Leu Phe Ala Gly Leu Val Val Leu Leu Val Ala Val Ser
 65 70 75 80
 Val Val Val Val Ala Leu Thr Val Leu Ala Pro Gly Val Pro Gln Ala
 85 90 95
 Ile Leu Leu Gly Ile Ala Ile Ser Gly Val Gly Ile Gly Gly Phe Ser
 100 105 110
 Ile Met Lys Ser Leu Val Tyr Met Val Arg Asp Tyr Met Ser Pro Arg
 115 120 125
 Met Gln Glu Ser Ser Arg Ile Lys Ser Ala Leu Ala Val Gly Thr Gly
 130 135 140
 Phe Thr Val Met Gly Leu Val Met Lys Val Gly Ala Asn Phe Val Pro
 145 150 155 160
 Gly Gly Tyr Gly Gly Leu Val Gly Ser Leu Gly Ser Ser Ala Tyr Ser
 165 170 175
 Arg Gly Ser Gln Thr Thr Leu Ala Ser Phe Ser His Tyr Ile Tyr Thr
 180 185 190
 Lys Phe Phe Arg Ser Glu Lys Val Ala Lys Gly Glu Lys Leu Thr Glu
 195 200 205
 Ala Glu Thr Ile Lys Glu Ala Lys Lys Leu His Tyr Ile Thr Leu Ser
 210 215 220
 Ile Ala Thr Ile Gly Val Gly Leu Ala Val Leu Gly Ile Leu Leu Ala
 225 230 235 240
 Ile Ala Gly Thr Val Leu Leu Gly Gly Ala Pro Ala Thr Ile Ala Ile
 245 250 255
 Ile Leu Ala Pro Pro Leu Ile Ser Ile Gly Leu Thr Thr Val Leu Gln
 260 265 270
 Thr Ile Leu His Ser Ser Ile Gly Lys Trp Arg Ala Phe Leu Leu Thr
 275 280 285
 Gln Glu Lys Lys Asp Leu Phe Val Asp Thr Ser Leu Lys Asp Ile Arg
 290 295 300
 Leu Glu Lys Leu Pro Pro Ser Glu Val Glu Glu Ser Glu Thr Ser Gln
 305 310 315 320
 Ser Val Ile Glu Val Pro Asp Ser Glu Gly Ile Ala Glu Thr Arg Ile
 325 330 335
 Ser Ala Glu Glu Ile Asp Thr Arg Leu Ser Leu Thr Thr Arg Gln Lys
 340 345 350
 Val Ile Phe Ala Leu Ala Thr Leu Leu Leu Leu Ala Ser Ile Ala Ala
 355 360 365
 Phe Ile Val Thr Gly Phe Gly Gly Leu Thr Val Met Gln Val Leu Leu
 370 375 380
 Val Ala Ser Val Gly Ser Ala Val Ala Ser Val Thr Leu Pro Met Val
 385 390 395 400
 Ser Ser Gly Phe Ser Tyr Val Ala Tyr Gln Leu Lys Ala Arg Leu Asn
 405 410 415
 Ile Ser Lys Leu Arg Trp Lys Glu Ala Lys Asn Lys Lys Arg Val Arg
 420 425 430
 Gln Phe Leu Ile Glu Ser Gly Val Ile Ala Ser Asp Arg Glu Phe Asn
 435 440 445
 Gln Met Trp Lys Thr Val Tyr Lys Lys Gln Ile Gln Lys Thr Asp Ala
 450 455 460
 Ala Ile Arg Glu Glu Val Arg Asn Phe Glu Lys Gly Gly Glu Val Asn
 465 470 475 480
 Ser Ala Leu Val Gly Gly Ile Leu Leu Gly Val Gly Thr Gly Ile Met
 485 490 495
 Leu Leu Ala Leu Val Pro Ala Phe Ala Pro Ile Val Pro Gly Ile Leu
 500 505 510
 Ala Leu Gly Gly Ser Thr Leu Gly Ile Ala Gly Ser Ile Leu Met Arg
 515 520 525
 Lys Phe Val Asn Trp Leu Tyr Asp Glu Leu Val Lys Leu Tyr Glu Arg
 530 535 540
 Arg Arg Asn Arg Arg Glu Leu Leu Tyr Gly Pro Glu Ser Lys Met Arg

545 550 555 560
 Ser Ile Ala Thr Asp Leu Val Val Glu Ala Leu Ala Ala Ser His Asp
 565 570 575
 His Leu Phe Asp Leu Asp Gly Pro Val Asp Phe Ile Asp Val Asp Val
 580 585 590
 Asp Ile Asp Gly Ala Ala
 595

<210>512

<211>99

<212>PRT

<213>Chlamydia pneumoniae

<400>512

Gly Thr Pro Gly Ala Lys Thr Val Lys Ala Thr Thr Thr Thr Glu Thr
 1 5 10 15
 Ala Thr Ser Lys Thr Thr Arg Pro Ala Asn Lys Val Thr Glu Trp Val
 20 25 30
 Lys Ile Leu Phe Arg Asn Pro Val Ser Ser Gly Leu Leu Gly Thr Arg
 35 40 45
 Glu Phe Gly Thr Gly Glu Arg Leu Arg Leu Phe Ala Arg Arg Glu Val
 50 55 60
 Phe Ser Val Ala Leu Asp Lys Asp Lys Tyr Arg Gly Ser Leu Leu Ile
 65 70 75 80
 Gly Asp Val Asp Ile Lys Glu Ile Leu Ile Ile Ile Phe Asn Tyr Lys
 85 90 95
 Ile Asn Tyr

<210>513

<211>722

<212>PRT

<213>Chlamydia pneumoniae

<400>513

Pro Ser Met Val Asp Lys Leu Ile His Pro Trp Asp Leu Asp Leu Leu
 1 5 10 15
 Val Ser Gly Arg Gln Lys Asp Pro His Lys Leu Leu Gly Ile Leu Ala
 20 25 30
 Ser Glu Asp Ser Ser Asp His Ile Val Ile Phe Arg Pro Gly Ala His
 35 40 45
 Thr Val Ala Ile Glu Leu Leu Gly Glu Leu His His Ala Val Ala Tyr
 50 55 60
 Arg Ser Gly Leu Phe Phe Leu Ser Val Pro Lys Gly Ile Gly His Gly
 65 70 75 80
 Asp Tyr Arg Val Tyr His Gln Asn Gly Leu Leu Ala His Asp Pro Tyr
 85 90 95
 Ala Phe Pro Pro Leu Trp Gly Glu Ile Asp Ser Phe Leu Phe His Arg
 100 105 110
 Gly Thr His Tyr Arg Ile Tyr Glu Arg Met Gly Ala Ile Pro Met Glu
 115 120 125
 Val Gln Gly Ile Ser Gly Val Leu Phe Val Leu Trp Ala Pro His Ala
 130 135 140
 Gln Arg Val Ser Val Val Gly Asp Phe Asn Phe Trp His Gly Leu Val
 145 150 155 160
 Asn Pro Leu Arg Lys Ile Ser Asp Gln Gly Ile Trp Glu Leu Phe Val
 165 170 175
 Pro Gly Leu Gly Glu Gly Ile Arg Tyr Lys Trp Glu Ile Val Thr Gln
 180 185 190
 Ser Gly Asn Val Ile Val Lys Thr Asp Pro Tyr Gly Lys Ser Phe Asp
 195 200 205
 Pro Pro Pro Gln Gly Thr Ala Arg Val Ala Asp Ser Glu Ser Tyr Ser
 210 215 220
 Trp Ser Asp His Arg Trp Met Glu Arg Arg Ser Lys Gln Ser Glu Gly
 225 230 235 240
 Pro Val Thr Ile Tyr Glu Val His Leu Gly Ser Trp Gln Trp Gln Glu
 245 250 255
 Gly Arg Pro Leu Ser Tyr Ser Glu Met Ala His Arg Leu Ala Ser Tyr

	260		265		270										
Cys	Lys	Glu	Met	His	Tyr	Thr	His	Val	Glu	Leu	Leu	Pro	Ile	Thr	Glu
	275						280					285			
His	Pro	Leu	Asn	Glu	Ser	Trp	Gly	Tyr	Gln	Val	Thr	Gly	Tyr	Tyr	Ala
	290					295					300				
Pro	Thr	Ser	Arg	Tyr	Gly	Thr	Leu	Gln	Glu	Phe	Gln	Tyr	Phe	Val	Asp
305					310					315					320
Tyr	Leu	His	Lys	Glu	Asn	Ile	Gly	Ile	Ile	Leu	Asp	Trp	Val	Pro	Gly
			325						330					335	
His	Phe	Pro	Val	Asp	Ala	Phe	Ala	Leu	Ala	Ser	Phe	Asp	Gly	Glu	Pro
		340						345					350		
Leu	Tyr	Glu	Tyr	Thr	Gly	His	Ser	Gln	Ala	Leu	His	Pro	His	Trp	Asn
	355					360						365			
Thr	Phe	Thr	Phe	Asp	Tyr	Ser	Arg	His	Glu	Val	Thr	Asn	Phe	Leu	Leu
	370				375						380				
Gly	Ser	Ala	Leu	Phe	Trp	Leu	Asp	Lys	Met	His	Ile	Asp	Gly	Leu	Arg
385					390					395					400
Val	Asp	Ala	Val	Ala	Ser	Met	Leu	Tyr	Arg	Asp	Tyr	Gly	Arg	Glu	Asp
			405						410					415	
Gly	Glu	Trp	Thr	Pro	Asn	Ile	Tyr	Gly	Gly	Lys	Glu	Asn	Leu	Glu	Ser
			420					425					430		
Ile	Glu	Phe	Leu	Lys	His	Leu	Asn	Ser	Val	Ile	His	Lys	Glu	Phe	Ser
	435						440					445			
Gly	Val	Leu	Thr	Phe	Ala	Glu	Glu	Ser	Thr	Ala	Phe	Pro	Gly	Val	Thr
	450					455					460				
Lys	Asp	Val	Asp	Gln	Gly	Gly	Leu	Gly	Phe	Asp	Tyr	Lys	Trp	Asn	Leu
465					470					475					480
Gly	Trp	Met	His	Asp	Thr	Phe	His	Tyr	Phe	Met	Lys	Asp	Pro	Met	Tyr
			485						490					495	
Arg	Lys	Tyr	His	Gln	Lys	Asp	Leu	Thr	Phe	Ser	Leu	Trp	Tyr	Ala	Phe
		500						505					510		
Gln	Glu	Ser	Phe	Ile	Leu	Pro	Leu	Ser	His	Asp	Glu	Val	Val	His	Gly
	515						520					525			
Lys	Gly	Ser	Leu	Val	Asn	Lys	Leu	Pro	Gly	Asp	Thr	Trp	Thr	Arg	Phe
	530					535					540				
Ala	Gln	Met	Arg	Val	Leu	Leu	Ser	Tyr	Gln	Ile	Cys	Leu	Pro	Gly	Lys
545					550					555					560
Lys	Leu	Leu	Phe	Met	Gly	Gly	Glu	Phe	Gly	Gln	Tyr	Gly	Glu	Trp	Ser
			565						570					575	
Pro	Asp	Arg	Pro	Leu	Asp	Trp	Glu	Leu	Leu	Asn	His	His	Tyr	His	Lys
		580						585					590		
Thr	Leu	Arg	Asn	Cys	Val	Ser	Ala	Leu	Asn	Ala	Leu	Tyr	Ile	His	Gln
	595						600					605			
Pro	Tyr	Leu	Trp	Met	Gln	Glu	Ser	Ser	Gln	Glu	Cys	Phe	His	Trp	Val
	610					615					620				
Asp	Phe	His	Asp	Ile	Glu	Asn	Asn	Val	Ile	Ala	Tyr	Tyr	Arg	Phe	Ala
625					630					635					640
Gly	Ser	Asn	Arg	Ser	Ser	Ala	Leu	Leu	Cys	Val	His	His	Phe	Ser	Ala
			645						650					655	
Ser	Thr	Phe	Pro	Ser	Tyr	Val	Leu	Arg	Cys	Glu	Gly	Val	Lys	His	Cys
		660						665					670		
Glu	Leu	Leu	Leu	Asn	Thr	Asp	Asp	Glu	Ser	Phe	Gly	Gly	Ser	Gly	Lys
	675						680					685			
Gly	Asn	Arg	Ala	Pro	Val	Val	Cys	Gln	Asp	Gln	Gly	Val	Ala	Trp	Gly
	690					695					700				
Leu	Asp	Ile	Glu	Leu	Pro	Pro	Leu	Ala	Thr	Val	Ile	Tyr	Leu	Val	Thr
705					710					715					720
Phe	Phe														

<210>514

<211>340

<212>PRT

<213>Chlamydia pneumoniae

<400>514

Gly Arg Gly Arg Arg Ala Asp Trp Gly Asp Cys Met Ile Asp Ile Met
 1 5 10 15
 Gln His Phe Lys Pro Tyr Thr Met Val Pro Gly Gln Lys Leu Pro Ile
 20 25 30
 Pro Gly Ser Leu Leu Tyr Ala Gln Val Phe Pro Thr Leu Trp Arg Leu
 35 40 45
 Phe Ser Ser Lys His Glu Ile Leu Asn Glu Gln Thr Leu Gln Val Gln
 50 55 60
 Gly Pro Leu Lys Arg Phe Ala Val Phe Gln Asp Leu His Arg Gly Gly
 65 70 75 80
 Leu Ala Val Thr Ser Glu Arg Tyr Lys Tyr Tyr Leu Leu Pro Ser Gly
 85 90 95
 Glu Cys Thr Gln Ser Ile Lys Gly Lys Leu Pro Ser Ala Ala Gln Ala
 100 105 110
 Gly Pro Leu Leu Ser Leu Gly Val His Lys His Ala Asp Trp Gln Lys
 115 120 125
 Val Arg Cys Arg Arg Asp Leu Lys Glu Ile Leu Pro Leu Trp Phe Arg
 130 135 140
 Phe Ala Ala Met Ala Pro Lys Gly Ser Tyr Arg Asp Leu Glu Thr Thr
 145 150 155 160
 Ala Ile Gly Ser Leu Val Lys Thr Ala His Gln Arg Val Leu His Arg
 165 170 175
 Glu Thr Thr Glu Ile Ala Pro Ala Leu Leu Ser Ile Ala Leu Ala Gly
 180 185 190
 Phe Ser Glu Cys Phe Leu Pro Arg Ser Tyr Asp Glu Glu Phe Gln Gly
 195 200 205
 Ile Leu Pro Gln Asp Gly Asp Pro Glu Gly Gly Val Pro Phe Glu Leu
 210 215 220
 Leu Ser Tyr Ser Phe Gly Met Ile Gln Asp Ile Phe Leu Arg His Gln
 225 230 235 240
 Gly Gln Leu Val Glu Ile Leu Pro Ala Leu Pro Pro Glu Phe Pro Cys
 245 250 255
 Gly Arg Leu Ile His Val Ala Leu Pro Asn Leu Gly Thr Leu Ser Ile
 260 265 270
 Val Trp Thr Lys Lys Thr Ile Arg Gln Val Glu Leu His Ala Glu Tyr
 275 280 285
 Ser Gly Glu Val Phe Leu Lys Phe Cys Ser Ser Leu Cys Ser Ala Arg
 290 295 300
 Leu Arg Glu Trp Ser Glu Arg Arg Leu Ser Gly Ser Lys Arg Leu Ser
 305 310 315 320
 Leu Gly Glu Thr Leu Glu Ile Lys Ala Gly Thr Thr Tyr Leu Trp Asp
 325 330 335
 Cys Phe His Lys
 340

<310>515

<311>423

<312>PRT

<313>Chlamydia pneumoniae

<400>515

Arg Tyr Met Thr Val Ala Glu Val Lys Gly Thr Phe Lys Leu Val Cys
 1 5 10 15
 Leu Gly Cys Arg Val Asn Gln Tyr Glu Val Gln Ala Tyr Arg Asp Gln
 20 25 30
 Leu Thr Ile Leu Gly Tyr Gln Glu Val Leu Asp Ser Glu Ile Pro Ala
 35 40 45
 Asp Leu Cys Ile Ile Asn Thr Cys Ala V l Thr Ala Ser Ala Glu Ser
 50 55 60
 Ser Gly Arg His Ala Val Arg Gln Leu Cys Arg Gln Asn Pro Thr Ala
 65 70 75 80
 His Ile Val Val Thr Gly Cys Leu Gly Glu Ser Asp Lys Glu Phe Phe
 85 90 95
 Ala Ser Leu Asp Arg Gln Cys Thr Leu Val Ser Asn Lys Glu Lys Ser
 100 105 110
 Arg Leu Ile Glu Lys Ile Phe Ser Tyr Asp Thr Thr Phe Pro Glu Phe

115 120 125
 Lys Ile His Ser Phe Glu Gly Lys Ser Arg Ala Phe Ile Lys Val Gln
 130 135 140
 Asp Gly Cys Asn Ser Phe Cys Ser Tyr Cys Ile Ile Pro Tyr Leu Arg
 145 150 155 160
 Gly Arg Ser Val Ser Arg Pro Ala Glu Lys Ile Leu Ala Glu Ile Ala
 165 170 175
 Gly Val Val Asp Gln Gly Tyr Arg Glu Val Val Ile Ala Gly Ile Asn
 180 185 190
 Val Gly Asp Tyr Cys Asp Gly Glu Arg Ser Leu Ala Ser Leu Ile Glu
 195 200 205
 Gln Val Asp Gln Ile Pro Gly Ile Glu Arg Ile Arg Ile Ser Ser Ile
 210 215 220
 Asp Pro Asp Asp Ile Thr Glu Asp Leu His Arg Ala Ile Thr Ser Ser
 225 230 235 240
 Arg His Thr Cys Pro Ser Ser His Leu Val Leu Gln Ser Gly Ser Asn
 245 250 255
 Ser Ile Leu Lys Arg Met Asn Arg Lys Tyr Ser Arg Gly Asp Phe Leu
 260 265 270
 Asp Cys Val Glu Lys Phe Arg Ala Ser Asp Pro Arg Tyr Ala Phe Thr
 275 280 285
 Thr Asp Val Ile Val Gly Phe Pro Gly Glu Ser Asp Gln Asp Phe Glu
 290 295 300
 Asp Thr Leu Arg Ile Ile Glu Asp Val Gly Phe Ile Lys Val His Ser
 305 310 315 320
 Phe Pro Phe Ser Ala Arg Arg Arg Thr Lys Ala Tyr Thr Phe Asp Asn
 325 330 335
 Gln Ile Pro Asn Gln Val Ile Tyr Glu Arg Lys Lys Tyr Leu Ala Glu
 340 345 350
 Val Ala Lys Arg Val Gly Gln Lys Glu Met Met Lys Arg Leu Gly Glu
 355 360 365
 Thr Thr Glu Val Leu Val Glu Lys Val Thr Gly Gln Val Ala Thr Gly
 370 375 380
 His Ser Pro Tyr Phe Glu Lys Val Ser Phe Pro Val Val Gly Thr Val
 385 390 395 400
 Ala Ile Asn Thr Leu Val Ser Val Arg Leu Asp Arg Val Glu Glu Glu
 405 410 415
 Gly Leu Ile Gly Glu Ile Val
 420

<210>516

<211>472

<212>PRT

<213>Chlamydia pneumoniae

<400>516

Leu Asp Thr Ile Asp Thr Pro Gly Glu Gln Gly Ser Gln Ser Phe Gly
 1 5 10 15
 Asn Ser Leu Gly Ala Arg Phe Asp Leu Pro Arg Lys Glu Gln Asp Pro
 20 25 30
 Ser Gln Ala Leu Ala Val Ala Ser Tyr Gln Asn Lys Thr Asp Ser Gln
 35 40 45
 Val Val Glu Glu His Leu Asp Glu Leu Ile Ser Leu Ala Asp Ser Cys
 50 55 60
 Gly Ile Ser Val Leu Glu Thr Arg Ser Trp Ile Leu Lys Thr Pro Ser
 65 70 75 80
 Ala Ser Thr Tyr Ile Asn Val Gly Lys Leu Glu Glu Ile Glu Glu Ile
 85 90 95
 Leu Lys Glu Phe Pro Ser Ile Gly Thr Leu Ile Ile Asp Glu Glu Ile
 100 105 110
 Thr Pro Ser Gln Gln Arg Asn Leu Glu Lys Arg Leu Gly Leu Val Val
 115 120 125
 Leu Asp Arg Thr Glu Leu Ile Leu Glu Ile Phe Ser Ser Arg Ala Leu
 130 135 140
 Thr Ala Glu Ala Asn Ile Gln Val Gln Leu Ala Gln Ala Arg Tyr Leu
 145 150 155 160

Leu Pro Arg Leu Lys Arg Leu Trp Gly His Leu Ser Arg Gln Lys Ser
 165 170 175
 Gly Gly Gly Ser Gly Gly Phe Val Lys Gly Glu Gly Glu Lys Gln Ile
 180 185 190
 Glu Leu Asp Arg Arg Met Val Arg Glu Arg Ile His Lys Leu Ser Ala
 195 200 205
 Gln Leu Lys Ala Val Ile Lys Gln Arg Ala Glu Arg Arg Lys Val Lys
 210 215 220
 Ser Arg Arg Gly Ile Pro Thr Phe Ala Leu Ile Gly Tyr Thr Asn Ser
 225 230 235 240
 Gly Lys Ser Thr Leu Leu Asn Leu Leu Thr Ala Ala Asp Thr Tyr Val
 245 250 255
 Glu Asp Lys Leu Phe Ala Thr Leu Asp Pro Lys Thr Arg Lys Cys Val
 260 265 270
 Leu Pro Gly Gly Arg His Val Leu Leu Thr Asp Thr Val Gly Phe Ile
 275 280 285
 Arg Lys Leu Pro His Thr Leu Val Ala Ala Phe Lys Ser Thr Leu Glu
 290 295 300
 Ala Ala Phe His Glu Asp Val Leu Leu His Val Val Asp Ala Ser His
 305 310 315 320
 Pro Leu Ala Leu Gln His Val Gln Thr Thr Tyr Asp Leu Phe Gln Glu
 325 330 335
 Leu Lys Ile Glu Lys Pro Arg Ile Ile Thr Val Leu Asn Lys Val Asp
 340 345 350
 Arg Leu Pro Gln Gly Ser Ile Pro Met Lys Leu Arg Leu Leu Ser Pro
 355 360 365
 Leu Pro Val Leu Ile Ser Ala Lys Thr Gly Glu Gly Ile Gln Asn Leu
 370 375 380
 Leu Ser Leu Met Thr Glu Ile Ile Gln Glu Lys Ser Leu His Val Thr
 385 390 395 400
 Leu Asn Phe Pro Tyr Thr Glu Tyr Gly Lys Phe Thr Glu Leu Cys Asp
 405 410 415
 Ala Gly Val Val Ala Ser Ser Arg Tyr Gln Glu Asp Phe Leu Val Val
 420 425 430
 Glu Ala Tyr Leu Pro Lys Glu Leu Gln Lys Lys Phe Arg Pro Phe Ile
 435 440 445
 Ser Tyr Val Phe Pro Glu Asp Cys Gly Asp Asp Glu Gly Arg Gly Pro
 450 455 460
 Val Leu Glu Ser Ser Phe Gly Asp
 465 470

<210>517

<211>273

<212>PRT

<213>Chlamydia pneumoniae

<400>517

Ala Ile Gly Met Val Arg Asp Ile Gln Ser Glu Ser Ile Gly Lys Leu
 1 5 10 15
 Val Phe Leu Gly Thr Gly Asn Pro Glu Gly Ile Pro Val Pro Phe Cys
 20 25 30
 Ser Cys Arg Val Cys Gln Asn Thr Gly Ile His Arg Leu Arg Ser Ser
 35 40 45
 Val Leu Ile Gln Tyr Gln Asn Lys Thr Leu Val Ile Asp Ala Gly Pro
 50 55 60
 Asp Phe Arg Thr Gln Met Leu Val Ala Gly Val Ser Glu Leu Asp Gly
 65 70 75 80
 Val Phe Leu Thr His Pro His Tyr Asp His Ile Gly Gly Ile Asp Asp
 85 90 95
 Leu Arg Ala Trp Tyr Ile Val Thr Gln Arg Ser Leu Pro Leu Val Leu
 100 105 110
 Ser Ala Ser Thr Tyr Arg Phe Leu Asn Lys Ala Lys Glu Tyr Leu Phe
 115 120 125
 Ala Thr Pro Asn Val Glu Ser Ser Leu Pro Ala Val Leu Glu Phe Thr
 130 135 140
 Ile Leu Asn Glu Asp Cys Gly Gln Glu Glu Phe Gln Gly Il Pro Tyr

145 150 155 160
 Thr Tyr Val Ser Tyr Tyr Gln Lys Ser Cys His Val Thr Gly Phe Arg
 165 170 175
 Phe Gly Asn Leu Ala Tyr Leu Thr Asp Leu Cys Ser Tyr Asp Ala Lys
 180 185 190
 Ile Phe Ser Tyr Leu Asp Asn Val Glu Thr Leu Ile Leu Ser Ala Gly
 195 200 205
 Pro Ser Glu Thr Pro Ile Pro Phe Gln Gly His Lys Ser Ser His Leu
 210 215 220
 Thr Val Glu Glu Ala Lys Ala Phe Ala Asn His Ala Gly Ile Lys Asn
 225 230 235 240
 Leu Ile Ile Thr His Ile Ser His Cys Leu Glu Ala Glu Arg Asp Gln
 245 250 255
 His Pro Glu Val Thr Phe Ala Tyr Asp Gly Met Glu Val Leu Trp Thr
 260 265 270
 Leu

<310>519

<211>242

<212>PRT

<213>Chlamydia pneumoniae

<400>519

Ser Asp Xaa Xaa Ile Ser Trp Gly Ile Ser Gly Arg Leu Gly Glu Phe
 1 5 10 15
 Val Ser Lys Lys Glu Gln Asp Cys Met Leu Gly Ser Leu Pro Cys Tyr
 20 25 30
 Pro Gly Ala Gly Asn Ile Glu Glu Tyr Lys Asn Arg Tyr Phe Tyr Cys
 35 40 45
 Gln Leu Cys Ala Glu Val Val Ser Pro Tyr Val Val Pro Val Ile Val
 50 55 60
 Val Asp Val Gln Gly Ala Pro Pro Thr Gly Ile Leu Gln Val Leu Arg
 65 70 75 80
 Cys Lys Gln His Lys Phe Gln Gly Leu Pro Val His Gly Pro Ile Thr
 85 90 95
 Ser Leu Trp Ala Leu Glu Pro Val Gly Lys Gly Ala Pro Gln Leu Glu
 100 105 110
 Ser Ala Met Tyr Glu Leu Cys Ser Gln Val Arg Asn Phe Asp Ile Cys
 115 120 125
 Ser Ile Val Ser Trp Val Phe Gly Gly Leu Cys Ile Phe Ala Gly Leu
 130 135 140
 Ile Val Gly Val Met Val Glu Ala Pro Leu Ile Ala Gly Leu Ser Ala
 145 150 155 160
 Trp Val Ile Pro Cys Ile Ile Gly Gly Val Gly Ala Ile Leu Cys Leu
 165 170 175
 Phe Ala Ile Leu Met Ala Tyr Leu Gly Arg Gly Arg Val Arg Glu Trp
 180 185 190
 Leu Asn Leu Ser His Glu Tyr Ile Thr Gln Cys His Cys Arg Gln Ile
 195 200 205
 Gln Ala His Ser Gln Asn Tyr Ser Val Ile Thr Glu Tyr Pro Ala Thr
 210 215 220
 Cys Ala Leu Ser Gln Pro Ile Thr Lys Leu Pro Asn Gly Ser Arg Arg
 225 230 235 240
 Asp Asn

<210>519

<211>545

<212>PRT

<213>Chlamydia pneumoniae

<400>519

Ser Cys Leu Arg Ile Glu Gly Ile Leu Met Ala Thr Ser Val Pro Val
 1 5 10 15
 Thr Ser Ser Thr Ser Val Gly Glu Ala Asn Ser Ser Asn Glu Arg Phe
 20 25 30
 Thr Glu Arg Thr Ser Arg Met Tyr Tyr Ala Ala Leu Val Leu Gly Ala

35	40	45
Leu Ser Cys Leu Ile Phe Ile Ala Met Ile Val Ile Phe Pro Gln Val		
50	55	60
Gly Leu Trp Ala Val Val Leu Gly Phe Ala Leu Gly Cys Leu Leu Leu		
65	70	75
Ser Leu Ala Ile Val Phe Ala Val Ser Gly Leu Val Leu Gly Lys Thr		
85	90	95
Leu Glu Pro Ser Arg Glu Ala Thr Pro Pro Glu Ile Val Ala Gln Lys		
100	105	110
Glu Trp Thr Thr Gln Gln Asp Val Leu Gly Asn Glu Tyr Trp Arg Ser		
115	120	125
Glu Leu Ile Ser Leu Phe Leu Arg Gly Asp Leu His Glu Ser Leu Ile		
130	135	140
Val Asp Ser Lys Asp Arg Ser Leu Asp Ile Asp Gln Ser Leu Gln Asn		
145	150	155
Ile Leu Lys Leu Glu Pro Leu Ser Thr Thr Leu Ser Leu Leu Lys Lys		
165	170	175
Asp Cys Val His Ile Asn Ile Ile Leu His Leu Val Arg Gln Trp Asn		
180	185	190
Leu Leu Gly Val Asp Leu Ser Pro Glu Val Thr Ala His Ala Glu Glu		
195	200	205
Leu Leu Leu Phe Leu Ile Glu Glu Gln Tyr Tyr Ser Pro Asp Ile Leu		
210	215	220
Lys Leu Ile Arg Tyr Gly Asp Ala Leu Gln Ala Thr Ser Pro Leu Met		
225	230	235
Asp Trp Ala Asp Ser Gly Ser Phe Ser Val Asp Ala Asp Gly Val Phe		
245	250	255
Ser Cys Arg Arg Glu Glu Cys Ser Pro Glu Asp Ala Leu Ala Gln Phe		
260	265	270
Asp Leu Leu Leu Ala Leu Glu Asn Pro Asp Arg Arg Phe Leu Lys Asp		
275	280	285
Ser Phe Leu Thr Tyr Ile Trp Ser Ser Ser Phe Phe Glu Lys Phe Leu		
290	295	300
His Arg His Leu Glu Ser Leu Gln Arg Lys Leu Pro Glu Thr Ala Ile		
305	310	315
Asp Val Ala Arg Tyr Glu Ala Gln Ile Gln Thr Phe Leu Ser Arg Tyr		
325	330	335
Phe Gln Lys Leu Asp Leu Ile Asn Ala Met Ser Leu Asp Trp Gly Tyr		
340	345	350
Asn Cys Ala Glu Gly Glu Lys Cys Tyr Glu Ser Ala Asn Gln Arg Leu		
355	360	365
Asp Asn Leu Phe Ile Ala Phe Ser Ser Ser Val Pro Ala Met Lys Arg		
370	375	380
Leu Phe Asp Lys Tyr Gly Ser Val Val Arg Val Asp Arg Arg Gln Ile		
385	390	395
Arg Glu Gln Ile Leu Ser Asn Thr Glu Ile Leu Glu Asn Glu Ser Gly		
405	410	415
Phe Leu Cys Ser Leu Tyr Glu Tyr Pro Leu Ser Tyr Leu Ile Asp Trp		
420	425	430
Ala Val Leu Leu Asp Cys Val Arg Gly Thr Glu Ile Ser Leu Glu Asp		
435	440	445
Gln Ala Asp Tyr Thr Val Cys Leu Gln Gly Leu Asp Ser Met Leu Ser		
450	455	460
Gln Phe Ala Ser Arg Leu Gln Ser Gly Gln Lys Val Leu Asn Pro Arg		
465	470	475
Asp Val Leu Ser Glu Gln Ala Ala Val Met Leu Val His Gly Leu Ala		
485	490	495
Ala Gln Gly Val Ser Phe Gln Gly Leu Lys Ala Leu Met Tyr Leu Thr		
500	505	510
Ala Val Pro Gln Arg Met Trp Leu Gly Ala Leu Pro Leu Phe Glu Ser		
515	520	525
Phe Pro Val Phe Asn Arg Met Xaa Glu Phe Leu Gly Glu Ser Leu Gly		
530	535	540
Asp		

545

<210>520

<211>237

<212>PRT

<213>Chlamydia pneumoniae

<400>520

Met Ile Lys Gln Ile Gly Arg Phe Phe Arg Ala Phe Ile Phe Ile Met
 1 5 10 15
 Pro Leu Ser Leu Thr Ser Cys Glu Ser Lys Ile Asp Arg Asn Arg Ile
 20 25 30
 Trp Ile Val Gly Thr Asn Ala Thr Tyr Pro Pro Phe Glu Tyr Val Asp
 35 40 45
 Ala Gln Gly Glu Val Val Gly Phe Asp Ile Asp Leu Ala Lys Ala Ile
 50 55 60
 Ser Glu Lys Leu Gly Lys Gln Leu Glu Val Arg Glu Phe Ala Phe Asp
 65 70 75 80
 Ala Leu Ile Leu Asn Leu Lys Lys His Arg Ile Asp Ala Ile Leu Ala
 85 90 95
 Gly Met Ser Ile Thr Pro Ser Arg Gln Lys Glu Ile Ala Leu Leu Pro
 100 105 110
 Tyr Tyr Gly Asp Glu Val Gln Glu Leu Met Val Val Ser Lys Arg Ser
 115 120 125
 Leu Glu Thr Pro Val Leu Pro Leu Thr Gln His Ser Ser Val Ala Val
 130 135 140
 Gln Thr Gly Thr Phe Gln Glu His Tyr Leu Leu Ser Gln Pro Gly Ile
 145 150 155 160
 Cys Val Arg Ser Phe Asp Ser Thr Leu Glu Val Ile Met Glu Val Arg
 165 170 175
 Tyr Gly Lys Ser Pro Val Ala Val Leu Glu Pro Ser Val Gly Arg Val
 180 185 190
 Val Leu Lys Asp Phe Pro Asn Leu Val Ala Thr Arg Leu Glu Leu Pro
 195 200 205
 Pro Glu Cys Trp Val Leu Gly Cys Gly Leu Gly Val Leu Lys Ile Val
 210 215 220
 Leu Lys Lys Tyr Lys Arg Phe Asn Lys Arg Leu Gln Ile
 225 230 235

<210>521

<211>269

<212>PRT

<213>Chlamydia pneumoniae

<400>521

Lys Leu Pro Asn Asn Arg Leu Arg Met Val Lys Thr Lys Asn Pro Met
 1 5 10 15
 Phe Pro Ser Arg Ala Arg Arg Pro Gln Arg Thr His Pro Arg Leu Pro
 20 25 30
 Pro Lys Leu Leu His Gln Arg Ala Gln Lys Ser Leu Lys Gln Pro Ala
 35 40 45
 Asp Lys Lys Pro Thr Pro Pro Pro Glu Ala Pro Pro Pro Val Arg
 50 55 60
 Val Ala Thr Pro Met Pro Leu Arg Pro Ser Ser Gln Gly Tyr Trp Gln
 65 70 75 80
 Cys Leu Asn Arg Met Val Ser Met Val Leu Arg Arg Ala Pro Leu Pro
 85 90 95
 Leu Pro Ala Met Gln Val Asp Pro Ile Leu Gly Asp Phe Asn Pro His
 100 105 110
 Phe Val Ala Ser Tyr Pro Asn Arg Ile Asn Asn Glu Pro Met Tyr Phe
 115 120 125
 Gln Ile Lys Gln Phe Lys Lys Ile Ala Gln Asn Pro Asp Leu Pro Gln
 130 135 140
 Gln His Arg Arg Leu Ala Gln Leu Ser Leu Glu Gln Ala Leu Tyr Leu
 145 150 155 160
 Asn Asp Asn Tyr Tyr Leu Val Asn Val Pro Gly Asp Gly Asn Cys Phe
 165 170 175
 Tyr Arg Ala Tyr Ala Val Gly Trp Leu Ser Ala Leu Tyr Glu Glu Ser

160 185
 Ser Arg Asn Asp Ile Val Phe Glu Gln Glu Ala Thr Arg Leu Leu Asp
 195 200 205
 Leu Pro Phe Ala Ser Ser Ser Pro Ala Asn Ala Asn Leu Cys Ala Glu
 210 215 220
 Met Ala Glu Leu Leu Gln Leu Cys Ser Thr Tyr Cys Ser Phe Ile Asp
 225 230 235 240
 Leu Tyr Asp Gly Val Ile Leu Ser Gln Lys His Thr Ala Thr Leu Ile
 245 250 255
 Ala Phe Leu Arg Lys Leu Ser Ala Tyr Ala Ile Arg Gln Gln Ile Ala
 260 265 270
 Ala Ser Ser Asn Glu Glu Thr Ala Arg Ala Leu Phe Ile Ser Asp Met
 275 280 285
 Gln Asp Asp Leu Leu Pro Ser Val Leu Glu Phe Leu Ala Ala Asn Arg
 290 295 300
 Pro Tyr Ser Glu Leu Phe Gln Asn Leu Ile Asp His Ser Ala His Pro
 305 310 315 320
 Thr Cys Asn Leu Glu Thr Asn Ser Phe Phe Ser Trp Asn Ile Cys Pro
 325 330 335
 Leu Ser Phe Leu Leu Met Gln Ser Phe Lys Arg Cys Leu Gln Lys Ile
 340 345 350
 Asn Asn Phe Glu Ser Asn Met Lys Glu Lys Tyr Glu Arg Leu Leu Leu
 355 360 365
 Ser

<310>532

<311>637

<312>PRT

<313>Chlamydia pneumoniae

<400>522

Ser Phe Arg Thr Pro Tyr Met Gln Ser Arg Asp Lys Leu Phe Leu Leu
 1 5 10 15
 Leu Glu His Leu Pro Ala Leu Phe Leu Thr Asp Ala Glu Leu Gln Lys
 20 25 30
 Met Ser Pro Glu Asp Gln Gln Leu Arg Lys Gln Tyr Glu Arg Glu Ile
 35 40 45
 Arg Glu Ala Phe Ala Lys Leu Ser Arg Arg Ile Ala Asp Ser Gly Trp
 50 55 60
 Asp Thr Glu Arg Phe Asn Ala Ile Val Lys Asp His Leu Pro Glu Ala
 65 70 75 80
 Ile Arg Cys Gln Tyr Ser Arg Phe Leu Ala Thr Ile Glu Asn Arg Arg
 85 90 95
 Ser Gly Asp Leu Pro Trp Ser Pro Ala Leu Ser Phe Phe Ala Phe Leu
 100 105 110
 Cys Thr Cys Pro Ser Val Arg Phe His Lys Leu Cys Ala Thr Phe Tyr
 115 120 125
 Lys Ser Leu Glu Asp Ile Ile Ala Ser Ala Pro Pro Gln Arg Ser
 130 135 140
 Ile Gln Glu Ile Leu Xaa Ile Ser Asn Ala Ser Leu Ser Tyr Leu Asn
 145 150 155 160
 Glu Asp Leu Asp Ser Ser Trp Gln Arg Glu Val Ile Ser Ser Asn Ile
 165 170 175
 Met Thr Ile Leu Thr Thr His Glu Ser Leu Thr Leu Glu Ser Ser Met
 180 185 190
 Pro Gln Leu Glu Thr Leu His Lys Arg Ile Ala Asn Leu Leu Lys Asn
 195 200 205
 Val Ile Ser Thr Ser Phe Glu Thr Pro Pro Leu Ser Asn Gln Pro Asp
 210 215 220
 Leu Leu Ser Asn Leu Val Asn Lys Leu Leu Val Ala Ile His Ser Lys
 225 230 235 240
 Leu Glu Leu Lys Glu His Phe Asn Thr Val Cys Ser Ala Arg Ser Leu
 245 250 255
 Arg Leu Thr Arg Asp Glu Gly Ser Gly Leu Ser Gln Glu Gln Asp Leu
 260 265 270

Leu	Tyr	Thr	Gln	Ala	Val	Gln	Leu	Leu	Phe	Phe	Ile	Gln	His	Pro
	275						280					385		
Gln	Val	Asn	Asn	Arg	Pro	Glu	Thr	Lys	Asp	Ala	Val	Lys	Glu	Leu
	290						295				300			Lys
Met	Leu	Leu	Leu	Pro	Phe	Leu	Gln	Tyr	Ala	Phe	Lys	Lys	Val	Glu
	305				310					315				Asn
Glu	Lys	Lys	Leu	Gln	Lys	Leu	Leu	Arg	Ser	Ile	Leu	Gly	Ser	Leu
				325					330					Val
Leu	Lys	Pro	Pro	Ala	Arg	Tyr	Pro	Ser	Thr	Pro	Ser	Asn	Lys	Asp
		340						345					350	Lys
Glu	Thr	Phe	Cys	Lys	Phe	Trp	Ser	Arg	His	Pro	Glu	Val	Met	Val
	355							360				365		Leu
Asp	Pro	Ile	Leu	Glu	Lys	Asn	Cys	Met	Gln	Phe	Leu	Arg	Ala	Thr
	370					375					380			Phe
Pro	Asn	Tyr	Gln	Leu	Glu	Thr	Glu	Ala	Ile	Leu	Leu	Glu	Lys	Glu
	385				390					395				Ile
Glu	Ser	Thr	Phe	Arg	Asn	Gly	Trp	Asn	Val	Phe	Leu	Thr	Arg	Leu
				405						410				Asn
Leu	Phe	Gly	Ser	Lys	Leu	Gly	Ser	Pro	Ser	Ser	Pro	Thr	Ala	Leu
				420				425					430	Ser
Asp	Gln	Phe	Ser	Lys	Ser	Phe	Leu	Ile	Phe	Cys	Phe	Leu	Asn	Asn
	435						440					445		Tyr
Pro	Lys	Leu	Leu	Gln	Lys	Lys	Thr	Pro	Leu	Ala	Ala	Arg	Leu	Asp
	450					455					460			Ala
Phe	Gln	Arg	Glu	Ala	Ser	His	Arg	Phe	Thr	Gln	Val	Lys	Asp	Lys
	465				470					475				Leu
Leu	Leu	Ser	Leu	Lys	Tyr	Gly	Phe	Pro	Leu	Ala	Thr	Ala	Thr	Ile
				485						490				Asn
Gln	Tyr	Ser	Arg	Ala	Arg	Asp	Gln	Leu	Ile	Cys	Asn	Leu	Leu	Lys
				500				505					510	Asn
Thr	Val	Thr	Ala	Ser	Asp	Gly	Phe	Cys	Arg	Ser	Gly	Phe	Arg	Gln
	515						520					525		Ser
Leu	Ile	Gly	Tyr	Leu	His	Ser	Leu	Ser	Ser	Asn	Glu	Leu	Gly	Asp
	530					535					540			Ile
Leu	Asp	Asp	Val	Lys	Glu	Gln	Ala	Glu	Ala	Asn	Asp	Val	Ala	Ala
	545					550				555				Met
Thr	Thr	Val	Pro	Leu	Gln	Pro	Phe	Ala	Val	Cys	Leu	Ile	Met	Ser
				565					570					Asp
Arg	Asp	Thr	Val	Ser	Glu	Glu	Asn	Ile	Glu	Asn	Phe	Val	Ala	Met
				580				585					590	His
Gly	Phe	Leu	Asn	Thr	Ile	Ser	Pro	Glu	Arg	Asp	Ala	Arg	Ile	Phe
	595						600					605		Leu
Ile	Arg	Phe	Pro	Asn	His	Tyr	Gly	Cys	Leu	Leu	Pro	Arg	Asn	Pro
	610					615					620			Arg
Thr	Glu	Asp	Gln	Asn	Ser	Lys	Pro	Asp	Ser	Ser	Asn	Pro		
	625					630					635			

<210>523

<211>296

<212>PST

<213>Chlamydia pneumoniae

<400>523

Arg	Ser	Glu	Leu	Lys	Thr	Gly	Gln	Leu	Lys	Ser	Leu	Val	Leu	His	Glu
1				5					10					15	
Val	Leu	Ile	Leu	Thr	Phe	Thr	Tyr	Pro	Leu	Pro	Arg	Thr	Leu	Lys	Gln
			20					25					30		
His	Pro	Asp	Glu	Val	His	Thr	Val	Pro	Ile	Ser	Pro	Asn	Leu	Ser	Phe
		35					40					45			
Gly	Glu	Gly	Ser	Pro	Ile	Leu	Ile	Ala	Gly	Pro	Cys	Thr	Leu	Glu	Ser
	50					55					60				
Tyr	Glu	His	Thr	Val	Ser	Ser	Ala	Leu	Thr	Val	Lys	Glu	Ala	Gly	Ala
	65				70					75					80
Gln	Val	Phe	Arg	Gly	Ser	Ile	Arg	Lys	Pro	Arg	Thr	Ser	Pro	Phe	Ser
				85					90					95	
Phe	Gln	Gly	Trp	Glu	Lys	Glu	Cys	Val	Leu	Trp	His	Lys	Glu	Ala	Gln

100 105 110
 Ser Ile His Gly Leu Pro Thr Glu Thr Glu Val Leu Asp Val Arg Asp
 115 120 125
 Val Glu Ile Thr Ala Glu His Val Asp Ile Leu Arg Ile Gly Ala Lys
 130 135 140
 Asn Met His Asn Thr Pro Leu Leu Gln Glu Val Ser Lys Ser His Arg
 145 150 155 160
 Pro Ile Ile Leu Lys Arg Ser Pro Ala Ala Thr Leu Glu Glu Trp Leu
 165 170 175
 Cys Ala Ala Glu Tyr Ile Leu Ala Ser Ser Pro Ser Cys Pro Gly Val
 180 185 190
 Ile Leu Cys Glu Arg Gly Ile Arg Thr Phe Glu His Ser Thr Arg Tyr
 195 200 205
 Thr Leu Asp Leu Asn Thr Val Ala Leu Leu Lys Glu Ile Ser Ser Leu
 210 215 220
 Pro Val Ile Val Asp Pro Ser His Ala Ala Gly Lys Arg Ser Leu Val
 225 230 235 240
 Leu Pro Leu Ala Ser Ala Gly Leu Ser Val Gly Ala Asp Gly Leu Met
 245 250 255
 Ile Glu Val His Ala His Pro Glu Lys Ala Leu Cys Asp Ala Lys Gln
 260 265 270
 Gln Ile Thr Pro Glu Glu Leu His Leu Phe Ala Lys Lys His Phe Cys
 275 280 285
 Pro Ser Glu Ser Arg Ala His Ala Ile Ser
 290 295

<210>524

<211>465

<212>PRT

<213>Chlamydia pneumoniae

<400>524

Ala Gln His Arg Ser Leu Leu Lys Gly Asn Ile Xaa His Leu Gly Cys
 1 5 10 15
 Gly Val Leu Tyr Phe Met Asn Phe Ser Leu Phe Leu Phe Phe Ile
 20 25 30
 Ala Ile Gln Gly Ile Cys Leu Tyr Val Gly Arg Arg Gly Ser Lys Lys
 35 40 45
 Val Glu Asp Arg Glu Ser Tyr Phe Leu Ala Gly Arg Ser Leu Lys Ile
 50 55 60
 Phe Pro Leu Met Met Thr Phe Ile Ala Thr Gln Ile Gly Gly Gly Val
 65 70 75 80
 Leu Leu Gly Ala Ala Glu Glu Ala Phe Cys Tyr Gly Tyr Gly Gly Ile
 85 90 95
 Leu Tyr Pro Leu Gly Val Ala Leu Gly Leu Ile Phe Leu Gly Met Gly
 100 105 110
 Pro Gly Lys Arg Leu Ala Glu Gly Ser Leu Thr Thr Val Val Ser Ile
 115 120 125
 Phe Glu Val Phe Tyr Gly Ser Lys Lys Leu Arg Lys Ile Ala Phe Leu
 130 135 140
 Leu Ser Ala Gly Ser Leu Phe Phe Ile Leu Val Ala Gln Val Ile Ala
 145 150 155 160
 Leu Asp Arg Leu Phe Ser Ser Phe Pro Phe Gly Lys Tyr Val Thr Val
 165 170 175
 Ala Phe Trp Ile Val Leu Ala Ser Tyr Thr Ser Thr Gly Gly Phe Arg
 180 185 190
 Gly Val Val Arg Thr Asp Val Ile Gln Ala Gly Phe Leu Leu Ile Ala
 195 200 205
 Val Leu Val Cys Gly Val Ser Val Trp Leu Ser Val Pro Lys Ser Leu
 210 215 220
 Ser Val Leu Asp Pro Phe Gln Ser Leu Pro Cys Ala Lys Phe Ser Asn
 225 230 235 240
 Trp Ile Phe Met Pro Met Leu Phe Met Leu Val Glu Gln Asp Met Val
 245 250 255
 Gln Arg Cys Val Ala Ala Ser Ser Pro Lys Arg Leu Gln Trp Ala Ala
 260 265 270

Val Gly Ala Gly Leu Val Leu Leu Leu Phe Asn Phe Pro Leu Phe
 275 280 285
 Leu Gly Ser Leu Gly Ala Lys Ala Gly Leu Lys Ala Gly Cys Pro Leu
 290 295 300
 Ile Asp Thr Ile Ala Tyr Phe Cys Asn Pro Ser Leu Ala Ala Val Met
 305 310 315 320
 Ala Ala Ala Ile Gly Val Ala Ile Leu Ser Thr Ala Asp Ser Leu Met
 325 330 335
 Asn Ala Val Ser Gln Leu Ile Ala Glu Glu Tyr Pro Thr Leu Lys Ala
 340 345 350
 Pro Tyr Tyr Arg Tyr Leu Val Leu Gly Leu Ala Val Ala Ala Pro Leu
 355 360 365
 Val Ala Ile Gly Phe Thr Asn Ile Val Asp Val Leu Ile Leu Ser Tyr
 370 375 380
 Ser Leu Ser Val Cys Cys Leu Ser Val Pro Val Gly Phe Tyr Leu Leu
 385 390 395 400
 Ala Pro Lys Gly Arg Arg Val Ser Gly Ala Ala Ala Trp Ala Gly Val
 405 410 415
 Leu Val Gly Ala Leu Gly Tyr Gly Trp Val Gln Ile Val Ser Leu Gly
 420 425 430
 Met Phe Gly Glu Leu Leu Ala Trp Val Gly Ser Leu Val Ala Phe Ser
 435 440 445
 Phe Val Gly Phe Ile Glu Ile Thr Trp Lys Asn Lys Val Lys Thr Gln
 450 455 460

Thr

465

<210>525

<211>237

<212>PRT

<213>Chlamydia pneumoniae

<400>525

Gly Leu Arg Ser Pro Gln Pro Leu Val Cys Glu Ala Ala Ser Ala Ala
 1 5 10 15
 Leu Cys Ser Leu Gly Ile His Gly Val Pro Leu Ala Lys Glu His Leu
 20 25 30
 Glu Ser Leu Ser Ser Arg Lys Ala Ala Ala Asn Leu Ser Ile Leu Leu
 35 40 45
 Leu Val Ser Arg Glu Asp Ile Glu Arg Ala Gly Asp Val Ile Ala Arg
 50 55 60
 Tyr Leu Ser Asn Pro Glu Met Cys Trp Ala Ile Glu Tyr Phe Leu Trp
 65 70 75 80
 Asp Ala Gln Trp Asn Leu Arg Gly Asp Thr Phe Pro Leu Tyr Ser Asp
 85 90 95
 Met Ile Lys Arg Glu Ile Gly Arg Lys Leu Ile Arg Leu Leu Ala Val
 100 105 110
 Ala Arg Tyr Ser Gln Ala Lys Ala Val Thr Ala Thr Phe Leu Ser Gly
 115 120 125
 Gln Gln Ala Gln Gly Trp Ser Phe Phe Ser Gly Met Phe Trp Glu Glu
 130 135 140
 Gly Asp Val Lys Thr Ser Glu Asp Leu Val Thr Asp Ala Cys Phe Ala
 145 150 155 160
 Ala Lys Leu Glu Gly Ala Leu Ala Ser Leu Cys Gln Lys Lys Asp Gln
 165 170 175
 Ala Ser Leu Gln Arg Val Ser Gln Leu Tyr Asn Asp Ser Arg Trp Gln
 180 185 190
 Asp Lys Leu Ala Ile Leu Glu Ser Val Ala Phe Ser Glu Asn Leu Asp
 195 200 205
 Ala Val Pro Phe Leu Leu Asp Cys Cys His His Glu Ala Pro Ser Leu
 210 215 220
 Arg Ser Ala Ala Ala Gly Ala Leu Phe Ser Ile Phe Lys
 225 230 235

<210>326

<211>356

<212>PRT

<213>Chlamydia pneumoniae

<400>526

Arg Arg Thr Gly Gly Ile Ser Leu Thr Tyr Ser Ser Phe Arg Trp Ala
 1 5 10 15
 Ser Phe Arg Cys Tyr Ser Leu Ile Phe Phe Cys Phe Cys Gly Ser Leu
 20 25 30
 Phe Gly Ser Glu Ser Leu Arg Tyr Gln Leu Leu Ile Gln Asp Phe Ala
 35 40 45
 Lys Val Ser Glu Glu Gly Ile Gly Leu Leu Glu Ser Lys Glu Tyr Ser
 50 55 60
 Leu Leu Gln Ala Lys Leu Val Leu Arg Ala Leu Ala Gln Asn Ser Ser
 65 70 75 80
 Phe Asp Asp Trp Phe Arg Ser Phe Lys Lys Cys Gln Ile Ser Tyr Pro
 85 90 95
 Glu Leu Ala His Asp Arg Asp Val Leu Glu Glu Phe Gly Ile Gln Val
 100 105 110
 Leu Arg Glu Gly Ile Glu Asn Pro Ser Val Thr Val Arg Ala Val Ser
 115 120 125
 Val Leu Ala Ile Gly Leu Ala Arg Asp Phe Arg Leu Val Pro Leu Leu
 130 135 140
 Leu Gln Ser Cys Asn Asp Asp Ser Ala Ile Val Arg Ser Leu Ala Leu
 145 150 155 160
 Gln Val Ala Val Asn Tyr Gly Ser Glu Ser Leu Lys Lys Ala Ile Val
 165 170 175
 Glu Leu Ala Arg Asn Asp Asp Ser Ile His Val Arg Ile Thr Ala Tyr
 180 185 190
 Gln Val Val Ala Leu Leu Gln Ile Glu Glu Leu Leu Pro Phe Leu Arg
 195 200 205
 Glu Arg Ala Glu Asn Lys Leu Val Asp Ser Val Glu Arg Arg Glu Ala
 210 215 220
 Trp Lys Ala Cys Leu Glu Leu Ser Ser Gln Phe Leu Glu Thr Gly Val
 225 230 235 240
 Ala Lys Asp Asp Ile Asp Gln Ala Leu Phe Thr Cys Glu Val Leu Arg
 245 250 255
 Asn Gly Met Leu Pro Glu Thr Thr Glu Ile Phe Thr Glu Leu Leu Ser
 260 265 270
 Val Glu His Pro Glu Val Gln Glu Ser Leu Leu Leu Ser Ala Leu Ala
 275 280 285
 Trp Ser His Gln Leu Gln Asn His Lys Glu Phe Leu Ser Lys Val Arg
 290 295 300
 His Val Met Cys Thr Ser Pro Phe Ala Lys Val Arg Phe Gln Ala Ala
 305 310 315 320
 Ala Leu Leu His Leu His Gly Asp Pro Leu Gly Arg Asp Ser Leu Val
 325 330 335
 Glu Gly Cys Ala Leu Leu Asn Leu Leu Cys Val Arg Gln Leu Arg Arg
 340 345 350
 Leu Ser Ala Leu
 355

<210>527

<211>110

<212>FET

<213>Chlamydia pneumoniae

<400>527

Met Thr Val Phe Lys Gln Ile Ile Asp Gly Leu Ile Asp Cys Glu Lys
 1 5 10 15
 Val Phe Glu Asn Glu Asn Phe Ile Ala Ile Lys Asp Arg Phe Pro Gln
 20 25 30
 Ala Pro Val His Leu Leu Ile Ile Pro Lys Lys Pro Ile Pro Arg Phe
 35 40 45
 Gln Asp Ile Pro Gly Asp Glu Met Ile Leu Met Ala Glu Ala Gly Lys
 50 55 60
 Ile Val Gln Glu Leu Ala Ala Glu Phe Gly Ile Ala Asp Gly Tyr Arg
 65 70 75 80
 Val Val Ile Asn Asn Gly Ala Glu Gly Gly Gln Ala Val Phe His Leu

90 95

His Ile His Leu Leu Gly Gly Arg Pro Leu Gly Ala Ile Ala
 100 105 110

<210>528
 <211>130
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>528

Asn His Leu Ile Pro Trp Asp Ile Leu Lys Ser Trp Tyr Arg Phe Phe
 1 5 10 15
 Arg Asn Asp Lys Lys Met Asn Arg Ser Leu Arg Lys Thr Ile Phe Tyr
 20 25 30
 Ser Tyr Glu Ile Phe Val Phe Lys Tyr Leu Phe Thr Ile Tyr Gln Ser
 35 40 45
 Ile Asp Asn Leu Phe Glu Tyr Cys His Met Ile Pro Arg Ser Cys Asn
 50 55 60
 Val Asn Arg Lys Ala Arg Trp Gln Leu Ser Leu Phe Val His Thr Glu
 65 70 75 80
 Arg Lys Arg Pro Leu Trp Gln Asn Thr Ala Pro Gly Ile Pro Asp Thr
 85 90 95
 Leu Asp Asn Ser Leu Pro Asn Lys Pro Ala Gln Phe Ser Gly Lys Gly
 100 105 110
 Thr Arg Thr Ser Ile Arg Arg Ser Lys Phe Gly Gly Ile Pro Arg Lys
 115 120 125

Ile His
 130

<210>529
 <211>300
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>529

Met Glu Asp Trp Leu Arg Arg Ile Val Gly Met Gln Ile Pro Arg Ser
 1 5 10 15
 Ile Gly Thr His Asp Gly Ser Phe His Ala Asp Glu Val Thr Ala Cys
 20 25 30
 Ala Leu Leu Ile Ile Phe Asp Leu Val Asp Glu Asn Lys Ile Ile Arg
 35 40 45
 Ser Arg Asp Pro Val Val Leu Ser Lys Cys Glu Tyr Val Cys Asp Val
 50 55 60
 Gly Gly Val Tyr Ser Ile Glu Asn Lys Arg Phe Asp His His Gln Val
 65 70 75 80
 Ser Tyr Asp Gly Ser Trp Ser Ser Ala Gly Met Ile Leu His Tyr Leu
 85 90 95
 Lys Glu Phe Gly Tyr Met Asp Cys Glu Glu Tyr His Phe Leu Asn Asn
 100 105 110
 Thr Leu Val His Gly Val Asp Glu Gln Asp Asn Gly Arg Phe Phe Ser
 115 120 125
 Lys Glu Gly Phe Cys Ser Phe Ser Asp Ile Ile Lys Ile Tyr Asn Pro
 130 135 140
 Arg Glu Glu Glu Glu Thr Asn Ser Asp Ala Asp Phe Ser Cys Ala Leu
 145 150 155 160
 His Phe Thr Ile Asp Phe Leu Cys Arg Leu Arg Lys Lys Phe Gln Tyr
 165 170 175
 Asp Arg Val Cys Arg Gly Ile Val Arg Glu Ala Met Glu Thr Glu Asp
 180 185 190
 Met Cys Leu Tyr Phe Asp Arg Pro Leu Ala Trp Gln Glu Asn Phe Phe
 195 200 205
 Phe Leu Gly Gly Glu Lys His Pro Ala Ala Phe Val Cys Phe Pro Ser
 210 215 220
 Cys Asp Gln Trp Ile Leu Arg Gly Ile Pro Pro Asn Leu Asp Arg Arg
 225 230 235 240
 Met Glu Val Arg Val Pro Phe Pro Glu Asn Trp Ala Gly Leu Leu Gly
 245 250 255
 Lys Glu Leu Ser Lys Val Ser Gly Ile Pro Gly Ala Val Phe Cys His

260 265
 Lys Gly Leu Phe Leu Ser Val Trp Thr Asn Arg Glu Ser Cys Gln Arg
 275 280 285
 Ala Leu Arg Leu Thr Leu Gln Asp Arg Gly Ile Ile
 290 295 300
 <210>530
 <211>154
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>530
 Ile Met Tyr Asn Leu Leu His Ala His His Asp Ala Ala Ser Pro Asp
 1 5 10 15
 Gly Arg Leu Val Ser His Leu Lys Lys Leu Ser Pro His Ile Tyr Glu
 20 25 30
 Gly Glu Val Leu Ile Glu Asn Ile Pro Ala Tyr Phe Leu Gly Phe His
 35 40 45
 Leu Pro Gln Gln Cys Ile Gln Val Asn Leu Lys Ser Ser Leu Ala Gln
 50 55 60
 Leu Gly Val Glu Ala Val Leu Asn His Leu Glu Leu Asn Lys Ala Arg
 65 70 75 80
 Lys Glu Ala Arg Leu His Val Leu Phe Met Ser Gln Asp Pro Ile Ala
 85 90 95
 Thr Ala Asn Val Gly Ala Pro Arg Ser Leu Xaa Val Leu Ser Ala Ser
 100 105 110
 Ser Leu Leu Met Ile Ala Asp Ser Tyr Val Arg Leu Val Ile Ser
 115 120 125
 Thr Gly Cys Leu Arg Thr Gln Thr Val Gln Asp Leu Arg Ser Tyr Ala
 130 135 140
 Leu Gly Lys Asn Leu Ser Thr Ser Ser Leu
 145 150
 <210>531
 <211>230
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>531
 Glu Pro Gly Ser Phe Val Cys Lys Leu Phe Ala Ala Asp Asp Arg Arg
 1 5 10 15
 Leu Val Arg Ser Pro Cys Tyr Leu Asn Arg Met Phe Thr His Thr Asp
 20 25 30
 Arg Thr Gly Ser Pro Leu Leu Arg Phe Gly Lys Lys Leu Glu His Phe
 35 40 45
 Ile Thr Leu Glu Ile Ile Asn Asp Arg Leu Val Val Phe Leu Pro Ile
 50 55 60
 Leu Pro Gly Thr Ile Cys Tyr Glu Glu Thr Ile Tyr Gly Phe Leu Pro
 65 70 75 80
 Leu Met Ser Lys Ser Leu Thr Arg Pro His Leu Lys Ile Arg Lys Phe
 85 90 95
 Leu Pro Leu Tyr Gln Met Val Thr Asp Arg Pro Pro Val Pro Glu Asp
 100 105 110
 His Lys Ile Leu Leu Ile Lys Thr Glu Pro Leu His Ile Arg Thr Val
 115 120 125
 Phe Ala Arg Val Val Gln Asp Leu Leu Pro Gln Gly Leu Arg His Thr
 130 135 140
 Ala Ala Asp Ile Leu Glu Pro Thr Thr Gln Glu Ser Gly Asp Ile Tyr
 145 150 155 160
 Glu Phe Tyr Gly Ser Thr Ser Glu Pro Ile Glu Arg Ile Pro Leu Glu
 165 170 175
 Phe Phe Thr Leu Glu Pro Tyr Lys Glu His Ser Phe Phe Phe Tyr Arg
 180 185 190
 Asp Met Leu Gln Glu Thr Leu Xaa Ser Pro Gln Glu Val Phe Arg Val
 195 200 205
 Phe Glu Ser Ile Pro Glu Gly Glu Asn Gln Ala Ala Met Phe Ile Ser
 210 215 220
 Lys Gly Ser Glu Leu Ala

<210>533

<211>356

<212>PRT

<213>Chlamydia pneumoniae

<400>533

Als Cys Leu Ser Ser Pro Lys Thr Leu Gly Ser Ser Asn Leu Glu Ser
 1 5 10 15
 Pro His Gln Met Lys Asp Met Leu Gly Lys Phe Lys Ser Thr Leu Lys
 20 25 30
 Thr Gln Pro Cys Phe Pro Phe Leu Lys Ala Met Glu Thr Asp His Ile
 35 40 45
 Thr Ser Gln Gly Val Leu Phe Ser Arg Tyr Phe Pro Ser Ala Ser Leu
 50 55 60
 Lys Gly Met Phe Leu Ser Asn Tyr Ser Arg Tyr Tyr Leu Gln His Ile
 65 70 75 80
 Tyr Phe Gln Ile Pro Ser Pro Thr Ser Gly Glu Phe Phe Ser Asn Arg
 85 90 95
 Asp Arg Ser Phe Leu Leu Asp Leu Tyr Phe Ala Gly Ile Ser Val Phe
 100 105 110
 Trp Ala Asp Leu Glu Ser Lys Arg Leu Leu Gln Tyr Ile Lys Arg Arg
 115 120 125
 Asn Lys Asp Val Gly Met Phe Val Pro Lys His Gln Ala Glu Gln Phe
 130 135 140
 Ala Gln Ser Tyr Phe Ile Gly Ile His Gly Ser Cys Leu Ile Ala Gly
 145 150 155 160
 Asp Tyr Asp Glu Phe Leu Arg Glu Leu Leu Thr Gly Met His Thr Leu
 165 170 175
 Ser Gln Gln Phe Thr Ile Pro Glu Phe Pro Pro Gln Thr Pro Leu Ala
 180 185 190
 Ile Leu Thr Gly Gly Gly Ser Gly Ala Met Glu Leu Ala Asn Arg Val
 195 200 205
 Ala Thr Glu Leu Ser Ile Leu Ser Cys Gly Asn Leu Ile Ser Leu Asp
 210 215 220
 Thr Thr Asn Ala Tyr Val Glu Ala Lys Met Ser Tyr Ala Ile Pro Asp
 225 230 235 240
 Leu Leu Glu Arg Gln Ala Asp Phe His Val Asp Leu Als Val Phe Val
 245 250 255
 Ile Gly Gly Met Gly Thr Asp Phe Glu Leu Leu Leu Glu Leu Ile Ser
 260 265 270
 Leu Lys Thr Gly Lys Lys Ala Leu Val Pro Val Phe Leu Ile Gly Pro
 275 280 285
 Val Asp Tyr Trp Lys Ser Lys Ile Thr Ala Leu Tyr Asn Ser Asn His
 290 295 300
 Ala Val Gly Thr Ile Arg Gly Ser Glu Trp Val His Asn Cys Leu Phe
 305 310 315 320
 Cys Leu Ser Ser Ala Lys Ala Gly Ile Ala Ile Phe Arg Arg Tyr Leu
 325 330 335
 Asn His Thr Leu Pro Ile Gly Pro Glu His Pro Val Pro Glu Asp Gly
 340 345 350
 Phe Val Ile Val
 355

<210>533

<211>430

<212>PRT

<213>Chlamydia pneumoniae

<400>533

Ile Leu Ser Ser Leu Tyr Thr Val Phe Thr Met Lys Thr Ala Phe His
 1 5 10 15
 Ser Cys Tyr Ser Trp Phe Cys Trp Leu Phe Ser Phe Leu Val Leu Phe
 20 25 30
 Val Gly Gly Ile Ala Gly Gly Glu Pro Leu Cys Pro Asp Cys Lys Tyr
 35 40 45
 Glu Thr Lys Ser Val Leu Arg Ser Asp Gln Leu Pro Asp His Leu Trp

50 55 60
 Asn Tyr Glu Asn Asp Cys Tyr Leu Thr Gly Tyr Val Gln Ser Leu Leu
 65 70 75 80
 Asp Met His Phe Leu Asp Ser Arg Thr Gln Val Val Ile Glu Lys Asn
 85 90 95
 Arg Ala Tyr Leu Phe Ser Leu Pro Val Asp Ser Ser Leu Ser Glu Ala
 100 105 110
 Ile Thr Asn Phe Val Arg Asp Leu Pro Phe Ile Cys Ala Val Glu Ile
 115 120 125
 Cys Glu Arg Pro Tyr Gly Glu Cys Ile Thr Arg Ser Ser Ala Glu Arg
 130 135 140
 Pro Leu Leu Pro Lys Glu Lys Thr Leu Gly Met Pro Ile Phe Cys Gly
 145 150 155 160
 Lys Glu Gly Val Trp Leu Pro Gln Asn Thr Ile Leu Phe Ser Pro Leu
 165 170 175
 Ile Ala Asp Pro Arg Gln Val Thr Asn Ser Ala Gly Ile Arg Phe Asn
 180 185 190
 Glu Lys Val Val Gly Asn Arg Val Gly Ala Thr Ile Phe Gly Gly Asp
 195 200 205
 Phe Ile Leu Leu Arg Leu Phe Asp Val Ser Arg Phe His Val Asp Cys
 210 215 220
 Asp Phe Gly Ile Gln Gly Gly Val Phe Ser Val Phe Asp Leu Asp His
 225 230 235 240
 Pro Glu Ser Cys Met Val Asn Ser Asp Phe Phe Val Ala Gly Leu Trp
 245 250 255
 Ser Gly Ala Ile Asp Lys Trp Ser Phe Arg Phe Arg Leu Trp His Leu
 260 265 270
 Ser Ser His Leu Gly Asp Glu Phe Ile Leu Thr His Pro Asn Phe Pro
 275 280 285
 Arg Phe Asn Leu Ser Asp Glu Gly Val Asp Leu Phe Ile Ser Phe Arg
 290 295 300
 Tyr Thr Pro Gln Ile Arg Leu Tyr Gly Gly Cys Gly Tyr Ile Val Ser
 305 310 315 320
 Arg Asp Leu Thr Phe Pro Glu Arg Pro Phe Tyr Cys Glu Trp Gly Ala
 325 330 335
 Glu Leu Arg Pro Phe Gly Leu Arg Glu Gly Asn Leu His Ala Gln Pro
 340 345 350
 Ile Phe Ala Met His Phe Arg Cys Trp Glu Glu Gln Lys Phe Gly Leu
 355 360 365
 Asp Gln Ser Tyr Ile Leu Gly Met Glu Trp Ala Lys Phe Gln Glu Ile
 370 375 380
 Gly Arg Lys Ile Arg Ala Val Leu Glu Tyr His Gln Gly Phe Ser Lys
 385 390 395 400
 Glu Gly Gln Phe Ile Arg Glu Pro Cys Asn Tyr Tyr Gly Phe Arg Leu
 405 410 415
 Thr Tyr Gly Phe
 420

<210>534

<211>96

<212>PRT

<213>Chlamydia pneumoniae

<400>534

Ser Lys Thr Glu Gly Ser His Ser Lys Thr Ser Lys Gly Phe Val Gly
 1 5 10 15
 Arg Phe Val Gln Trp Ile Arg Thr Phe Thr Gly Arg Gly Ser Lys Lys
 20 25 30
 Arg Ser Pro Ser Ser Phe Ser Pro Thr His Pro Tyr Ile Arg Leu Arg
 35 40 45
 Thr Tyr Thr Arg Ser Pro Lys Gln Ser Gly Val Glu Arg Lys Gln Glu
 50 55 60
 Asp Ala Glu Thr Ser Phe Ile Glu Thr Pro Lys Gly Ile Leu Lys Lys
 65 70 75 80
 Pro Gly Asn Lys Asp Pro Lys Gly Lys His Val His Trp Lys Asp Ser
 85 90 95

<210>535
 <211>421
 <212>PRT
 <213>Chlamydia pneumoniae

<400>535

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Met Ala Ile Gln Lys Ala Gly Ala Phe Leu Arg Cys Leu Pro Ser Glu
  1           5           10           15
Ser Arg Pro Tyr Leu Glu His Ala Met Arg Arg Asn Pro His Phe Ser
          20           25           30
Leu Leu Lys Pro Gln Tyr Leu Phe Ser Glu Ile Ser Lys Lys Leu Ala
          35           40           45
Gln Phe Arg Lys Glu Asn Pro Glu Ile Ser Val Ile Asp Leu Ser Ile
          50           55           60
Gly Asp Thr Thr Gln Pro Leu Cys Arg Ser Ile Thr Gln Ala Ile Lys
          65           70           75
Glu Phe Cys Val Ser Gln Glu Lys Gln Glu Thr Tyr Arg Gly Tyr Gly
          85           90           95
Pro Glu Thr Gly Leu Glu Lys Leu Arg Thr Lys Ile Ala Ser Glu Val
          100          105          110
Tyr Glu Asn Arg Ile Ser Pro Glu Glu Ile Phe Ile Ser Asp Gly Ala
          115          120          125
Lys Pro Asp Ile Phe Arg Leu Phe Ser Phe Phe Gly Ser Glu Lys Thr
          130          135          140
Leu Gly Leu Gln Asp Pro Val Tyr Pro Ala Tyr Arg Asp Ile Ala His
          145          150          155
Ile Thr Gly Ile Arg Asp Ile Ile Pro Leu Ala Cys Arg Lys Glu Thr
          165          170          175
Gly Phe Ile Pro Glu Leu Pro Asn Gln Ser Leu Asp Ile Leu Cys
          180          185          190
Leu Cys Tyr Pro Asn Asn Pro Thr Gly Thr Val Leu Thr Phe Gln Gln
          195          200          205
Leu Gln Ala Leu Val Asn Tyr Ala Asn Gln His Gly Thr Val Leu Ile
          210          215          220
Phe Asp Ala Ala Tyr Ser Ala Phe Val Ser Asp Pro Ser Leu Pro Lys
          225          230          235
Ser Ile Phe Glu Ile Pro Glu Ala Lys Tyr Cys Ala Ile Glu Ile Asn
          245          250          255
Ser Phe Ser Lys Ser Leu Gly Phe Thr Gly Met Arg Leu Ala Trp Asn
          260          265          270
Val Ile Pro Lys Glu Leu Thr Tyr Asp Asn Asn Glu Pro Met Ile Asn
          275          280          285
Asp Trp Lys Arg Leu Phe Ala Thr Thr Phe Asn Gly Ala Ser Leu Leu
          290          295          300
Met Gln Glu Ala Gly Tyr Tyr Gly Leu Asp Leu Phe Pro Thr Pro Pro
          305          310          315
Ala Ile Ser Leu Tyr Leu Thr Asn Ala Gln Lys Leu Lys Lys Ser Leu
          325          330          335
Glu Thr Ala Gly Phe Ser Val His Gly Gly Asp His Ala Pro Tyr Leu
          340          345          350
Trp Val Glu Leu Pro Glu Gly Ile Ser Asp Glu Glu Ala Phe Asp Phe
          355          360          365
Phe Leu His Gln Tyr His Ile Ala Val Thr Pro Gly His Gly Phe Gly
          370          375          380
Ser Cys Gly Gln Gly Phe Val Arg Phe Ser Ala Leu Thr Gln Pro Gln
          385          390          395
Asn Ile Ala Leu Ala Cys Asp Arg Leu Cys Thr Ala Ser Leu Lys Glu
          405          410          415
Thr Met Val Leu Ala
          420

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<210>536
 <211>354
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>536

Pro Pro Leu Tyr Arg Phe Thr Lys Arg Asn Asp Gly Ser Met Thr
 1 5 10 15
 Ile Leu Arg Lys Leu Ser Gln Tyr Leu Phe Phe Phe Ser Leu Phe Cys
 20 25 30
 Ser Phe Ile Tyr Val Ala Thr Cys Gly Ser Gln Pro Asp Ser Val Ser
 35 40 45
 Ser Pro Lys Ile Ala Ile Phe Leu Ser Phe Pro His Pro Leu Leu Glu
 50 55 60
 Asp Cys Ser Lys Ser Cys Ile Glu Thr Leu Lys Asp Phe Glu Asn Leu
 65 70 75 80
 Pro Glu Ile Val Val Leu Asn Ala Glu Asp Ser Ile Val Lys Ala Arg
 85 90 95
 Lys Ile Ala Arg Ser Leu His Thr Asp Lys Asn Val Val Ala Ile Val
 100 105 110
 Thr Leu Gly Thr Ile Ala Thr Lys Val Met Ser His Ile Glu Thr Gln
 115 120 125
 Lys Pro Val Ile Tyr Ala Ala Val Pro Asp Arg Glu Ser Leu Thr Pro
 130 135 140
 Pro Lys Asn Thr Met Asn Ile Tyr Gly Val Asn Asp Thr Leu Asp Ile
 145 150 155 160
 Asn Gln Tyr Cys Phe Ala Ile Glu Ala Val Ala Thr Asn Ala Gln Ser
 165 170 175
 Ile Val Tyr Leu Lys Pro Ser Glu Pro Phe Pro Ser Asp Leu Gln Lys
 180 185 190
 Glu Ile Val Lys Lys Leu His Ala Ser Gly Ile Glu Val Ile Glu Ile
 195 200 205
 Ser Ile Thr Ser Ser Thr Phe Lys Thr Arg Ile Arg Gln Ala Ile Asp
 210 215 220
 Lys Arg Pro Ser Ala Ile Phe Ile Pro Leu Ser Pro Leu Ser His Lys
 225 230 235 240
 Glu Gly Thr Ala Phe Leu Gln Glu Ile Leu Lys Glu Lys Ile Pro Ile
 245 250 255
 Ile Thr Asp Asp Thr Ser Leu Ile Ser Glu Glu Pro Ala Leu Pro Val
 260 265 270
 Ala Trp Ile Thr Lys Asn Gln Glu Asn Lys Ser Gln Lys Ile Val His
 275 280 285
 His Leu Leu Tyr Asn Asn His Asp Val Asp Ser Leu Arg Lys Ile Ile
 290 295 300
 Ala Gln Arg Leu Ser Pro Thr Thr Thr Phe Asn Glu Asp Ile Ile Lys
 305 310 315 320
 Tyr Leu Gly Ile Lys Leu His Lys Thr Glu Arg Asn Gln Phe Leu Ser
 325 330 335
 Phe Lys Ser Lys Lys Leu Glu Lys Ser Glu Lys Gly Lys Asn Val Ala
 340 345 350
 Val Ser

<210>537

<211>290

<212>PRT

<213>Chlamydia pneumoniae

<400>537

Gln Ala Lys Ser Arg Cys Ser Ile Asp Lys Tyr Ile Pro Val Val Asn
 1 5 10 15
 Arg Leu Leu Glu Val Cys Gly Leu Pro Glu Ala Glu Asn Val Glu Asp
 20 25 30
 Leu Ile Glu Ser Ser Ser Ala Trp Val Leu Thr Pro Glu Glu Arg Phe
 35 40 45
 Ser Gly Glu Leu Val Ser Ile Cys Gln Val Lys Asp Glu His Ala Phe
 50 55 60
 Tyr Asn Asp Leu Ser Leu Leu His Met Thr Gln Ala Val Pro Ser Tyr
 65 70 75 80
 Ser Ala Thr Tyr Asp Cys Ala Val Val Phe Gly Gly Pro Leu Pro Ala
 85 90 95
 Leu Arg Gln Arg Leu Asp Phe Leu Val Arg Glu Trp Gln Arg Gly Val

100 105 110
 Arg Phe Lys Lys Ile Val Phe Leu Cys Gly Glu Arg Gly Arg Tyr Gln
 115 120 125
 Ser Ile Glu Glu Gln Glu His Phe Phe Asp Ser Arg Tyr Asn Pro Phe
 130 135 140
 Pro Thr Glu Glu Asn Trp Glu Ser Gly Asn Arg Val Thr Pro Ser Ser
 145 150 155 160
 Glu Glu Glu Val Ala Lys Phe Val Trp Met Gln Met Leu Leu Pro Arg
 165 170 175
 Ala Trp Arg Asp Ser Thr Ser Gly Val Arg Val Thr Phe Leu Leu Ala
 180 185 190
 Lys Pro Glu Glu Asn Arg Val Val Ala Asn Arg Lys Asp Thr Leu Leu
 195 200 205
 Leu Phe Arg Ser Tyr Gln Glu Ala Phe Pro Gly Arg Val Leu Phe Val
 210 215 220
 Ser Ser Gln Pro Phe Ile Gly Leu Asp Ala Cys Arg Val Gly Gln Phe
 225 230 235 240
 Phe Lys Gly Glu Ser Tyr Asp Leu Ala Gly Pro Gly Phe Ala Gln Gly
 245 250 255
 Val Leu Lys Tyr His Trp Ala Pro Arg Ile Cys Leu His Thr Leu Ala
 260 265 270
 Glu Trp Leu Lys Glu Thr Asn Gly Cys Leu Asn Ile Ser Glu Gly Cys
 275 280 285
 Phe Gly
 290

<210>538

<211>400

<212>PRT

<213>Chlamydia pneumoniae

<400>538

Leu Ser Val Tyr Leu Leu Ile Phe Tyr Phe Cys Asn Cys Ser Thr Met
 1 5 10 15
 Ser Ser Val Asn Gln Ser Ser Gly Thr Pro Asn Pro Glu Glu Val Thr
 20 25 30
 Ser Pro Glu Ser Thr Glu Glu Asn Lys Asn Val Val Ser Ser Asp Glu
 35 40 45
 Ala Gln Ala Thr His Ala Val Ala Leu Pro Ile Val Thr Gln Leu Ser
 50 55 60
 Leu Pro Glu Gly Val Gly Thr Ser Ser Glu Glu Thr Ala Ser Asn Pro
 65 70 75 80
 Lys Val Asp Glu Ile Val Ala Glu Val Ser Ser Ser Arg Ala Val Ala
 85 90 95
 Asp Gln Ile Ser Ser Leu Val Glu Arg Val Gly Glu Leu Leu Asp Asp
 100 105 110
 Leu Lys Gly Ala Gln Ser Leu Phe Thr Ser Phe Gln Ser Glu Leu Lys
 115 120 125
 Asn Cys Leu Pro Ala Trp Lys Ser Ser Thr Arg Arg Leu Glu Thr Arg
 130 135 140
 Gly Ala Gly Asp Asn Ala Asp Ile Ala Arg Leu Glu Leu Phe Arg Ser
 145 150 155 160
 Asp Tyr Glu Ala Val Leu Gly His Ala Asn Gln Phe His Gly Lys Ala
 165 170 175
 His Leu Ile Leu Ser Lys Leu Thr Asp Val His His Lys Leu Gln Gly
 180 185 190
 Leu Ser Arg Glu Asp Leu Ser Leu Ala Phe Asp Asn Asn Asp Arg Val
 195 200 205
 Leu Glu His Leu Gly Ser Leu Gly Leu Asp Val Asp Ala Glu Gly Asn
 210 215 220
 Trp Ser Leu Ser Cys Glu Arg Gly Ile Pro Arg Leu Val Leu Thr Ala
 225 230 235 240
 Asp Ser Met Leu Val Gln Ile Lys Lys Val Asn Leu Pro Thr Val Glu
 245 250 255
 Glu Leu Arg Thr Leu Gln Gly Thr Thr Glu Ser Ser Ser Asp Pro Arg
 260 265 270

Val Glu Glu Ser Leu Ser Cys Cys Glu Arg Leu Leu Asn Glu Leu Arg
 275 280 285
 Arg Leu Trp Ala Asn Phe Val Gly Phe Ile Ser Ser Cys Tyr Asp Asn
 290 295 300
 Ile Val Phe Val Leu Met Trp Ile Val Arg Arg Ile Asn Leu Leu Pro
 305 310 315 320
 Gly Leu Gly Cys Leu Pro Phe His Asn Pro Asp Ala Ser Gln Glu Asp
 325 330 335
 Gln Arg Ser Ser Ser Gly Glu Arg Ser Thr Arg Arg Glu Arg Leu Ser
 340 345 350
 Arg Arg Ser Asp Leu Ser Glu Glu Glu Met Ile Val Arg Ala Glu Gly
 355 360 365
 Glu Ser Ile His Pro Glu Ser Pro His Gly Asp Gly Arg Asn Gln Pro
 370 375 380
 Ser Arg Gly Asp Lys Gln Asp Ser Asp Ser Glu Glu Glu Thr Glu Leu
 385 390 395 400
 <310>539
 <311>568
 <312>PRT
 <213>Chlamydia pneumoniae
 <400>539
 Met Lys Thr Ser Gln Leu Phe Tyr Lys Thr Ser Lys Asn Ala Asn Lys
 1 5 10 15
 Ser Ala Ala Val Leu Ser Asn Glu Leu Leu Glu Lys Ala Gly Tyr Leu
 20 25 30
 Phe Lys Val Ser Lys Gly Val Tyr Thr Tyr Thr Pro Leu Leu Trp Arg
 35 40 45
 Val Val Ser Lys Met Met Asn Ile Ile Arg Glu Glu Leu Asn Ala Ile
 50 55 60
 Gly Gly Gln Glu Leu Leu Leu Pro Leu Leu His Asn Ala Glu Leu Trp
 65 70 75 80
 Gln His Thr Gly Arg Trp Glu Ala Phe Thr Ser Glu Gly Leu Leu Tyr
 85 90 95
 Thr Leu Lys Asp Arg Glu Gly Lys Ser His Cys Leu Ala Pro Thr His
 100 105 110
 Glu Glu Val Ile Cys Ser Phe Val Ala Gln Trp Leu Ser Ser Lys Arg
 115 120 125
 Gln Leu Pro Leu His Leu Tyr Gln Ile Ala Thr Lys Phe Arg Asp Glu
 130 135 140
 Ile Arg Pro Arg Phe Gly Leu Ile Arg Ser Arg Glu Leu Leu Met Glu
 145 150 155 160
 Asp Ser Tyr Thr Phe Ser Asp Ser Pro Glu Gln Met Asn Glu Gln Tyr
 165 170 175
 Glu Lys Leu Arg Ser Ala Tyr Ser Lys Ile Phe Asp Arg Leu Gly Leu
 180 185 190
 Ala Tyr Val Ile Val Thr Ala Asp Gly Gly Lys Ile Gly Lys Gly Lys
 195 200 205
 Ser Glu Glu Phe Gln Val Leu Cys Ser Leu Gly Glu Asp Thr Ile Cys
 210 215 220
 Val Ser Gly Ser Tyr Gly Ala Asn Ile Glu Ala Ala Val Ser Ile Pro
 225 230 235 240
 Pro Gln His Ala Tyr Asp Arg Glu Phe Leu Pro Val Glu Glu Val Ala
 245 250 255
 Thr Pro Gly Ile Thr Thr Ile Glu Ala Leu Ala Asn Phe Phe Ser Ile
 260 265 270
 Pro Leu His Lys Ile Leu Lys Thr Leu Val Val Lys Leu Ser Tyr Ser
 275 280 285
 Asn Glu Glu Lys Phe Ile Ala Ile Gly Met Arg Gly Asp Arg Gln Val
 290 295 300
 Asn Leu Val Lys Val Ala Ser Lys Leu Asn Ala Asp Asp Ile Ala Leu
 305 310 315 320
 Ala Ser Asp Glu Glu Ile Glu Arg Val Leu Gly Thr Glu Lys Gly Phe
 325 330 335
 Ile Gly Pro Leu Asn Cys Pro Ile Asp Phe Xaa Ala Asp Glu Thr Thr

340	Ser Pro Met Thr Asn Phe Val Cys Ala Gly Asn Ala Lys Asp Lys His	345	350
355		360	365
Tyr Val Asn Val Asn Trp Asp Arg Asp Leu Leu Pro Pro Gln Tyr Gly			
370		375	380
Asp Phe Leu Leu Ala Glu Glu Gly Asp Thr Cys Pro Glu Asn Pro Gly			
385		390	395
His Pro Tyr Arg Ile Tyr Gln Gly Ile Glu Val Ala His Ile Phe Asn			400
	405	410	415
Leu Gly Thr Arg Tyr Thr Asp Ser Phe Glu Val Asn Phe Gln Asp Glu			
	420	425	430
His Gly Gln Thr Gln Gln Cys Trp Met Gly Thr Tyr Gly Ile Gly Val			
	435	440	445
Gly Arg Thr Leu Ala Ala Cys Val Glu Gln Leu Ala Asp Asp Arg Gly			
	450	455	460
Ile Val Trp Pro Lys Ala Leu Ala Pro Phe Ser Ile Thr Ile Ala Phe			
	465	470	475
Asn Gly Gly Asp Thr Val Ser Gln Glu Leu Ala Glu Thr Ile Tyr His			
	485	490	495
Glu Leu Gln Ser Gln Gly Tyr Glu Pro Leu Leu Asp Asp Arg Asp Glu			
	500	505	510
Arg Leu Gly Phe Lys Leu Lys Asp Ser Asp Leu Ile Gly Ile Pro Tyr			
	515	520	525
Lys Leu Ile Leu Gly Lys Ser Tyr Gln Ser Ser Gly Ile Phe Glu Ile			
	530	535	540
Glu Ser Arg Ser Gly Glu Lys Tyr Thr Val Ser Pro Glu Ala Phe Pro			
	545	550	555
Thr Trp Cys Gln Asn His Leu Ala			560
	565		

<210>540

<211>126

<212>PRT

<213>Chlamydia pneumoniae

<400>540

Leu Thr Phe Ser Gly Ser Phe Pro Ile Met Leu Ser Val Thr Ile Val			
1	5	10	15
Leu Val Gly Leu Glu Met Ala Arg Ser Lys Val Ser Lys Arg Asp Ser			
	20	25	30
Lys Ile Leu Asp Ile Leu Phe Ala Thr Thr Glu Leu Tyr Leu Lys Thr			
	35	40	45
Gly Gln Pro Val Gly Ser Lys Thr Leu Lys Glu Ser Phe Cys Ser Asp			
	50	55	60
Leu Ser Thr Ala Thr Ile Arg Asn Tyr Phe Ala Glu Leu Glu Ala Glu			
	65	70	75
Gly Phe Leu Lys Xaa Asn His Thr Ser Gly Gly Arg Ile Pro Thr Asp			
	85	90	95
Leu Ala Leu Arg His Tyr Val Asp His Gln Glu Glu Cys Pro Glu Ala			
	100	105	110
Glu Ile Ser Ala Pro Ile Phe Asp Lys Xaa Ser Xaa Leu Pro			
	115	120	125

<210>541

<211>104

<212>PRT

<213>Chlamydia pneumoniae

<400>541

Ile Thr Lys Lys Asn Ala Gln Lys Leu Arg Phe Leu Pro Pro Phe Leu			
1	5	10	15
Ile Xaa Ser Val Xaa Phe Pro Ser Glu Ser Arg Asn Ile Ile Lys Asp			
	20	25	30
Leu Gln Lys Ala Thr Glu Leu Leu Gly Glu Ile Leu Asp Leu Pro Thr			
	35	40	45
Phe Phe Ser Ser Pro Arg Phe Glu Asn Asp Ser Val Thr Asn Ile Gln			
	50	55	60
Ile Thr Gln Val Asp Lys Gln Arg Ala Val Thr Ile Leu Ser Thr Glu			

65 70 75 80
 Phe Gly Gln Ile Phe Thr Asp Thr Leu Trp Leu Pro Glu Ala Cys Asp
 85 90 95
 Thr Leu Ser Ile Lys Arg Ile Glu Lys Phe Leu Gln Asn Tyr Ile Arg
 100 105 110
 Lys Leu Pro Thr Asn Glu Glu Leu Ser Lys Lys Glu Glu His Leu Ser
 115 120 125
 Met Ser Leu Tyr Asn Glu Val Val Val Arg Tyr Leu Thr Arg Tyr Cys
 130 135 140
 Asn Phe Ser Glu Glu Asp Leu Tyr Gln Thr Gly Met Ser Lys Leu Leu
 145 150 155 160
 Lys Tyr Glu Ala Phe Lys Asp Pro Glu Val Leu Ala Leu Gly Leu Ser
 165 170 175
 Leu Phe Gln Asn Arg Arg Gln Met Cys Glu Leu Leu Asn Ile Gly Met
 180 185 190
 His Lys Gly Arg Ala Thr Ala Phe Ile Gly Lys Glu Leu Ser Asp Ile
 195 200 205
 Leu Gly Thr Ser Asn Pro Gly Cys Ser Val Ile Thr Ile Pro Tyr Tyr
 210 215 220
 Met Asn Arg Ser Pro Leu Gly Ala Leu Gly Ile Leu Gly Pro Ile Asn
 225 230 235 240
 Leu Pro Tyr Lys Glu Ala Leu Pro Leu Leu Lys Leu Phe Ala Asn Lys
 245 250 255
 Ile Asn Glu Thr Leu Thr Gln Ser Phe Tyr Lys Phe Lys Leu Ser Phe
 260 265 270
 Arg Arg Pro Leu Thr Ser Asn Cys Lys Leu Ser Asn Glu Pro Ile Leu
 275 280 285
 Arg Thr Glu Tyr Ser Ser Ile Lys Leu Leu Pro Ser Lys Glu Thr Leu
 290 295 300

<210>542

<211>184

<212>PRT

<213>Chlamydia pneumoniae

<400>542

Met Thr Asp Thr Pro Pro Glu Asn Glu Glu Gln His Glu Ser Asn Val
 1 5 10 15
 Gln Asn Glu Asn Glu Val Glu His Leu Gln Gln Glu Ile Val Thr Leu
 20 25 30
 Lys Thr Glu Leu Lys Glu Lys Asn Asp Lys Tyr Leu Met Ala Leu Ala
 35 40 45
 Glu Ser Glu Asn Ser Arg Lys Arg Leu Gln Lys Glu Arg Gln Glu Leu
 50 55 60
 Met Gln Tyr Ala Leu Glu Asn Thr Leu Ile Asp Phe Leu Asn Pro Ile
 65 70 75 80
 Glu Ser Met Glu Lys Ala Leu Gly Phe Ala Thr Gln Met Ser Asp Asp
 85 90 95
 Val Lys Asn Trp Ala Leu Gly Phe Asn Met Ile Leu Asn Gln Phe Lys
 100 105 110
 Gln Ile Phe Glu Glu Lys Gly Ile Ile Glu Tyr Ser Ser Ile Gly Gln
 115 120 125
 Lys Phe Asn Pro Phe Leu His Glu Ala Val Gln Thr Glu Glu Thr Ser
 130 135 140
 Glu Val Pro Glu Gly Thr Ile Leu Glu Glu Phe Ala Lys Gly Tyr Lys
 145 150 155 160
 Ile Gly Glu Arg Pro Ile Arg Val Ala Lys Val Lys Val Ala Lys Ala
 165 170 175
 Pro Thr Pro Lys Glu Asn Lys Glu
 180

<210>543

<211>539

<212>PRT

<213>Chlamydia pneumoniae

<400>543

Met Ser Glu His Lys Lys Ser Ser Lys Ile Ile Gly Ile Asp Leu Gly

1	5	10	15
Thr Thr Asn Ser Cys Val Ser Val Met Glu Gly Gly Gln Ala Lys Val			
20	25	30	
Ile Thr Ser Ser Glu Gly Thr Arg Thr Thr Pro Ser Ile Val Ala Phe			
35	40	45	
Lys Gly Asn Glu Lys Leu Val Gly Ile Pro Ala Lys Arg Gln Ala Val			
50	55	60	
Thr Asn Pro Glu Lys Thr Leu Gly Ser Thr Lys Arg Phe Ile Gly Arg			
65	70	75	80
Lys Tyr Ser Glu Val Ala Ser Glu Ile Gln Thr Val Pro Tyr Thr Val			
85	90	95	
Thr Ser Gly Ser Lys Gly Asp Ala Val Phe Glu Val Asp Gly Lys Gln			
100	105	110	
Tyr Thr Pro Glu Glu Ile Gly Ala Gln Ile Leu Met Lys Met Lys Glu			
115	120	125	
Thr Ala Glu Ala Tyr Leu Gly Glu Thr Val Thr Glu Ala Val Ile Thr			
130	135	140	
Val Pro Ala Tyr Phe Asn Asp Ser Gln Arg Ala Ser Thr Lys Asp Ala			
145	150	155	160
Gly Arg Ile Ala Gly Leu Asp Val Lys Arg Ile Ile Pro Glu Pro Thr			
165	170	175	
Ala Ala Ala Leu Ala Tyr Gly Ile Asp Lys Val Gly Asp Lys Lys Ile			
180	185	190	
Ala Val Phe Asp Leu Gly Gly Gly Thr Phe Asp Ile Ser Ile Leu Glu			
195	200	205	
Ile Gly Asp Gly Val Phe Glu Val Leu Ser Thr Asn Gly Asp Thr Leu			
210	215	220	
Leu Gly Gly Asp Asp Phe Asp Glu Val Ile Ile Lys Trp Met Ile Glu			
225	230	235	240
Glu Phe Lys Lys Gln Glu Gly Ile Asp Leu Ser Lys Asp Asn Met Ala			
245	250	255	
Leu Gln Arg Leu Lys Asp Ala Ala Glu Lys Ala Lys Ile Glu Leu Ser			
260	265	270	
Gly Val Ser Ser Thr Glu Ile Asn Gln Pro Phe Ile Thr Met Asp Ala			
275	280	285	
Gln Gly Pro Lys His Leu Ala Leu Thr Leu Thr Arg Ala Gln Phe Glu			
290	295	300	
Lys Leu Ala Ala Ser Leu Ile Glu Arg Thr Lys Ser Pro Cys Ile Lys			
305	310	315	320
Ala Leu Ser Asp Ala Lys Leu Ser Ala Lys Asp Ile Asp Asp Val Leu			
325	330	335	
Leu Val Gly Gly Met Ser Arg Met Pro Ala Val Gln Glu Thr Val Lys			
340	345	350	
Glu Leu Phe Gly Lys Glu Pro Asn Lys Gly Val Asn Pro Asp Glu Val			
355	360	365	
Val Ala Ile Gly Ala Ala Ile Gln Gly Gly Val Leu Gly Gly Glu Val			
370	375	380	
Lys Asp Val Leu Leu Leu Asp Val Ile Pro Leu Ser Leu Gly Ile Glu			
385	390	395	400
Thr Leu Gly Gly Val Met Thr Thr Leu Val Glu Arg Asn Thr Thr Ile			
405	410	415	
Pro Thr Gln Lys Lys Gln Ile Phe Ser Thr Ala Ala Asp Asn Gln Pro			
420	425	430	
Ala Val Thr Ile Val Val Leu Gln Gly Glu Arg Pro Met Ala Lys Asp			
435	440	445	
Asn Lys Glu Ile Gly Arg Phe Asp Leu Thr Asp Ile Pro Pro Ala Pro			
450	455	460	
Arg Gly His Pro Gln Ile Glu Val Ser Phe Asp Ile Asp Ala Asn Gly			
465	470	475	480
Ile Phe His Val Ser Ala Lys Asp Val Ala Ser Gly Lys Glu Gln Lys			
485	490	495	
Ile Arg Ile Glu Ala Ser Ser Gly Leu Gln Glu Asp Glu Ile Gln Arg			
500	505	510	
Met Val Arg Asp Ala Glu Ile Asn Lys Glu Glu Asp Lys Asn Val Val			

515 520 525
 Lys Leu Gln Met Leu Lys Met Lys Pro Ile Ala
 530 535
 <210>544
 <311>135
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>544
 Lys Arg Arg Glu Ala Ser Asp Ala Lys Asn Glu Ala Asp Ser Met Ile
 1 5 10 15
 Phe Arg Ala Glu Lys Ala Ile Lys Asp Tyr Lys Glu Gln Ile Pro Glu
 20 25 30
 Thr Leu Val Lys Glu Ile Glu Glu Arg Ile Glu Asn Val Arg Asn Ala
 35 40 45
 Leu Lys Asp Asp Ala Pro Ile Glu Lys Ile Lys Glu Val Thr Glu Asp
 50 55 60
 Leu Ser Lys His Met Gln Lys Ile Gly Glu Ser Met Gln Ser Gln Ser
 65 70 75 80
 Ala Ser Ala Ala Ala Ser Ser Ala Ala Asn Ala Lys Gly Gly Pro Asn
 85 90 95
 Ile Asn Thr Glu Asp Leu Lys Lys His Ser Phe Ser Thr Lys Pro Pro
 100 105 110
 Ser Asn Asn Gly Ser Ser Glu Asp His Ile Glu Glu Ala Asp Val Glu
 115 120 125
 Ile Ile Asp Asn Asp Asp Lys
 130 135
 <210>545
 <311>234
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>545
 Ala Thr Gln Phe Thr Ser Glu Thr Thr Gly Phe Leu Val Gln Cys Pro
 1 5 10 15
 Lys Leu Thr Gly Gly Ala Gln Leu Leu Lys Lys Pro Lys Arg Lys Pro
 20 25 30
 Gly Arg Arg Thr Tyr Gly Lys Ser Leu Lys Ile Phe Ile Pro Gly Thr
 35 40 45
 Leu Phe Val His Ala Arg Lys Gly Phe Gly Phe Val Ser Pro Asp Asn
 50 55 60
 Pro Glu Glu Tyr Pro Phe Asp Ile Phe Val Pro Ala Arg Asp Leu Arg
 65 70 75 80
 Gly Ala Leu Asp Gly Asp His Val Ile Val Ser Val Leu Pro Tyr Pro
 85 90 95
 Arg Asp Gly Gln Lys Leu Lys Gly Thr Ile Ser Glu Val Leu Ala Arg
 100 105 110
 Gly Lys Thr Thr Leu Val Gly Thr Ile Thr Ser Leu Val Ser Pro Thr
 115 120 125
 Ser Ala Leu Ala Tyr Thr Ser Met Ser Gly Ser Gln Ser Leu Ile Pro
 130 135 140
 Val Glu Leu Leu Pro Gly Arg Thr Tyr Lys Ile Gly Asp Arg Ile Leu
 145 150 155 160
 Leu Ser Thr Pro Pro Trp Val Asp Lys Pro Gln Glu Gly Ala Ser Pro
 165 170 175
 Ala Leu Gln Met Leu Glu Phe Ile Gly His Ile Thr Asn Ala Lys Ala
 180 185 190
 Asp Phe Gln Ala Ile Gln Ala Glu Tyr Asn Leu Ala Glu Glu Phe Pro
 195 200 205
 Pro Glu Val Ile Glu Glu Ala Ser Leu Phe Ser Gln Xaa Xaa Leu Thr
 210 215 220
 Gln Val Leu Gln Leu Ser Gln Arg Ser Pro
 225 230
 <210>546
 <311>256
 <312>PRT

<213>Chlamydia pneumoniae

<400>546

Pro Lys Phe Ser Asn Ser Arg Lys Asp Leu Arg Asp Leu Leu Cys Phe
1 5 10 15
Thr Ile Asp Ser Ser Thr Ala Arg Asp Phe Asp Asp Ala Ile Ser Leu
20 25 30
Thr Tyr Asp His Asn Asn Asn Tyr Ile Leu Gly Val His Ile Ala Asp
35 40 45
Val Ser His Tyr Val Thr Pro His Ser His Leu Asp Lys Glu Ala Ala
50 55 60
Lys Arg Cys Asn Ser Thr Tyr Phe Pro Gly Lys Val Ile Pro Met Leu
65 70 75 80
Pro Ser Ala Leu Ser Asp Asn Leu Cys Ser Leu Lys Pro Asn Val Asp
85 90 95
Arg Leu Ala Val Ser Val Phe Met Thr Phe Thr Lys Ser Gly His Leu
100 105 110
Ser Asp Tyr Gln Ile Phe Arg Ser Val Ile Arg Ser Lys Tyr Arg Met
115 120 125
Thr Tyr Asp Glu Val Asp Asn Ile Ile Glu Lys Lys His Ser His Pro
130 135 140
Leu Ser Lys Ile Leu Asn Glu Met Ala Thr Leu Ser Lys Lys Phe Ser
145 150 155 160
Asp Ile Arg Glu Glu Arg Gly Cys Ile Arg Phe Val Leu Pro Ser Val
165 170 175
Thr Met Ser Leu Asp Asn Leu Gln Glu Pro Val Ala Leu Ile Glu Asn
180 185 190
His Gln Thr Phe Ser His Lys Leu Ile Glu Glu Phe Met Leu Lys Ala
195 200 205
Asn Glu Val Val Ala Tyr His Ile Ser His Gln Gly Val Ser Leu Pro
210 215 220
Phe Arg Ser His Glu Pro Pro Asn Asp Glu Asn Leu Leu Ala Phe Gln
225 230 235 240
Glu Xaa Ala Lys Asn Met Gly Phe Asp Ile Thr Phe Thr Pro Thr Gln
245 250 255
Arg Thr

<210>547

<211>286

<212>PRT

<213>Chlamydia pneumoniae

<400>547

Lys Thr Thr Arg Pro Ser Pro Ile Asn Ser Ser Lys Ser Leu Cys Leu
1 5 10 15
Lys Gln Thr Lys Trp Ser Pro Ile Ile Ser Pro Ile Lys Ala Phe Leu
20 25 30
Tyr Leu Phe Val Val Thr Asn Leu Pro Met Met Lys Thr Tyr Ser Pro
35 40 45
Ser Lys Xaa Xaa Gln Lys Thr Trp Ala Leu Ile Ser Arg Ser Leu Pro
50 55 60
His Lys Glu Pro Asp Tyr Gln Tyr Leu Leu Gln Thr Thr Ser Ala Gly
65 70 75 80
His Pro Leu Glu Gln Val Leu His Ser Gln Phe Val Arg Ser Met Lys
85 90 95
Thr Ala Ser Tyr Ser Thr Glu Asn Lys Gly His Tyr Gly Leu Lys Leu
100 105 110
Asp Tyr Tyr Thr His Phe Thr Ser Pro Ile Arg Arg Tyr Ile Asp Leu
115 120 125
Ile Val His Arg Leu Leu Phe Asn Pro Leu Ser Ile Asp Gln Thr His
130 135 140
Leu Glu Ile Ile Val Arg Ala Cys Ser Thr Lys Glu Arg Val Ser Ala
145 150 155 160
Lys Ala Glu Asn Ser Phe Glu Asn Leu Lys Lys Thr Arg Phe Ile Asn
165 170 175
Lys Phe Leu Gln Glu Gln Pro Lys Thr Thr Tyr His Ala Tyr Ile Ile

180 185
 Thr Ala Asn His Glu Gly Leu Ser Phe Val Val Thr Glu Phe Cys His
 195 200 205
 Glu Gly Phe Ile Ala Ala Ala Glu Leu Pro Lys Glu Tyr Ser Leu Lys
 210 215 220
 Lys Asn Ala Leu Pro Glu Ser Ile Pro Asp Lys Met Lys Pro Gly Ala
 225 230 235 240
 Ser Arg Lys Val Thr Ile Asp Ser Val Asn Leu Leu Thr Gln Lys Ile
 245 250 255
 Val Trp Ser Ile Ala Thr Thr Thr Glu Asp Lys Pro Lys Lys Ile Lys
 260 265 270
 Lys Thr Pro Ser Lys Lys Lys Gly Thr Lys Lys Arg Ala Ser
 275 280 285

<210>548

<211>201

<212>PRT

<213>Chlamydia pneumoniae

<400>548

Lys Glu Pro Arg Asn Val Leu Gln Glu His Phe Phe Leu Ser Glu Asp
 1 5 10 15
 Val Ile Thr Leu Ala Gln Gln Leu Leu Gly His Lys Leu Ile Thr Thr
 20 25 30
 His Glu Gly Leu Ile Thr Ser Gly Tyr Ile Val Glu Thr Glu Ala Tyr
 35 40 45
 Arg Gly Pro Asp Asp Lys Ala Cys His Ala Tyr Asn Tyr Arg Lys Thr
 50 55 60
 Gln Arg Asn Arg Ala Met Tyr Leu Lys Arg Gly Ser Ala Tyr Leu Tyr
 65 70 75 80
 Arg Cys Tyr Gly Met His His Leu Leu Asn Val Val Thr Gly Pro Glu
 85 90 95
 Asp Ile Pro His Ala Val Leu Ile Arg Ala Ile Leu Pro Asp Gln Gly
 100 105 110
 Lys Glu Leu Met Ile Gln Arg Arg Gln Trp Arg Asp Lys Pro Pro His
 115 120 125
 Leu Leu Thr Asn Gly Pro Gly Lys Val Cys Gln Ala Leu Gly Ile Ser
 130 135 140
 Leu Glu Asn Asn Arg Gln Arg Leu Asn Thr Pro Ala Leu Tyr Ile Ser
 145 150 155 160
 Lys Glu Lys Ile Ser Gly Thr Leu Thr Ala Thr Ala Arg Ile Gly Ile
 165 170 175
 Asp Tyr Ala Gln Glu Tyr Arg Asp Val Pro Trp Arg Phe Leu Leu Ser
 180 185 190
 Pro Glu Asp Ser Gly Lys Val Leu Ser
 195 200

<210>549

<211>189

<212>PRT

<213>Chlamydia pneumoniae

<400>549

Ala Trp Leu Arg Asn Ser Leu Thr Lys Phe Ser Phe Tyr Thr Lys His
 1 5 10 15
 Arg Ala Leu Leu Lys Phe Val Leu Gln Ile Ile Leu Leu Phe Gly Leu
 20 25 30
 Phe Phe Ala Thr Val Leu Leu Gly Phe Leu Thr Arg Ile Met Ile Phe
 35 40 45
 Lys Ser Leu Leu Ser Ile Tyr Asp Lys Ile Leu His Arg Ile Pro Ile
 50 55 60
 Ile Lys Thr Val Tyr Lys Ala Ala Gln Gln Val Met Thr Thr Ile Phe
 65 70 75 80
 Gly Ser Lys Ser Gly Ser Phe Lys Gln Val Val Met Val Pro Phe Pro
 85 90 95
 Asn Ala Asn Val Gln Cys Ile Gly Leu Val Ala Gly Asp Ala Pro Thr
 100 105 110
 Val Cys Cys Thr Gly Glu Lys Glu Asp Asp Pro Leu Val Thr Val Phe

115 120 1
 Ile Pro Thr Thr Pro Asn Pro Thr Ser Gly Phe Leu Thr Leu Phe Arg
 130 135 140
 Lys Ser Asp Ile Val Phe Leu Asp Met Lys Ile Glu Asp Ala Phe Lys
 145 150 155 160
 Tyr Ile Ile Ser Cys Gly Val Leu Ser Thr Pro Met Ala Cys Pro Ser
 165 170 175
 Ser Pro Leu Pro Asp Glu Leu His Gln Asp Gln Gly Ser
 180 185

<210>550

<211>390

<212>PRT

<213>Chlamydia pneumoniae

<400>550

Gln Leu Asn Met Leu His Ile Leu Leu Ala Ile Phe Cys Ile Leu Leu
 1 5 10 15
 Phe Leu Ala Phe Gly Leu Thr Gln Pro Ser Cys His Gly Ser Ser Lys
 20 25 30
 Phe Leu Lys Thr Leu Asn Gln Arg Phe Phe Thr Asp Lys Gly Arg Glu
 35 40 45
 Tyr Pro Pro Phe Pro Ser Ala Pro Thr Ile Leu Ala Thr Leu Leu Cys
 50 55 60
 Ile Leu Tyr Gly Ala Leu Gly Thr Lys Leu Tyr Thr Leu Leu Pro Pro
 65 70 75 80
 Lys Thr Ala His Lys Asp Leu Leu Phe Trp Pro Leu Tyr Ser Leu Ser
 85 90 95
 Ala Leu Ile Ala Tyr Gly Phe Leu Pro Pro Trp Ile Ser Thr Lys Val
 100 105 110
 Pro Lys Glu Thr Thr Ala His Leu Arg Phe Leu Ala Ser Val Phe Gln
 115 120 125
 Leu Gly Leu Phe Pro Leu Gln Leu Leu Phe Tyr Arg Arg Arg Pro Asn
 130 135 140
 Gln Gln Val Arg Ser Ser Thr Ser Phe Gln Ser Gln Leu Ser Glu Ala
 145 150 155 160
 Leu Ser Ala Phe Asp Asn Leu Ile Val Arg Glu Val Met Ile Pro Lys
 165 170 175
 Val Asp Ile Phe Ala Leu Pro Glu Glu Thr Thr Leu Gln Glu Ala Leu
 180 185 190
 Val Leu Val Ser Glu Glu Gly Tyr Ser Arg Val Pro Val Tyr Lys Lys
 195 200 205
 Asn Leu Asp Asn Ile Thr Gly Ile Leu Leu Val Lys Asp Leu Leu Leu
 210 215 220
 Leu Tyr Thr Ser Ser His Asp Leu Ser Gln Pro Ile Ser Ser Val Ala
 225 230 235 240
 Lys Pro Pro Phe Tyr Ala Pro Glu Ile Lys Lys Ala Ser Ser Leu Leu
 245 250 255
 Gln Glu Phe Arg Gln Lys His Arg His Leu Ala Ile Ile Val Asn Glu
 260 265 270
 Tyr Gly Phe Thr Glu Gly Ile Ala Thr Met Glu Asp Ile Ile Glu Glu
 275 280 285
 Ile Ile Gly Glu Ile Ala Asp Glu His Asp Val Gln Glu Asn Thr Pro
 290 295 300
 Tyr Lys Lys Ile Gly Ser Ser Trp Ile Val Asp Gly Arg Met Asn Ile
 305 310 315 320
 Ser Asp Ala Glu Glu Tyr Phe Asn Leu Lys Ile Asp His Glu Asn Ser
 325 330 335
 Tyr Asp Thr Leu Gly Gly His Val Phe His Lys Val Gly Ala Val Pro
 340 345 350
 Gln Lys Gly Met Arg Ile His His Glu Asn Phe Asp Ile Glu Ile Ile
 355 360 365
 Thr Cys Thr Glu Arg Asn Val Gly Lys Leu Lys Ile Thr Pro Arg Lys
 370 375 380
 Arg Lys Phe Asn Ile Ser
 385 390

<210>551

<211>116

<212>PRT

<213>Chlamydia pneumoniae

<400>551

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Met Ser Asp Ile Gln Lys Glu Glu His Gly Ser Thr Thr Ile Phe His
 1           5           10           15
Leu His Gly Lys Leu Asp Gly Ile Ser Ser Pro Glu Val Gln Glu Asn
      20           25           30
Ile Tyr Gln Ser Leu Ala Ala Gly Ser Lys Asn Ile Ile Leu Asp Cys
      35           40           45
Ala His Leu Asp Tyr Met Ser Ser Ala Gly Ile Arg Val Leu Leu Gln
      50           55           60
Ser Tyr His Gln Val Gly Gln His Ser Gly Lys Ile Val Leu Thr Thr
      65           70           75           80
Val Pro Lys Thr Ile Glu Gln Thr Leu Tyr Val Thr Gly Phe Leu Ser
      85           90           95
Tyr Phe Lys Ile Phe Asn Thr Val Asp Glu Ala Ile Gln Thr Leu Asn
      100           105           110
Lys Asp Gly Asp
      115

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<210>552

<211>212

<212>PRT

<213>Chlamydia pneumoniae

<400>552

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Ser Leu Pro Leu Thr Met Arg Arg Ser Val Cys Tyr Val Asn Pro Ser
 1           5           10           15
Ile Ala Arg Ala Gly Gln Ile Ser Thr Trp Lys Phe Leu Tyr Ser Leu
      20           25           30
Ala Thr Pro Leu Pro Ala Gly Thr Lys Cys Lys Phe Asp Leu Ala Gly
      35           40           45
Ser Gly Lys Pro Thr Asp Trp Glu Ala Pro Ala Thr Asp Leu Ser Gln
      50           55           60
Thr Arg Asn Val Ile Tyr Ala Glu Met Pro Glu Gly Glu Ile Ile Glu
      65           70           75           80
Ala Thr Ala Ile Pro Val Lys Asp Asn Pro Val Pro Gln Phe Glu Phe
      85           90           95
Thr Leu Pro Tyr Glu Leu Gln Val Gly Glu Thr Leu Thr Ile Val Met
      100           105           110
Gly Ala Ser Pro Asn His Pro Gln Val Asp Asp Ala Gly Asn Gly Ala
      115           120           125
Gln Leu Phe Ala Gln Arg Arg Lys Pro Phe Tyr Leu Tyr Ile Asp Pro
      130           135           140
Thr Gly Glu Gly Asn Tyr Asp Glu Pro Asp Val Phe Ser Met Asp Ile
      145           150           155           160
Arg Gly Asn Val Leu Lys Lys Ile Glu Ile Phe Thr Pro Ser Tyr Val
      165           170           175
Val Lys Asn Lys Arg Phe Asp Ile Thr Val Arg Phe Glu Asp Glu Phe
      180           185           190
Gly Asn Leu Thr Asn Phe Ser Pro Glu Glu Asp Pro Asn Arg Ala Phe
      195           200           205
Leu Arg Ala Ser
      210

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<210>553

<211>457

<212>PRT

<213>Chlamydia pneumoniae

<400>553

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Arg Ser Leu Leu Pro Pro Met Ser Leu Lys Thr Asn Ala Ser Ile Ser
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Pro Cys Asp Leu Lys Thr Asn Ser Gly Thr Ser Pro Thr Ser Leu Leu
      20           25           30
Lys Lys Thr Arg Ile Glu Leu Ser Tyr Glu His Leu Arg Glu Asn Leu

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35	40																		
Asn	Trp	Gln	Leu	Phe	Ile	Pro	Glu	Thr	Gly	Phe	Val	Ile	Leu	Pro	Asn				
50						55					60								
Leu	Tyr	Phe	Asn	Glu	Pro	Gly	Ile	Tyr	Arg	Ile	Gln	Leu	Lys	Asn	Leu				
65					70					75					80				
Ser	Thr	Gln	Xaa	Ile	Phe	Ile	Ser	Ala	Pro	Ile	Lys	Cys	Phe	Ala	Asp				
				85					90					95					
Ser	Ala	Pro	Asn	Leu	Met	Trp	Gly	Leu	Leu	His	Gly	Glu	Ser	Glu	Arg				
			100					105					110						
Val	Asp	Ser	Glu	Glu	Asn	Ile	Glu	Thr	Cys	Met	Arg	Tyr	Phe	Arg	Asp				
	115					120						125							
Asp	Arg	Ala	Leu	Asn	Phe	Tyr	Ala	Ser	Ser	Ser	Phe	Glu	Asn	Gln	Glu				
	130					135					140								
Asn	Leu	Ser	Pro	Asp	Ile	Trp	Lys	Leu	Ile	Asn	Gln	Thr	Val	Ser	Asp				
145					150				155						160				
Phe	Asn	Glu	Glu	Asp	Arg	Phe	Ile	Thr	Leu	Ser	Gly	Phe	Gln	Tyr	Ser				
				165				170						175					
Gly	Glu	Pro	His	Leu	Glu	Gly	Val	Arg	His	Ile	Leu	His	Thr	Lys	Glu				
			180					185					190						
Thr	Lys	Ser	His	Ser	Lys	His	Lys	Glu	Tyr	Lys	His	Ile	Pro	Leu	Ala				
	195					200						205							
Lys	Leu	Tyr	Lys	Ser	Thr	Val	Asn	His	Asp	Met	Ile	Ser	Ile	Pro	Ser				
	210				215						220								
Phe	Thr	Ala	Ser	Lys	Glu	His	Gly	Phe	Asp	Phe	Glu	Asn	Phe	Tyr	Pro				
225					230				235						240				
Glu	Phe	Glu	Arg	Val	Val	Glu	Ile	Tyr	Asn	Ala	Trp	Gly	Ser	Ser	Glu				
			245						250					255					
Thr	Thr	Ala	Ala	Leu	Asn	Asn	Pro	Phe	Pro	Ile	Gln	Gly	Lys	Asp	Ser				
			260					265						270					
Glu	Asp	Pro	Arg	Gly	Thr	Val	Ile	Glu	Gly	Leu	Lys	Lys	Asn	Leu	Arg				
	275					280						285							
Phe	Gly	Phe	Val	Ala	Gly	Gly	Leu	Asp	Asp	Arg	Gly	Ile	Tyr	Lys	Asp				
	290				295					300									
Tyr	Phe	Asp	Ser	Pro	Gln	Val	Gln	Tyr	Ser	Pro	Gly	Leu	Thr	Ala	Ile				
305					310				315						320				
Ile	Cys	Asn	Lys	Tyr	Thr	Arg	Glu	Ser	Leu	Val	Glu	Ala	Leu	Phe	Ala				
			325					330						335					
Arg	His	Cys	Tyr	Ala	Thr	Thr	Gly	Pro	Arg	Ile	Val	Leu	Ser	Phe	Asn				
			340					345						350					
Ile	Thr	Ser	Ala	Pro	Met	Gly	Ser	Glu	Leu	Ser	Thr	Gly	Ser	Lys	Pro				
	355					360						365							
Gly	Leu	Asn	Val	Asn	Arg	His	Ile	Ser	Gly	His	Val	Ala	Gly	Thr	Ala				
	370					375					380								
Leu	Leu	Lys	Thr	Val	Glu	Ile	Ile	Arg	Asn	Gly	Glu	Val	Leu	His	Thr				
385					390				395						400				
Phe	Phe	Pro	Asp	Ser	Asn	Asn	Leu	Asp	Tyr	Glu	Tyr	Asp	Asp	Met	Val				
			405					410					415						
Pro	Leu	Ser	Ser	Val	Thr	Leu	Lys	Asp	Pro	Asn	Gly	Lys	Ala	Pro	Phe				
			420					425					430						
Val	Phe	Tyr	Tyr	Leu	Arg	Val	Thr	Gln	Ala	Asp	Asn	Ala	Met	Ala	Trp				
	435					440						445							
Ser	Ser	Pro	Ile	Trp	Val	Asp	Leu	Asn											
	450				455														

<210>554

<211>409

<212>PRT

<213>Chlamydia pneumoniae

<400>554

Leu	Ala	Gly	Pro	Ser	Leu	Lys	Gly	Val	Lys	Asn	Gln	Ile	Ala	Ala	Lys
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Lys	Lys	His	Val	Thr	Lys	Gln	Ser	Thr	Val	Leu	Gln	Asn	Leu	Glu	Arg
			20				25						30		
Ile	Val	His	Gln	Ser	Val	His	Gln	Met	Thr	Thr	Cys	Leu	Pro	Gln	Pro
	35						40						45		

Pro Lys Thr Ser Phe Pro Tyr Ser Ile Phe Glu Lys Leu Asp Ala Gln
 50 55 60
 Glu Arg Leu Ser Ser Glu Asp Ala Leu His Leu Leu Leu Thr Asn
 65 70 75 80
 Lys Glu Asp Gln Arg Thr Leu Trp Asn Phe Ala Asp Gln Val Arg Lys
 85 90 95
 Gln Arg Val Gly Asp Thr Val Tyr Tyr Ser Ser Thr Leu Tyr Leu Tyr
 100 105 110
 Pro Thr Asn Phe Cys Asp Phe Ser Cys Lys Phe Cys Ser Phe Tyr Ala
 115 120 125
 Lys Pro Gly Asp Pro Lys Gly Trp Leu Tyr Ser Pro Asp Asp Leu Leu
 130 135 140
 Gln Gln Ile Gln Asn Ile Lys Thr Pro Ile Thr Glu Val His Ile Val
 145 150 155 160
 Gly Gly Cys Phe Pro Ser Cys Asn Leu Gln Tyr Tyr Ser Asp Leu Phe
 165 170 175
 Thr Lys Ile Lys Glu Tyr Asp Pro Gln Ile His Ile Lys Ala Leu Thr
 180 185 190
 Ala Ile Glu Tyr Ala Tyr Leu Ser Asp Leu Asp Asn Leu Ser Ile Arg
 195 200 205
 Asp Val Leu Leu Thr Leu Lys Asp Ala Gly Leu Asp Ser Ile Pro Gly
 210 215 220
 Gly Gly Ala Glu Ile Leu Val Asp Lys Ile Arg Asn Phe Leu Ala Pro
 225 230 235 240
 Lys Arg Leu Ser Ser Ser Asp Phe Leu Asn Ile His Lys Met Ala His
 245 250 255
 Gln Leu Gly Ile His Ser Asn Ile Thr Met Leu Cys Tyr His Lys Glu
 260 265 270
 Gly Pro Glu Asp Leu Val Thr His Met Val Lys Val Arg Asp Leu Gln
 275 280 285
 Asp Glu Thr Gln Gly Phe Lys Asn Phe Ile Leu Leu Lys Phe Ala Gln
 290 295 300
 Glu Asn Asn Val Leu Gly Lys Arg Leu Arg Lys Ser Gly Gln Gly His
 305 310 315 320
 Ala Ile Pro Leu Lys Ser Leu Met Ala Val Ala Arg Ile Phe Leu Asp
 325 330 335
 Asn Phe Ser Asn Met Lys Ala Leu Trp Asn Tyr Leu Gly Ile Glu Ala
 340 345 350
 Ala Leu Asp Leu Leu Ser Cys Gly Ala Asn Asp Leu Ser Ser Thr His
 355 360 365
 Met Gly Glu Lys Val Phe Gln Met Ala Ser Ser Lys Glu Pro Ile Lys
 370 375 380
 Met Asp Ala Glu Gly Met Ala Ala Leu Ile Thr Gln Gln Gly Arg Thr
 385 390 395 400
 Pro Cys Leu Thr Asn Ser Ser His Val
 405

<210>555

<211>277

<212>PRT

<213>Chlamydia pneumoniae

<400>555

Gly Asn Gly Gly Pro His His Thr Thr Arg Glu Asn Ala Met Ser Asn
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 Gln Leu Gln Pro Cys Ile Ser Leu Gly Cys Val Ser Tyr Ile Asn Ser
 20 25 30
 Phe Pro Leu Ser Leu Gln Leu Ile Lys Arg Asn Asp Ile Arg Cys Val
 35 40 45
 Leu Ala Pro Pro Ala Asp Leu Leu Asn Leu Leu Ile Glu Gly Lys Leu
 50 55 60
 Asp Val Ala Leu Thr Ser Ser Leu Gly Ala Ile Ser His Asn Leu Gly
 65 70 75 80
 Tyr Val Pro Gly Phe Gly Ile Ala Ala Asn Gln Arg Ile Leu Ser Ala
 85 90 95
 Asn Leu Tyr Ala Ala Pro Thr Phe Phe Asn Ser Pro Gln Pro Arg Ile

Ala	Ala	Thr	Leu	Glu	Ser	Arg	Ser	Ser	Ile	Gly	Leu	Leu	Lys	Val	Leu
	115						120					125			
Cys	Arg	His	Leu	Trp	Arg	Ile	Pro	Thr	Pro	His	Ile	Leu	Arg	Phe	Ile
	130					135					140				
Thr	Thr	Lys	Val	Leu	Arg	Gln	Thr	Pro	Glu	Asn	Tyr	Asp	Gly	Leu	Leu
145					150					155					160
Leu	Ile	Gly	Asp	Ala	Ala	Leu	Gln	His	Pro	Val	Leu	Pro	Gly	Phe	Val
			165						170						175
Thr	Tyr	Asp	Leu	Ala	Ser	Gly	Trp	Tyr	Asp	Leu	Thr	Lys	Leu	Pro	Phe
		180						185					190		
Val	Phe	Ala	Leu	Leu	Leu	His	Ser	Thr	Ser	Trp	Lys	Glu	His	Pro	Leu
	195						200					205			
Pro	Asn	Leu	Ala	Met	Glu	Glu	Ala	Leu	Gln	Gln	Phe	Glu	Ser	Ser	Pro
	210					215					220				
Glu	Glu	Val	Leu	Lys	Glu	Ala	His	Gln	His	Thr	Gly	Leu	Pro	Pro	Ser
225					230					235					240
Leu	Leu	Gln	Glu	Tyr	Tyr	Ala	Leu	Cys	Gln	Tyr	Arg	Leu	Gly	Glu	Glu
			245					250						255	
His	Tyr	Glu	Ser	Phe	Glu	Lys	Phe	Arg	Glu	Tyr	Tyr	Gly	Thr	Leu	Tyr
		260						265					270		
Gln	Gln	Ala	Arg	Leu											
		275													

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<211>237

<212>PRT

<213>Chlamydia pneumoniae

<400>556

Leu	Lys	Asn	Ser	Gly	Asn	Ile	Met	Glu	Pro	Ser	Thr	Asn	Lys	Pro	Asp
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Cys	Lys	Lys	Ile	Phe	Asp	Ser	Ile	Ala	Ser	Lys	Tyr	Asp	Arg	Thr	Asn
		20						25					30		
Thr	Ile	Leu	Ser	Leu	Gly	Met	His	His	Phe	Trp	Asn	Arg	Ser	Leu	Ile
	35					40						45			
Gln	Ile	Leu	Gly	Ser	Gly	Tyr	Ser	Leu	Leu	Asp	Leu	Cys	Ala	Gly	Thr
	50				55					60					
Gly	Lys	Val	Ala	Lys	Arg	Tyr	Ile	Ala	Ala	His	Pro	Gln	Ala	Ser	Val
65				70					75					80	
Thr	Leu	Val	Asp	Phe	Ser	Ser	Ala	Met	Leu	Asp	Ile	Ala	Lys	Gln	His
			85					90					95		
Leu	Pro	Gln	Gly	Ser	Cys	Ser	Phe	Ile	His	Ser	Asp	Ile	Asn	Gln	Leu
		100					105						110		
Pro	Leu	Glu	Asn	His	Ser	Tyr	Pro	Leu	Ala	Ala	Met	Ala	Tyr	Gly	Leu
	115					120						125			
Arg	Asn	Leu	Ser	Asp	Pro	His	Lys	Ala	Leu	Gln	Glu	Ile	Ser	Arg	Val
130					135						140				
Leu	Met	Pro	Ser	Gly	Lys	Leu	Gly	Ile	Leu	Glu	Leu	Thr	Pro	Pro	Lys
145				150						155					160
Lys	Thr	His	Pro	Thr	Tyr	Ser	Ala	His	Lys	Leu	Tyr	Leu	Arg	Ala	Val
			165						170					175	
Val	Pro	Trp	Ile	Gly	Lys	Ser	Val	Ser	Lys	Asp	Pro	Asp	Ala	Tyr	Ser
	180							185					190		
Tyr	Leu	Ser	Lys	Ser	Ile	Gln	Gln	Leu	Pro	Lys	Asp	His	Asp	Leu	Glu
	195					200						205			
Asp	Leu	Phe	Ser	Lys	Ser	Gly	Phe	Tyr	Ile	Ala	Lys	Lys	Lys	Lys	Leu
	210				215						220				
Phe	Leu	Gly	Ala	Ala	Thr	Ile	Trp	Leu	Leu	Glu	Lys	Gln			
225				230						235					

<210>557

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<212>PRT

<213>Chlamydia pneumoniae

<400>557

Arg Ile Ser Ile Ser Phe Arg Val Ser Trp Phe Val Lys Ile Ile Leu

1									10				15		
Ala	Val	Leu	Gly	Arg	Ala	Ile	Ala	Lys	Ala	Tyr	Tyr	Val	Cys	Met	Val
			20					25					30		
Ala	Arg	Gly	Leu	Cys	Asp	Phe	Pro	Thr	Leu	Val	Pro	Asn	Glu	Arg	Leu
		35					40					45			
Pro	Ile	Gly	Pro	Phe	Phe	Val	Pro	Gln	His	Thr	Ser	Gly	Ala	Lys	Gly
	50					55					60				
Lys	Glu	Phe	Ala	Lys	Arg	Asn	Phe	Ser	Ile	Ile	Ser	Gly	Leu	Asp	Asp
	65				70					75				80	
Ile	Leu	Lys	Leu	Cys	Ile	Leu	Gln	Arg	Arg	Pro	Phe	Ala	Leu	Gln	Trp
			85					90					95		
Asp	Asn	Leu	Ser	Val	Lys	Ser	Asp	Tyr	Glu	Glu	Ala	Gly	Pro	Ala	Ile
		100						105					110		
Gly	Ile	Arg	Ser	Leu	Glu	Pro	Gln	Val	Ser	Gln	Ile	Ser	Pro	Ala	His
	115						120					125			
Gly	Arg	Leu	Cys	Ser	Thr	Leu	Val	Gln	Trp	Ala	Pro	Ile	Leu	Gly	Ser
	130					135					140				
Glu	Glu	Arg	Leu	Val	Trp	Leu	Glu	Glu	Thr	Met	Lys	Arg	Leu	Lys	Phe
	145				150				155					160	
Pro	Lys	Ser	Leu	Gly	Ser	Lys	Asp	Ala	Val	Ile	Val	Asp	Ser	Glu	Met
			165					170						175	
Val	Pro	Val	Asn	Ala	Asn	Pro	Thr	Gln	Glu	Ile	Pro	Ala	Ala	Ser	Glu
		180						185					190		
Thr	Val	Glu	Ser	Ser	Pro	Val	Ala	Pro	Gly	Asn	Thr	Thr	Asp	Thr	Met
	195						200					205			
Pro	Ala	Ala	Ser	Gly	Thr	Thr	Asp	Thr	Thr	Ser	Gly	Val	Ser	Glu	Ala
	210					215					220				
Ala	Ala	Ala	Glu	Ala	Thr	Val	Asp	Ser	Thr	Pro	Gly	Thr	Glu	Glu	Glu
	225				230					235				240	
Pro	Ser	Phe	Ser	Leu	Arg	Tyr	Ala	Leu	Val	Val	Gln	Asn	Val	Pro	Tyr
		245						250						255	
Pro	Glu	Pro	Pro	Lys	Glu	Pro	Glu	Val	Met	Phe	Thr	Asp	Glu	Glu	Lys
		260					265						270		
Ser	Leu	Ile	Leu	Glu	Ala	Thr	Arg	Ala	Arg	Arg	Met	Glu	Leu	Asp	Leu
	275						280					285			
Tyr	Asn	Gly	Tyr	Leu	Ala	Asp	Tyr	Glu	Leu	Ser	Lys	Asp	Glu	Ile	Gln
	290					295					300				
Lys	His	Val	Pro	Asp	Leu	Pro	Glu	Asn	Trp	Arg	Thr	Asn	Trp	Arg	Trp
	305				310					315				320	
Ser	Glu	Arg	Leu	Tyr	Lys	Phe	Phe	Phe	Lys	Thr	Lys	Lys	Glu	Gly	Leu
		325						330					335		
Glu	Glu	Ile	Phe	Leu	Asn	Lys	Glu	Leu	Gly	Asn	Met	Ile	Leu	Ala	Arg
		340					345						350		
Gly	Leu	Ala	Ala	Thr	Gln	Ser	Gln	Ala	Arg	Ile	Lys	Val	Phe	Asn	Ser
	355						360					365			
Leu	Val	Ala	Trp	Leu	Leu	Gln	Ser	Phe	Asn	Val	Gly	Arg	Ser	Cys	Thr
	370					375					380				
Ala	Lys	Pro	Leu	Pro	Thr	Ser	Lys	Leu	Asp	Leu	Phe	Lys	Ser	Glu	Phe
	385				390					395				400	
Glu	Ser	Lys	Pro	Lys	Asn	Asn	Ile	Leu	Thr	Glu	Phe	Leu	Val	Ala	Ser
		405						410						415	
Asp	Glu	Glu	Ile	Leu	Phe	Lys	Gly	Leu	Arg	Val	Leu	Glu	Pro	Gly	Ile
		420					425						430		
Glu	Gly	Trp	Tyr	Asp	His	Pro	Asp	Gln	Ala	Gly	Glu	Ile	Arg	Ser	Val
	435						440					445			
Leu	Glu	Gly	Leu	Val	Gln	Ala	Gly	Arg	Ile	Ser	Gly	Tyr	Trp	Glu	Asn
	450					455					460				
Gln	Pro	Phe	Gly	Arg	Phe	Val	Leu	Arg	Gly	Val	Gly	Glu	Arg	Arg	Thr
	465				470					475				480	
Glu	Leu	Val	Glu	Leu	Glu	Ser	Leu	Val	Ala	Ser	Gly	Glu	Ile	Met	
		485						490					495		
Gln	Phe	Phe	Glu	Ser	Ser	Asp	Glu	Glu	Gly	Ala	Phe	Ile	Ile	Asp	Asn
		500					505						510		
Glu	Pro	Ser	Lys	Thr	Ala	Met	Leu	Lys	Gln	Arg	Phe	Lys	Ser	Cys	Val

515 520
 Arg Thr Lys Leu Val Gly Ser Phe Ala Asp Glu Ser Leu Pro Arg Gly
 530 535 540
 Arg Phe Thr Ile Leu Val
 545 550
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 <213>Chlamydia pneumoniae
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 Leu Arg Leu Met Asp Ala Phe Ser Lys Ser Asp Asp Glu Arg Asp Phe
 20 25 30
 Tyr Leu Asp Arg Val Glu Gly Phe Ile Leu Tyr Ile Asp Leu Asp Lys
 35 40 45
 Asp Gln Glu Asp Leu Asn Lys Ile Tyr Gln Glu Leu Glu Glu Asn Ala
 50 55 60
 Glu Arg Tyr Cys Leu Ile Pro Lys Leu Thr Phe Tyr Glu Val Lys Lys
 65 70 75 80
 Ile Met Glu Thr Phe Ile Asn Glu Lys Ile Tyr Asp Ile Asp Thr Lys
 85 90 95
 Glu Lys Phe Leu Glu Ile Leu Gln Ser Lys Asn Ala Arg Glu Gln Phe
 100 105 110
 Leu Glu Phe Ile Tyr Asp His Glu Ala Glu Leu Glu Lys Trp Gln Gln
 115 120 125
 Phe Tyr Val Glu Arg Ser Arg Ile Arg Ile Ile Glu Trp Leu Arg Asn
 130 135 140
 Asn Lys Phe His Phe Val Phe Glu Glu Asp Leu Asp Phe Thr Lys Asn
 145 150 155 160
 Val Leu Glu Gln Leu Lys Ile His Leu Phe Asp Ala Lys Val Gly Lys
 165 170 175
 Glu Ile Thr Gln Ala Arg Gln Leu Leu Ser Asn Lys Ala Lys Ile Tyr
 180 185 190
 Tyr Ser Asn Glu Ala Leu Asn Pro Arg Pro Lys Arg Gly Arg Pro Pro
 195 200 205
 Lys Gln Ser Ala Lys Val Glu Thr Glu Thr Thr Ile Ser Ser Asp Ile
 210 215 220
 Tyr Thr Lys Val Pro Gln Ala Ala Arg Arg Phe Leu Phe Leu Pro Glu
 225 230 235 240
 Ile Thr Ser Pro Ser Ser Ile Thr Phe Ser Glu Lys Phe Asp Thr Glu
 245 250 255
 Glu Glu Phe Leu Ala Asn Leu Arg Gly Ser Thr Arg Val Glu Asp Gln
 260 265 270
 Leu Asn Leu Thr Asn Leu Ser Glu Arg Phe Ala Ser Leu Lys Glu Leu
 275 280 285
 Ser Ala Lys Leu Gly Tyr Asp Ser Leu Ser Thr Gly Asp Phe Phe Gly
 290 295 300
 Asp Asp Asp Glu Lys Val Val Thr Lys Thr Lys Gly Ser Lys Arg Gly
 305 310 315 320
 Arg Lys Lys Ser Ser
 325

<210>559
 <211>261
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>559
 Leu Val Tyr Trp Met Ala Phe Tyr Ser Pro Ser Thr Ile Ser Lys Tyr
 1 5 10 15
 Phe Ile Tyr Ser Gly Ala Gly Asn Arg Phe Leu Leu Gly Glu Thr Leu
 20 25 30
 Pro Glu Val Glu Asp Val Arg Phe Leu Cys Gln Glu Thr Arg Val Asp
 35 40 45
 Gly Phe Leu Tyr Leu Lys Pro Ser Ser Cys Ala Asp Ala Gln Leu Ile

50 55 60
 Ile Phe Asn Ser Asp Gly Ser Arg Pro Thr Met Cys Gly Asn Gly Leu
 65 70 75 80
 Arg Cys Ala Ile Ala His Leu Ala Ser Gln Lys Gly Lys Ser Asp Ile
 85 90 95
 Ser Val Ser Thr Asp Ser Gly Leu Tyr Ser Gly Tyr Phe Tyr Ser Trp
 100 105 110
 Asp Arg Val Leu Val Asp Met Thr Leu Ala Asp Trp Arg Ala Ser Val
 115 120 125
 His Arg Leu Glu Ser Arg Pro Asp Pro Leu Pro Lys Glu Ile Val Cys
 130 135 140
 Ile His Thr Gly Val Pro His Ala Val Val Ile Leu Pro Glu Ile Ser
 145 150 155 160
 Thr Leu Asp Leu Ser Ile Leu Gly Pro Phe Leu Arg Tyr His Gln Thr
 165 170 175
 Phe Ser Pro Asp Gly Val Asn Val Asn Phe Val Gln Ile Leu Gly His
 180 185 190
 Cys Gln Leu Arg Val Arg Thr Tyr Glu Arg Gly Val Glu Gly Glu Thr
 195 200 205
 Ala Ala Cys Gly Thr Gly Ala Leu Ala Ser Ala Leu Val Val Ser Asn
 210 215 220
 Ser Tyr Gly Trp Lys Glu Ser Ile Gln Ile His Thr Trp Gly Gly Glu
 225 230 235 240
 Leu Met Thr Val Ser Gln Asn Arg Gly Arg Val Tyr Leu Gln Gly Ser
 245 250 255
 Val Thr Arg Asp Leu
 260

<210>560

<211>196

<212>PRT

<213>Chlamydia pneumoniae

<400>560

Glu Arg His Tyr Phe Met Ala Asp Gly Glu Val His Lys Leu Arg Asp
 1 5 10 15
 Ile Ile Glu Lys Glu Leu Leu Glu Ala Arg Arg Val Phe Phe Ser Glu
 20 25 30
 Pro Val Thr Glu Lys Ser Ala Ser Asp Ala Ile Lys Lys Leu Trp Tyr
 35 40 45
 Leu Glu Leu Lys Asp Pro Gly Lys Pro Ile Val Phe Val Ile Asn Ser
 50 55 60
 Pro Gly Gly Ser Val Asp Ala Gly Phe Ala Val Trp Asp Gln Ile Lys
 65 70 75 80
 Met Leu Thr Ser Pro Val Thr Thr Val Val Thr Gly Leu Ala Ala Ser
 85 90 95
 Met Gly Ser Val Leu Ser Leu Cys Ala Ala Pro Gly Arg Arg Phe Ala
 100 105 110
 Thr Pro His Ser Arg Ile Met Ile His Gln Pro Ser Ile Gly Gly Pro
 115 120 125
 Ile Thr Gly Gln Ala Thr Asp Leu Asp Ile His Ala Arg Glu Ile Leu
 130 135 140
 Lys Thr Lys Ala Arg Ile Ile Asp Val Tyr Val Glu Ala Thr Asn Gln
 145 150 155 160
 Pro Arg Asp Ile Ile Glu Lys Ala Ile Asp Arg Asp Met Trp Met Thr
 165 170 175
 Ala Asn Glu Ala Lys Asp Phe Gly Leu Leu Asp Gly Ile Leu Phe Ser
 180 185 190
 Phe Asn Asp Leu
 195

<210>561

<211>519

<212>PRT

<213>Chlamydia pneumoniae

<400>561

Leu Leu Lys Val Phe Glu Lys Phe Lys Lys Phe Ala Ile Val Glu Ile

1	Phe	Thr	Lys	Val	Val	Ala	Val	Val	Ser	Leu	Leu	His	Lys	Phe	Leu	Glu
				20					25					30		
Asn	Ala	Ser	Gly	Lys	Lys	Gly	Gln	Ser	Leu	Ala	Ser	Thr	Ala	Tyr	Leu	
	35						40					45				
Ala	Ala	Leu	Asp	His	Leu	Leu	Asn	Ala	Phe	Pro	Ser	Ile	Gly	Glu	Arg	
	50					55					60					
Ile	Ile	Asp	Glu	Leu	Lys	Ser	Gln	Arg	Ser	His	Leu	Lys	Met	Ile	Ala	
	65				70					75					80	
Ser	Glu	Asn	Tyr	Ser	Ser	Leu	Ser	Val	Gln	Leu	Ala	Met	Gly	Asn	Leu	
		85						90					95			
Leu	Thr	Asp	Lys	Tyr	Cys	Glu	Gly	Ser	Pro	Phe	Lys	Arg	Phe	Tyr	Ser	
		100						105					110			
Cys	Cys	Glu	Asn	Val	Asp	Ala	Ile	Glu	Trp	Glu	Cys	Val	Glu	Thr	Ala	
	115						120					125				
Lys	Glu	Leu	Phe	Ala	Ala	Asp	Cys	Ala	Cys	Val	Gln	Pro	His	Ser	Gly	
	130					135					140					
Ala	Asp	Ala	Asn	Leu	Leu	Ala	Val	Met	Ala	Ile	Leu	Thr	His	Lys	Val	
	145				150					155					160	
Gln	Gly	Pro	Ala	Val	Ser	Lys	Leu	Gly	Tyr	Lys	Thr	Val	Asn	Glu	Leu	
			165					170						175		
Thr	Glu	Glu	Glu	Tyr	Thr	Leu	Leu	Lys	Ala	Glu	Met	Ser	Ser	Cys	Val	
		180						185					190			
Cys	Leu	Gly	Pro	Ser	Leu	Asn	Ser	Gly	Gly	His	Leu	Thr	His	Gly	Asn	
	195					200						205				
Val	Arg	Leu	Asn	Val	Met	Ser	Lys	Leu	Met	Arg	Cys	Phe	Pro	Tyr	Asp	
	210					215					220					
Val	Asn	Pro	Asp	Thr	Glu	Cys	Phe	Asp	Tyr	Ala	Glu	Ile	Ser	Arg	Leu	
	225				230					235					240	
Ala	Lys	Glu	Tyr	Lys	Pro	Lys	Val	Leu	Ile	Ala	Gly	Tyr	Ser	Ser	Tyr	
			245						250						255	
Ser	Arg	Arg	Leu	Asn	Phe	Ala	Val	Leu	Lys	Gln	Ile	Ala	Glu	Asp	Cys	
			260					265					270			
Gly	Ser	Val	Leu	Trp	Val	Asp	Met	Ala	His	Phe	Ala	Gly	Leu	Val	Ala	
	275					280						285				
Gly	Gly	Val	Phe	Val	Asp	Glu	Glu	Asn	Pro	Ile	Pro	Tyr	Ala	Asp	Ile	
	290				295						300					
Val	Thr	Thr	Thr	Thr	His	Lys	Thr	Leu	Arg	Gly	Pro	Arg	Gly	Gly	Leu	
	305				310					315					320	
Val	Leu	Ala	Thr	Arg	Glu	Tyr	Glu	Ser	Thr	Leu	Asn	Lys	Ala	Cys	Pro	
				325					330						335	
Leu	Met	Met	Gly	Gly	Pro	Leu	Pro	His	Val	Ile	Ala	Ala	Lys	Thr	Val	
			340					345					350			
Ala	Leu	Lys	Glu	Ala	Leu	Ser	Val	Asp	Phe	Lys	Lys	Tyr	Ala	His	Gln	
	355						360					365				
Val	Val	Asn	Asn	Ala	Arg	Arg	Leu	Ala	Glu	Arg	Phe	Leu	Ser	His	Gly	
	370					375					380					
Leu	Arg	Leu	Leu	Thr	Gly	Gly	Thr	Asp	Asn	His	Met	Met	Val	Ile	Asp	
	385				390					395					400	
Leu	Gly	Ser	Leu	Gly	Ile	Ser	Gly	Lys	Ile	Ala	Glu	Asp	Ile	Leu	Ser	
			405						410					415		
Ser	Val	Gly	Ile	Ala	Val	Asn	Arg	Asn	Ser	Leu	Pro	Ser	Asp	Ala	Ile	
			420					425					430			
Gly	Lys	Trp	Asp	Thr	Ser	Gly	Ile	Arg	Leu	Gly	Thr	Pro	Ala	Leu	Thr	
	435						440					445				
Thr	Leu	Gly	Met	Gly	Ile	Asp	Glu	Met	Glu	Glu	Val	Ala	Asp	Ile	Ile	
	450					455					460					
Val	Lys	Val	Leu	Arg	Asn	Ile	Arg	Leu	Ser	Cys	His	Val	Glu	Gly	Ser	
	465				470					475					480	
Ser	Lys	Lys	Asn	Lys	Gly	Glu	Leu	Pro	Glu	Ala	Ile	Ala	Gln	Glu	Ala	
			485					490						495		
Arg	Asp	Arg	Val	Arg	Asn	Leu	Leu	Leu	Arg	Phe	Pro	Leu	Tyr	Pro	Glu	
			500					505					510			
Ile	Asp	Leu	Glu	Ala	Leu	Val										

515

<210>562

<211>367

<212>PRT

<213>Chlamydia pneumoniae

<400>562

Lys Val Phe Tyr Lys Lys Asn Val Met Ser Gly Pro Ser Arg Thr Glu
 1 5 10 15
 Ser Ser Gln Val Ser Val Leu Ser Tyr Val Pro Arg Asp Lys Glu Ile
 20 25 30
 Ala Pro Lys Lys Gln Phe Thr Ile Ala Lys Ile Ser Thr Leu Ala Ile
 35 40 45
 Leu Ala Ser Leu Ala Leu Gly Ala Leu Val Ala Gly Ile Ser Leu Thr
 50 55 60
 Ile Val Leu Gly Asn Pro Val Phe Leu Ala Leu Ile Thr Thr Ala
 65 70 75 80
 Leu Phe Ser Val Val Thr Phe Leu Val Tyr His Gln Met Thr Ser Lys
 85 90 95
 Val Ser Ser Asn Trp Gln Lys Val Leu Glu Gln Asn Phe Lys Pro Leu
 100 105 110
 Gly Lys Ala Trp Gln Glu Lys Asn Val Asp Cys Xaa Ser Asn Glu Met
 115 120 125
 Gln Phe Tyr Asn Asn His Leu Asn Pro Lys Phe Lys Val Ala Ile Gln
 130 135 140
 Thr Asp Ala Xaa Gln Pro Phe Gln Pro Thr Phe Leu Thr Gly Leu Arg
 145 150 155 160
 Val Ile Glu Lys Asn Gln Ser Thr Gly Ile Ile Phe Asn Pro Val Gly
 165 170 175
 Pro Thr Asn Leu Ile Asp Asn Thr Ala Thr Asn Leu Ser Thr Ile Leu
 180 185 190
 Tyr Ser Thr Leu Lys Asp Lys Ser Val Trp Asp Thr Cys Lys Gln Arg
 195 200 205
 Glu Gly Gly Pro Ala Lys Gly Glu Asp Pro Phe Ser Pro Thr Glu Val
 210 215 220
 Arg Val Val Lys Leu Pro Asn Glu Ala Leu Asp Gln Thr Phe Asn Leu
 225 230 235 240
 Asn Leu Ser Ser Ala Glu Lys Lys Ser Ile Leu Pro Thr Phe Leu Gly
 245 250 255
 His Val Cys Gly Pro Lys Ser Glu Glu Leu Pro Asn Gln Gln Glu Tyr
 260 265 270
 Tyr Arg Gln Ala Leu Leu Ala Tyr Glu Asn Cys Leu Lys Ala Ala Ile
 275 280 285
 Glu Ser His Ala Ala Ile Val Ala Leu Pro Leu Phe Thr Ser Val Tyr
 290 295 300
 Glu Val Pro Pro Glu Glu Ile Leu Pro Lys Glu Gly Thr Phe Tyr Trp
 305 310 315 320
 Asp Asn Gln Thr Gln Ala Phe Cys Lys Arg Ala Leu Leu Asp Ala Ile
 325 330 335
 Gln Asn Thr Ala Leu Arg Tyr Pro Gln Arg Ser Leu Leu Val Ile Leu
 340 345 350
 Gln Asp Pro Phe Asn Thr Ile Glu Ser Gln Ser Arg Ser Glu Glu
 355 360 365

<210>563

<211>258

<212>PRT

<213>Chlamydia pneumoniae

<400>563

Gly Ile Ile Phe Met His Asp Ala Leu Leu Ser Ile Leu Ala Ile Gln
 1 5 10 15
 Glu Leu Asp Ile Lys Met Ile Arg Leu Met Arg Val Lys Lys Glu His
 20 25 30
 Gln Lys Glu Leu Ala Lys Val Gln Ser Leu Lys Ser Asp Ile Arg Arg
 35 40 45
 Lys Val Gln Glu Lys Glu Leu Glu Met Glu Asn Leu Lys Thr Gln Ile

50	Arg	Asp	Gly	Glu	Asn	Arg	Ile	Gln	Glu	Ile	Ser	Glu	Gln	Ile	Asn	Lys
65	Leu	Glu	Asn	Gln	Gln	Ala	Ala	Val	Lys	Lys	Met	Asp	Glu	Phe	Asn	Ala
85	Leu	Thr	Gln	Glu	Met	Thr	Thr	Ala	Asn	Lys	Glu	Arg	Arg	Ser	Leu	Glu
100	His	Gln	Leu	Ser	Asp	Leu	Met	Asp	Lys	Gln	Ala	Gly	Gly	Glu	Asp	Leu
115	Ile	Val	Ser	Leu	Lys	Glu	Ser	Leu	Ala	Ser	Thr	Glu	Asn	Ser	Ser	Ser
130	Val	Ile	Glu	Lys	Glu	Ile	Phe	Glu	Ser	Ile	Lys	Lys	Ile	Asn	Glu	Glu
145	Gly	Lys	Ala	Leu	Leu	Glu	Gln	Arg	Thr	Glu	Leu	Lys	His	Ala	Thr	Asn
165	Pro	Glu	Leu	Leu	Ser	Ile	Tyr	Glu	Arg	Leu	Leu	Asn	Asn	Lys	Lys	Asp
180	Arg	Val	Val	Val	Pro	Ile	Glu	Asn	Arg	Val	Cys	Ser	Gly	Cys	His	Ile
195	Val	Leu	Thr	Pro	Gln	His	Glu	Asn	Leu	Val	Arg	Xaa	Lys	Asp	Arg	Leu
210	Ile	Phe	Cys	Glu	His	Cys	Ser	Arg	Ile	Leu	Tyr	Trp	Gln	Glu	Ser	Gln
225	Val	Asn	Ala	Gln	Glu	Asn	Ser	Thr	Ala	Lys	Arg	Arg	Arg	Arg	Arg	Ala
245	Ala	Val														

<210>564

<211>329

<212>PRT

<213>Chlamydia pneumoniae

<400>564

Met	Pro	Ser	Pro	Met	Ile	Ser	Thr	Asp	Val	Cys	Gln	Asp	Ile	Leu	Gly
1				5					10					15	
Lys	Gln	Lys	Glu	Ala	Val	Asp	Phe	Phe	Phe	Gln	Ala	Phe	Gln	Pro	Lys
			20					25					30		
Glu	Ala	Met	Gln	Leu	Ala	Glu	Lys	Ile	Leu	Gly	His	Ser	Gly	Trp	Val
		35					40					45			
Phe	Phe	Ser	Gly	Val	Gly	Lys	Ser	Gly	Cys	Val	Ala	Arg	Lys	Leu	Val
	50				55				60						
Ala	Thr	Leu	Gln	Ser	Leu	Ser	Glu	Arg	Ala	Leu	Phe	Phe	Ser	Pro	Val
65				70					75					80	
Asp	Leu	Leu	His	Gly	Asp	Leu	Gly	Leu	Val	Ser	Pro	Gly	Asp	Ile	Val
			85					90						95	
Cys	Leu	Phe	Ser	Lys	Ser	Gly	Glu	Thr	Gln	Glu	Leu	Leu	Asp	Thr	Val
		100					105						110		
Pro	His	Leu	Lys	Ser	Arg	Arg	Ala	Ile	Leu	Val	Ala	Ile	Thr	Ser	Met
	115						120					125			
Pro	Tyr	Ser	Asn	Leu	Ala	Ala	Leu	Ser	Asp	Leu	Val	Val	Ile	Leu	Pro
	130				135				140						
Ser	Val	Ala	Glu	Leu	Asp	Pro	Phe	Asn	Leu	Ile	Pro	Thr	Asn	Ser	Thr
145				150					155					160	
Thr	Cys	Gln	Met	Ile	Phe	Gly	Asp	Phe	Leu	Ala	Met	Leu	Leu	Phe	His
			165					170						175	
Ser	Arg	Gly	Val	Ser	Leu	Ser	Thr	Tyr	Gly	Lys	Asn	His	Pro	Ser	Gly
		180						185					190		
Gln	Val	Gly	Met	Lys	Ala	Asn	Gly	Lys	Val	Lys	Asp	Phe	Met	Phe	Pro
	195						200					205			
Lys	Thr	Glu	Val	Pro	Phe	Cys	His	Leu	Gly	Asp	Lys	Val	Ser	Phe	Ser
	210				215					220					
Leu	Glu	Val	Phe	Ser	Ala	Tyr	Gly	Cys	Gly	Cys	Val	Cys	Ile	Val	Asp
225				230					235					240	
Pro	Gln	Phe	Arg	Leu	Met	Gly	Ile	Phe	Thr	Asp	Gly	Asp	Leu	Arg	Arg
			245					250						255	

Ser Leu Ala Ser Tyr Gly Gly Glu Val Leu Ser Leu Ser Leu Glu Lys
 260 265 270
 Val Met Thr Ala Asn Pro Arg Cys Ile Thr Glu Asp Ser Asp Ile Ala
 275 280 285
 Ile Ala Leu Gln Leu Met Glu Ser Ser Ser Pro Val Ala Val Leu Pro
 290 295 300
 Val Leu Asp Asn Glu Glu Asn Arg His Val Thr Gly Leu Leu His Met
 305 310 315 320
 His Thr Leu Ala Lys Ala Gly Leu Leu
 325

<210>565

<211>393

<212>PET

<213>Chlamydia pneumoniae

<400>565

Met Ile Phe Glu Phe Arg Phe Pro Lys Ile Gly Glu Thr Ser Ser Gly
 1 5 10 15
 Gly Ser Ile Val Arg Trp Leu Lys Asn Leu Gly Asp His Val Ala Arg
 20 25 30
 Asp Glu Pro Leu Ile Glu Val Ser Thr Asp Lys Ile Ala Thr Glu Leu
 35 40 45
 Pro Ser Pro Lys Ala Gly Arg Leu Val Arg Phe Cys Val Asn Glu Gly
 50 55 60
 Asp Glu Val Ala Ser Gly Asp Val Leu Gly Leu Ile Glu Leu Glu Glu
 65 70 75 80
 Ile Ser Glu Ala Asp Asp Glu Ser Thr Ser Cys Pro Leu Thr Ser Cys
 85 90 95
 Glu Thr Lys Ser Glu Ala Gly Ser Ser Ser Ser Ser Val Trp Phe Ser
 100 105 110
 Pro Ala Val Leu Ser Leu Ala Gln Arg Glu Gly Ile Gly Leu Asp Asn
 115 120 125
 Leu Gln Lys Ile Ala Gly Thr Gly Lys Gly Gly Arg Val Thr Arg Gln
 130 135 140
 Asp Leu Glu Ala Tyr Ile Ser Glu Ser Gln Gln Val Ser Ile Pro Glu
 145 150 155 160
 Ile Phe Gln Gly Glu Val Asn Arg Ile Pro Met Ser Pro Leu Arg Arg
 165 170 175
 Ala Ile Ala Ser Ser Leu Ser Lys Ser Ser Asp Glu Val Pro His Ala
 180 185 190
 Ser Leu Val Val Asp Val Asp Val Thr Asp Leu Met Asn Leu Ile Ser
 195 200 205
 Gly Glu Arg Gln Arg Phe Leu Asp Thr His Gly Val Lys Leu Thr Ile
 210 215 220
 Thr Ser Phe Ile Val Gln Cys Leu Ala Gln Thr Leu Arg Gln Phe Pro
 225 230 235 240
 Leu Leu Asn Gly Ser Leu Asp Gly Thr Thr Ile Val Met Lys Lys Ser
 245 250 255
 Val Asn Val Gly Val Ala Val Asn Leu Asn Lys Glu Gly Val Val Val
 260 265 270
 Pro Val Ile His Asn Cys Gln Asp Arg Gly Leu Val Ser Ile Ala Lys
 275 280 285
 Ala Leu Ala Asp Leu Ser Ser Arg Ala Arg Leu Asn Lys Leu Asp Pro
 290 295 300
 Ser Glu Val Gln Asp Gly Ser Val Thr Val Thr Asn Phe Gly Met Thr
 305 310 315 320
 Gly Ala Leu Ile Gly Met Pro Ile Ile Arg Tyr Pro Glu Val Ala Ile
 325 330 335
 Leu Gly Ile Gly Thr Ile Gln Lys Arg Val Val Val Arg Asp Asp Asp
 340 345 350
 Ser Leu Ala Ile Arg Lys Met Val Tyr Val Thr Leu Thr Phe Asp His
 355 360 365
 Arg Val Leu Asp Gly Ile Tyr Gly Ser Glu Phe Leu Thr Ser Leu Lys
 370 375 380
 Asn Arg Leu Glu Ser Val Thr Met Gly

<210>566

<211>90

<212>PRT

<213>Chlamydia pneumoniae

<400>566

Ala Lys Leu Ser Thr Ala Gly Glu Asn His Thr Glu Glu Leu Leu Glu
 1 5 10 15
 Pro Ala Ser Asp Phe Val Ser Gln Glu Val Arg Gly His Glu Val Leu
 20 25 30
 Ser Ser Ser Ala Ser Glu Ile Ser Ser Ser Ile Asn Pro Lys Thr
 35 40 45
 Ser Pro Glu Ala Thr Ser Ser Pro Ser Leu Thr Gln Lys Arg Thr Ser
 50 55 60
 Arg Pro Ala Leu Gly Glu Gly Asn Ser Val Ala Ile Leu Ser Val Asp
 65 70 75 80
 Thr Ser Ile Arg Gly Ser Ser Leu Ala Thr
 85 90

<210>567

<211>415

<212>PRT

<213>Chlamydia pneumoniae

<400>567

Leu Met Lys Leu Trp Met Lys Ile Phe Ile Gly Leu Phe Val Gly Val
 1 5 10 15
 Thr Leu Gly Leu Val Leu Glu Asp Lys Ala Ile Phe Phe Lys Pro Ile
 20 25 30
 Gly Asp Ile Phe Leu Asn Leu Leu Ser Met Val Val Tyr Pro Leu Val
 35 40 45
 Phe Cys Ser Met Val Leu Gly Ile Ala Ser Ile Ser Asp Met Lys Lys
 50 55 60
 Leu Gly Arg Ile Gly Ile Lys Ser Val Gly Leu Tyr Leu Gly Thr Thr
 65 70 75 80
 Ala Leu Ala Ile Val Ile Gly Leu Cys Phe Ala Trp Ile Phe Ser Pro
 85 90 95
 Gly Asn Gly Cys Asp Phe Ala Gln Ala Gln Ser Met Asp Ser Ala Val
 100 105 110
 Thr Val Ile Asp Ser Asn Lys Thr Ala Ala Tyr Phe Leu Ser Ile Ile
 115 120 125
 Ala Gln Val Phe Pro Ser Asn Pro Val Arg Ser Phe Ala Glu Gly Asn
 130 135 140
 Ile Leu Gln Ile Ile Ile Phe Ala Ile Phe Leu Gly Ile Ala Leu Arg
 145 150 155 160
 Leu Ser Gly Glu Arg Gly Arg Pro Val Glu Arg Phe Ile Asp Gly Phe
 165 170 175
 Ser Glu Ile Met Leu Arg Met Val Asn Met Ile Met Ser Phe Ala Pro
 180 185 190
 Tyr Gly Val Gly Ala Ser Met Ala Trp Ile Ser Gly Asn His Gly Leu
 195 200 205
 Gly Val Leu Trp Gln Leu Gly Lys Phe Ile Ile Ala Tyr Tyr Leu Ala
 210 215 220
 Cys Leu Phe His Ala Thr Leu Val Phe Gly Gly Leu Val Arg Phe Gly
 225 230 235 240
 Cys Lys Met Ser Phe Ser Lys Phe Leu Ser Ser Met Met Asp Ala Ile
 245 250 255
 Ser Cys Ala Val Ser Thr Ala Ser Ser Ser Ala Thr Leu Pro Val Thr
 260 265 270
 Met Arg Cys Val Ser Lys Asn Leu Gly Val Ser Ala Glu Val Ser Gly
 275 280 285
 Phe Val Leu Pro Leu Gly Ala Thr Val Asn Met Asn Gly Thr Ala Ile
 290 295 300
 Phe Gln Gly Met Ala Ala Val Phe Ile Ala Gln Ala Tyr Asn Cys Pro
 305 310 315 320
 Leu Ser Leu Ser Ser Leu Leu Leu Leu Val Val Thr Ala Thr Phe Ser

32 330 335
 Ala Val Gly Ser Ala Gly Val Pro Gly Gly Gly Met Ile Thr Leu Gly
 340 345 350
 Ser Val Leu Ala Ser Val Gly Leu Pro Ile Gln Gly Ile Ala Ile Leu
 355 360 365
 Ala Gly Ile Asp Arg Leu Arg Asp Ile Val Gly Thr Pro Met Asn Ile
 370 375 380
 Leu Gly Asp Ala Val Val Ala Thr Tyr Val Ala Ser Gly Glu Gly Glu
 385 390 395 400
 Leu Ser Pro Tyr Glu Ser Ile Lys Gln Glu Ser Val Glu Thr Thr
 405 410 415
 <310>568
 <311>365
 <312>PRT
 <313>Chlamydia pneumoniae
 <400>568
 Met Lys Lys Arg Phe Pro Ser Thr Leu Phe Leu Phe Tyr Arg Arg Val
 1 5 10 15
 Thr Ile Ala Ile Ser Leu Glu Gly Ile Leu Gly Trp Gly Trp Leu Gly
 20 25 30
 Ser Leu Leu Ser Lys Val Phe Ala Phe Leu Val Ala Cys Trp Asn Arg
 35 40 45
 Phe Ser Trp Ser Thr Pro Tyr Arg Ala Arg Ser Thr Val Ile Ser Val
 50 55 60
 Gly Asn Ile Val Val Gly Gly Ala Gly Lys Thr Pro Thr Val Leu Trp
 65 70 75 80
 Leu Ala Glu Ala Leu Arg Leu Arg Gly Tyr Ser Cys Gly Val Leu Ser
 85 90 95
 Arg Gly Tyr Lys Ser Gln Ser Ser Arg Gln Lys Lys Leu Thr Val Val
 100 105 110
 Asp Ser Lys Val His Ser Ala Ser Tyr Val Gly Asp Glu Pro Leu Leu
 115 120 125
 Met Ala Glu Lys Leu Pro Glu Gly Ser Val Trp Val His Lys Asp Arg
 130 135 140
 Arg Ile Ser Ala Ala Arg Ala Ala Glu Lys Phe Gly Ile Leu Leu Leu
 145 150 155 160
 Asp Asp Gly Leu Gln Tyr Arg Lys Leu His Lys Asp Val Glu Ile Ala
 165 170 175
 Val Val Asn Gly Gln Asp Pro Leu Gly Gly Arg Ala Phe Phe Pro Lys
 180 185 190
 Gly Arg Leu Arg Asp Phe Pro Leu Arg Leu Lys Thr Val Asp Als Ile
 195 200 205
 Ile Val Asn Gly Gly Gly Lys Glu Ala Gly Thr Val Val Lys Arg Val
 210 215 220
 Ser Asn Ala Pro Gln Ile Phe Val Lys Pro Thr Ile Ala Ser Val Val
 225 230 235 240
 Trp Thr His Asn Gly Glu Arg Ile Pro Lys Glu Ala Leu Arg Glu Leu
 245 250 255
 Arg Val Gly Val Phe Cys Gly Leu Gly Phe Pro Gln Gly Phe Leu Asn
 260 265 270
 Met Leu Arg Glu Glu Gly Ile His Ile Leu Gly Lys Tyr Leu Leu Pro
 275 280 285
 Asp His Ala Ala Ile Thr Lys Lys Glu Leu Asn Tyr Phe Cys Gln Gln
 290 295 300
 Met Ala Met Arg Gln Gly Gln Gly Leu Leu Cys Thr Glu Lys Asp Ser
 305 310 315 320
 Val Lys Leu Pro Arg Leu Ser Gly Glu Val Ser Leu Leu Pro Ile Ala
 325 330 335
 Lys Val Glu Met Arg Leu Ser Val Asn Gln Asp Asp Thr Leu Ser Leu
 340 345 350
 Leu Asn Met Ile Glu Gln Ile His Lys Asn Arg Gly Asn
 355 360 365
 <310>569
 <311>287

<212>PRT

<213>Chlamydia pneumoniae

<400>569

Val	Val	Leu	Trp	Gly	Lys	Phe	Leu	Trp	Arg	Arg	Cys	Gly	Ser	Leu	Ala	
1				5					10						15	
Phe	Trp	Glu	Phe	Cys	Ser	Met	Asp	Cys	Ile	Gly	Lys	His	Asn	Pro	Leu	
			20					25					30			
Val	Lys	Glu	Ala	Leu	Ala	Leu	Lys	Arg	Ser	Arg	Cys	Arg	Lys	Ser	Ser	
		35					40					45				
Trp	Phe	Leu	Val	Glu	Gly	Ala	Arg	Glu	Ile	Gln	Lys	Ala	Leu	Arg	Thr	
	50					55					60					
Gly	Tyr	Leu	Cys	Gln	His	Val	Phe	Cys	Ser	Thr	His	Leu	Ser	Glu	Lys	
	65				70					75					80	
Glu	Lys	Glu	Phe	Leu	Tyr	Glu	Leu	Lys	Arg	Asn	Ser	Thr	Lys	Ile	Leu	
				85					90					95		
Tyr	Cys	Leu	Asp	Ser	Thr	Leu	Ala	Gln	Leu	Ser	Phe	Lys	Glu	His	His	
			100					105					110			
Asp	Ser	Phe	Val	Ala	Val	Ile	Gln	Lys	Arg	Val	Trp	Asn	Lys	Glu	Asp	
		115					120						125			
Phe	Leu	Ile	Gln	Arg	Lys	Asn	Ala	Gln	Pro	Phe	Tyr	Leu	Ile	Ile	Glu	
	130					135						140				
Gln	Val	Glu	Lys	Pro	Gly	Asn	Val	Gly	Ala	Ile	Leu	Arg	Ile	Ala	Asp	
	145				150					155					160	
Gly	Ala	Gly	Val	Asp	Gly	Val	Ile	Leu	Cys	Asn	Pro	Ile	Val	Asp	Leu	
			165						170					175		
Tyr	Asn	Pro	Asn	Val	Val	Arg	Ser	Ser	Leu	Gly	Ala	Val	Phe	Ser	Leu	
		180						185					190			
Pro	Ile	Leu	Ser	Ile	Ser	Arg	Glu	Gly	Lys	Glu	Leu	Phe	Lys	Gln		
	195					200						205				
Glu	Gly	Trp	Thr	Val	Phe	Val	Thr	Ser	Pro	Arg	Ala	Glu	Thr	Met	Tyr	
	210				215						220					
Phe	Ser	Lys	Asn	Tyr	Leu	Gly	Pro	Thr	Ala	Leu	Val	Phe	Gly	Ser	Glu	
	225				230					235					240	
Lys	Asp	Gly	Leu	Thr	Glu	Asp	Trp	Phe	Ser	Glu	Asp	Phe	Ser	Glu	Ile	
			245					250					255			
Ala	Leu	Pro	Met	Leu	Gly	Glu	Ser	Asp	Ser	Leu	Asn	Leu	Ala	Thr	Ser	
		260						265					270			
Val	Ala	Ala	Val	Ala	Tyr	Glu	Val	Val	Arg	Gln	Arg	Trp	Val	Asn		
	275						280					285				

<210>570

<211>321

<212>ERT

<213>Chlamydia pneumoniae

<400>570

Asp	Ser	Ser	Lys	Asp	Asp	Phe	Arg	Lys	Glu	Lys	Gly	Arg	Arg	Lys	Ser	
1				5					10						15	
Gln	Tyr	Arg	Asp	Arg	Tyr	Val	Asn	Lys	Asp	Thr	Gly	Arg	His	Ser	Lys	
			20					25					30			
Thr	Tyr	Phe	Ser	Leu	Ile	Arg	Glu	Arg	Leu	Val	Met	Asp	Tyr	Lys	Leu	
		35					40					45				
Leu	Asp	Ser	Gly	Asp	Gly	Asn	Lys	Leu	Glu	Cys	Phe	Gly	Pro	Val	Thr	
	50					55					60					
Leu	Ile	Arg	Pro	Ser	Ser	Ile	Ala	Val	Trp	Pro	Lys	Ser	Arg	Pro	Glu	
	65				70					75					80	
Leu	Trp	Ser	Gln	Ala	Gln	Leu	Gln	Tyr	Val	Arg	Glu	Gly	Glu	Arg	Gly	
			85					90					95			
Ala	Trp	Lys	Asn	Phe	Lys	Arg	Leu	Pro	Glu	Glu	Trp	Glu	Val	Ala	Phe	
		100						105					110			
Ser	Asp	Val	Arg	Cys	Leu	Leu	Lys	Arg	Thr	Pro	Phe	Gly	His	Leu	Gly	
		115					120					125				
Val	Phe	Pro	Glu	His	Met	Gly	Phe	Trp	Pro	Ala	Leu	Lys	Gln	Ala	Ile	
	130					135					140					
Glu	Lys	His	Lys	Glu	Arg	Gln	Val	Leu	Asn	Leu	Phe	Ala	Tyr	Thr	Gly	
	145				150				155						160	

Ala Gly Ser Ile Phe Ala Ala Lys Cys Gly Ala Arg Val His Val
 165 170 175
 Asp Ala Ser Gln Ala Ala Val Arg Trp Ala Gln Arg Asn Val Glu Lys
 180 185 190
 Asn Ala Phe Pro Glu Arg Arg Ile Phe Trp Val Ile Glu Asp Val Ile
 195 200 205
 Ser Phe Leu Lys Lys Glu Ile Arg Arg Asn Lys Lys Tyr Gln Val Ile
 210 215 220
 Leu Leu Asp Pro Pro Ser Tyr Gly Arg Gly Pro Asp Gly Glu Val Phe
 225 230 235 240
 Lys Ile Asp Lys Asp Leu Phe Pro Leu Leu Ser Leu Cys Ser Lys Leu
 245 250 255
 Leu Ala Asp Asp Ala Ser Tyr Phe Leu Leu Thr Ser His Thr Pro Gly
 260 265 270
 His Thr Pro Glu Phe Leu Arg Ala Ile Ala Arg Arg Arg Cys Gln Pro
 275 280 285
 Leu Phe Leu Lys Arg Gly Leu Val Gly Lys Val Phe Val Glu Lys Val
 290 295 300
 Trp Glu Pro Cys Leu Leu Gly Val Leu Phe Asn Gly Leu His Arg Glu
 305 310 315 320
 Thr

<210>571

<211>200

<212>PRT

<213>Chlamydia pneumoniae

<400>571

Met Phe Ser Gly Ile Ile Gln Glu Leu Gly Glu Val Cys Phe Phe Glu
 1 5 10 15
 Ala Gln Gly Asn Gly Leu Ser Leu Gly Ile Lys Ser Thr Pro Leu Phe
 20 25 30
 Val Thr Pro Leu Val Thr Gly Asp Ser Val Ala Val Asp Gly Val Cys
 35 40 45
 Leu Thr Leu Thr Ser Cys Asn Glu Ser Lys Ile Phe Phe Asp Val Ile
 50 55 60
 Pro Glu Thr Leu Ala Cys Thr Thr Leu Gly Glu Lys Arg Cys Ser Asp
 65 70 75 80
 Gln Val Asn Leu Glu Ala Ala Leu Lys Met Gly Asp Ser Ile Gly Gly
 85 90 95
 His Leu Leu Ser Gly His Val Phe Gly Thr Ala Glu Ile Phe Leu Ile
 100 105 110
 Lys Glu Asn Arg Tyr Tyr Phe Arg Gly Ser Lys Glu Leu Ser Gln Tyr
 115 120 125
 Leu Phe Glu Lys Gly Phe Ile Ala Ile Asp Gly Val Ser Leu Thr Leu
 130 135 140
 Val Ser Val Asp Ser Asp Thr Phe Ser Val Gly Leu Ile Pro Glu Thr
 145 150 155 160
 Leu Gln Arg Thr Thr Leu Gly Lys Lys Arg Glu Gly Glu Arg Val Asn
 165 170 175
 Ile Glu Ile Asp Met Ser Thr Lys Ile Gln Val Asp Thr Val Lys Arg
 180 185 190
 Ile Leu Ala Ser Ser Gly Lys Asp
 195 200

<210>572

<211>152

<212>PRT

<213>Chlamydia pneumoniae

<400>572

Met Gln Cys Pro Phe Cys Asn His Gly Glu Leu Lys Val Ile Asp Ser
 1 5 10 15
 Arg Asn Ala Pro Glu Ala Asn Ala Ile Lys Arg Arg Arg Glu Cys Leu
 20 25 30
 Lys Cys Ser Gln Arg Phe Thr Thr Phe Glu Thr Val Glu Leu Thr Leu
 35 40 45

Gln Val Leu Lys Asp Gly Arg Tyr Glu Asn Phe Glu Ser Lys
 50 55 60
 Leu Ile His Gly Leu Asn Ala Ala Ser Ser His Thr Arg Ile Gly Gln
 65 70 75 80
 Asp Gln Val His Ala Ile Ala Ser Asn Val Lys Ser Glu Leu Leu Gly
 85 90 95
 Lys Gln Asn Arg Glu Ile Ser Thr Lys Glu Ile Gly Glu Leu Val Met
 100 105 110
 Lys Tyr Leu Lys Lys Ala Asp Met Ile Ala Tyr Ile Arg Phe Ala Cys
 115 120 125
 Val Tyr Arg Arg Phe Lys Asp Val Gly Glu Leu Met Glu Val Leu Leu
 130 135 140
 Ser Ala Thr Pro Asp Met Glu Lys
 145 150

<210>573

<211>132

<212>PRT

<213>Chlamydia pneumoniae

<400>573

Leu Asn Phe Ile Arg Ser Lys Val Val Pro Leu Ser Asp Asp Glu Ile
 1 5 10 15
 Glu Gln Phe Lys Lys Arg Leu Leu Glu Met Lys Ala Lys Leu Ser His
 20 25 30
 Thr Leu Glu Gly Asn Ala Gln Glu Val Lys Lys Pro Asn Glu Ala Thr
 35 40 45
 Gly Tyr Ser Gln His Gln Ala Asp Gln Gly Thr Asp Thr Phe Asp Arg
 50 55 60
 Thr Ile Ser Leu Glu Val Thr Thr Lys Glu Tyr Glu Leu Leu Arg Gln
 65 70 75 80
 Ile Asn Arg Ala Leu Glu Lys Ile Asn Glu Ser Ser Tyr Gly Ile Cys
 85 90 95
 Asp Val Ser Gly Glu Glu Ile Pro Leu Ala Arg Leu Ile Ala Ile Pro
 100 105 110
 Tyr Ala Thr Met Thr Val Lys Ala Gln Glu Gln Phe Glu Lys Gly Leu
 115 120 125
 Leu Ser Gly Asn
 130

<210>574

<211>169

<212>PRT

<213>Chlamydia pneumoniae

<400>574

Met Ala Thr Arg Phe Arg Ser Thr Leu Leu Val Ile Thr Leu Phe Val
 1 5 10 15
 Leu Ile Asp Trp Val Thr Lys Leu Val Val Leu Leu Gln Tyr Lys Asp
 20 25 30
 Leu Gln Ile Leu Thr His Pro Thr Leu Tyr Thr His Ser Trp Gly Arg
 35 40 45
 Phe Ser Phe Ser Ile Ala Pro Val Phe Asn Glu Gly Ala Ala Phe Gly
 50 55 60
 Leu Phe Ser Asn Tyr Lys Tyr Phe Leu Phe Leu Leu Arg Ile Phe Val
 65 70 75 80
 Ile Leu Gly Leu Leu Ala Tyr Leu Phe Phe Lys Lys Lys Ser Ile Gln
 85 90 95
 Ser Thr Thr Gln Thr Ala Leu Val Leu Leu Cys Ala Gly Ala Ile Gly
 100 105 110
 Asn Val Gly Asp Ile Ile Phe Tyr Gly His Ile Val Asp Phe Ile Ser
 115 120 125
 Phe Asn Tyr Lys Gln Trp Ala Phe Pro Thr Phe Asn Val Ala Asp Val
 130 135 140
 Leu Ile Ser Leu Gly Thr Leu Leu Leu Val Tyr Lys Phe Tyr Phe Pro
 145 150 155 160
 Thr Lys Gln Thr Glu Lys Lys Arg
 165

<210>575

<211>449

<212>PRT

<213>Chlamydis pneumoniae

<400>575

Met Asn Arg Leu Leu Ser Leu Leu Ser Val Phe Asp Asp Phe Phe Trp
 1 5 10 15
 Ser Tyr Val Ala Phe Ile Leu Ile Ile Val Leu Gly Val Ser Phe Ser
 20 25 30
 Trp Lys Ser Arg Phe Phe Gln Phe Thr Lys Phe Ser Gln Phe Cys Lys
 35 40 45
 Leu Phe Arg Tyr Tyr Ser Gln Asn Pro Gln Glu Arg Glu Thr Lys Gln
 50 55 60
 Gly Val His Pro Leu Lys Val Phe Phe Ala Ser Ala Gly Gly Asn Ile
 65 70 75 80
 Gly Ile Gly Asn Val Val Gly Ile Val Thr Ala Ala Cys Ile Gly Gly
 85 90 95
 Pro Gly Ala Leu Phe Trp Val Trp Ile Ala Gly Ile Phe Gly Ser Ile
 100 105 110
 Val Lys Tyr Ser Glu Val Tyr Leu Gly Ile Lys Phe Arg Lys Leu Asp
 115 120 125
 Arg Asp Gly Val Tyr Gln Gly Gly Pro Met Tyr Phe Leu Ile Lys Ala
 130 135 140
 Phe Lys Thr Pro Val Val Ser Val Ile Val Ala Ile Leu Leu Cys Ile
 145 150 155 160
 Tyr Gly Val Glu Ile Tyr Gln Phe Ser Val Ile Thr Asp Ser Leu Ala
 165 170 175
 His Cys Trp Asn Leu Pro Lys Val Tyr Pro Met Leu Gly Leu Leu Phe
 180 185 190
 Leu Val Phe Tyr Ala Ile Arg Gly Gly Leu Gln Arg Ile Gly Lys Ile
 195 200 205
 Cys Ser Ile Val Leu Pro Phe Phe Met Leu Leu Tyr Cys Ala Leu Ser
 210 215 230
 Leu Tyr Ile Leu Val Lys Glu Phe His Thr Leu Pro His Leu Leu Ser
 225 230 235 240
 Thr Val Phe Ser Ser Ala Phe Lys Gly Gln Ser Ala Leu Gly Gly Phe
 245 250 255
 Ala Gly Cys Thr Val Ala Thr Thr Ile His Gln Gly Ile Ser Arg Ala
 260 265 270
 Ala Tyr Ser Gly Asp Ile Gly Ile Gly Phe Asp Ser Ile Ile Gln Ser
 275 280 285
 Glu Ser Ser Ala Lys Asp Pro Ser Thr Gln Ala Gln Leu Ser Ile Val
 290 295 300
 Gly Ile Ala Ile Asp Asn Leu Ile Cys Thr Leu Ser Leu Leu Met Val
 305 310 315 320
 Leu Ala Ser Gly Ser Trp Ser Leu Gly Leu Glu Asn Ala Ser Gln Val
 325 330 335
 Val Glu His Thr Leu Ala Ser Tyr Phe Pro Met Val Lys Phe Phe Leu
 340 345 350
 Pro Thr Phe Phe Phe Val Thr Gly Tyr Thr Thr Ile Ile Ser Tyr Phe
 355 360 365
 Leu Val Gly Lys Lys Cys Ala Lys Phe Leu Tyr Gly Asn Thr Gly Ala
 370 375 380
 Lys Ile Tyr Thr Leu Tyr Gly Leu Leu Ile Leu Pro Leu Phe Cys Phe
 385 390 395 400
 Leu Ser Gln Asn Thr Ala Leu Leu Ile Met Ser Val Ser Gly Ala Leu
 405 410 415
 Leu Leu Cys Phe Asn Leu Leu Gly Val Phe Ile Leu Arg Lys Glu Val
 420 425 430
 Ile Phe Pro Ala Arg Ala Ala Ser Leu Thr Glu Thr Ser Leu Ser Thr
 435 440 445
 Glu

<210>576

<211>232
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>576
 Leu Ile Phe Leu Leu Phe Met Asp Asn Tyr Leu Leu Gly Ser Leu Ile
 1 5 10 15
 Phe Cys Cys Val Leu Leu Ser Ile Gly Met Cys Thr Ile Phe Val Met
 20 25 30
 Thr Ile Cys Phe Leu Arg Gln Leu Asn Lys Ile Leu Lys Asn Ile His
 35 40 45
 Arg Val Thr Thr Ile Leu Asn Phe Glu Ala Lys Ile Leu Ala Pro Leu
 50 55 60
 Met Leu Gly Lys Lys Leu Leu Cys Gly Trp Leu Lys Lys Arg Lys Asn
 65 70 75 80
 Arg Gly Ser Leu Ser Glu Asp Ile Asp Glu Leu Leu Asp Glu Lys Lys
 85 90 95
 Gln Arg Ser Trp Lys Lys Asn Leu Asp Gln Gly Ile Lys Trp Cys Ala
 100 105 110
 His Trp Ser Ser Phe Gly Lys Cys Phe Val Ile Lys Ile Lys Thr Leu
 115 120 125
 Arg Asp Ile Val Met Phe Arg Asn Asn His Lys Pro Lys Lys Thr Lys
 130 135 140
 Cys Lys Arg Phe Arg Trp Leu Arg Gly Val Leu Phe Gly Gly Phe Ile
 145 150 155 160
 Ala Thr Leu Leu Thr Cys Leu Phe Thr Pro Lys Ser Gly Val Gln Leu
 165 170 175
 Arg Lys Lys Ile Leu Lys Val Lys Asn Ser Gly Ala Lys Lys Ser Arg
 180 185 190
 Val Phe Phe Lys Asn Ser Lys Gln His Thr Lys Ser Phe Val Lys Gln
 195 200 205
 Ala Lys Leu Leu Ala Lys Asn Ile Ser His Glu Leu Gln Asp Phe Lys
 210 215 220
 Lys Gly Ile Leu Asp Asp Lys Asp
 225 230

<210>577

<211>308

<212>PRT

<213>Chlamydia pneumoniae

<400>577

Gly Tyr Asn Leu Leu Gly Leu Arg His Met Lys Gln Met Arg Leu Trp
 1 5 10 15
 Gly Phe Leu Phe Leu Ser Ser Phe Cys Gln Val Ser Tyr Leu Arg Ala
 20 25 30
 Asn Asp Val Leu Leu Pro Leu Ser Gly Ile His Ser Gly Glu Asp Leu
 35 40 45
 Glu Leu Phe Thr Leu Arg Ser Ser Ser Pro Thr Lys Thr Thr Tyr Ser
 50 55 60
 Leu Arg Lys Asp Phe Ile Val Cys Asp Phe Ala Gly Asn Ser Ile His
 65 70 75 80
 Lys Pro Gly Ala Ala Phe Leu Asn Leu Lys Gly Asp Leu Phe Phe Ile
 85 90 95
 Asn Ser Thr Pro Leu Ala Ala Leu Thr Phe Lys Asn Ile His Leu Gly
 100 105 110
 Ala Arg Gly Ala Gly Leu Phe Ser Glu Ser Asn Val Thr Phe Lys Gly
 115 120 125
 Leu His Ser Leu Val Leu Glu Asn Asn Glu Ser Trp Gly Gly Val Leu
 130 135 140
 Thr Thr Ser Gly Asp Leu Ser Phe Ile Asn Asn Thr Ser Val Leu Cys
 145 150 155 160
 Gln Asn Asn Ile Ser Tyr Gly Pro Gly Gly Ala Leu Leu Leu Gln Gly
 165 170 175
 Arg Lys Ser Lys Ala Leu Phe Phe Arg Asp Asn Arg Gly Thr Ile Leu
 180 185 190
 Phe Leu Lys Asn Lys Ala Val Asn Gln Asp Glu Ser His Pro Gly Tyr

195 200 205
 Gly Gly Ala Val Ser Ser Ile Ser Pro Gly Ser Pro Ile Thr Phe Ala
 210 215 220
 Asp Asn Gln Glu Ile Leu Phe Gln Glu Asn Glu Gly Glu Leu Gly Gly
 225 230 235 240
 Ala Ile Tyr Asn Asp Gln Gly Ala Ile Thr Phe Glu Asn Asn Phe Gln
 245 250 255
 Thr Thr Ser Phe Phe Ser Asn Lys Ala Ser Phe Gly Gly Ala Val Tyr
 260 265 270
 Ser Arg Tyr Cys Asn Leu Tyr Ser Gln Trp Gly Asp Thr Leu Phe Thr
 275 280 285
 Lys Asn Ala Ala Ala Lys Val Gly Gly His Pro Cys Gly Leu Cys Ser
 290 295 300
 Tyr Lys Arg Leu
 305
 <210>578
 <211>560
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>578
 Ala Asp Ile His Ala Asp Tyr Val His Ile Arg Asp Cys Lys Gly Ser
 1 5 10 15
 Ile Val Phe Glu Glu Asn Ser Ala Thr Ala Gly Gly Ala Ile Ala Val
 20 25 30
 Asn Ala Val Cys Asp Ile Asn Ala Gln Gly Pro Val Arg Phe Ile Asn
 35 40 45
 Asn Ser Ala Leu Gly Leu Asn Gly Gly Ala Ile Tyr Met Gln Ala Thr
 50 55 60
 Gly Ser Ile Leu Arg Leu His Ala Asn Gln Gly Asp Ile Glu Phe Cys
 65 70 75 80
 Gly Asn Lys Val Arg Ser Gln Phe His Ser His Ile Asn Ser Thr Ser
 85 90 95
 Asn Phe Thr Asn Asn Ala Ile Thr Ile Gln Gly Ala Pro Arg Glu Phe
 100 105 110
 Ser Leu Ser Ala Asn Glu Gly His Arg Ile Cys Phe Tyr Asp Pro Ile
 115 120 125
 Ile Ser Ala Thr Glu Asn Tyr Asn Ser Leu Tyr Ile Asn His Gln Arg
 130 135 140
 Leu Leu Glu Ala Gly Gly Ala Val Ile Phe Ser Gly Ala Arg Leu Ser
 145 150 155 160
 Pro Glu His Lys Lys Glu Asn Lys Asn Lys Thr Ser Ile Ile Asn Gln
 165 170 175
 Pro Val Arg Leu Cys Ser Gly Val Leu Ser Ile Glu Gly Gly Ala Ile
 180 185 190
 Leu Ala Val Arg Ser Phe Tyr Gln Glu Gly Gly Leu Leu Ala Leu Gly
 195 200 205
 Pro Gly Ser Lys Leu Thr Thr Gln Gly Lys Asn Ser Glu Lys Asp Lys
 210 215 220
 Ile Val Ile Thr Asn Leu Gly Phe Asn Leu Glu Asn Leu Asp Ser Ser
 225 230 235 240
 Asp Pro Ala Glu Ile Arg Ala Thr Glu Lys Ala Ser Ile Glu Ile Ser
 245 250 255
 Gly Val Pro Arg Val Tyr Gly His Thr Glu Ser Phe Tyr Glu Asn His
 260 265 270
 Glu Tyr Ala Ser Lys Pro Tyr Thr Thr Ser Ile Ile Leu Ser Ala Lys
 275 280 285
 Lys Leu Val Thr Ala Pro Ser Arg Pro Glu Lys Asp Ile Gln Asn Leu
 290 295 300
 Ile Ile Ala Glu Ser Glu Tyr Met Gly Tyr Gly Tyr Gln Gly Ser Trp
 305 310 315 320
 Glu Phe Ser Trp Ser Pro Asn Asp Thr Lys Glu Lys Lys Thr Ile Ile
 325 330 335
 Ala Ser Trp Thr Pro Thr Gly Glu Phe Ser Leu Asp Pro Lys Arg Arg
 340 345 350

Gly	Ser	Phe	Ile	Pro	Thr	Thr	Leu	Trp	Ser	Thr	Phe	Gly	Leu	Asn	
355							360					365			
Ile	Ala	Ser	Asn	Ile	Val	Asn	Asn	Asn	Tyr	Leu	Asn	Asn	Ser	Glu	Val
370							375					380			
Ile	Pro	Leu	Gln	His	Leu	Cys	Val	Phe	Gly	Gly	Pro	Val	Tyr	Gln	Ile
385						390					395				400
Met	Glu	Gln	Asn	Pro	Lys	Gln	Ser	Ser	Asn	Asn	Leu	Leu	Val	Gln	His
				405						410					415
Ala	Gly	His	Asn	Val	Gly	Ala	Arg	Ile	Pro	Phe	Ser	Phe	Asn	Thr	Ile
			420					425							430
Leu	Ser	Ala	Ala	Leu	Thr	Gln	Leu	Phe	Ser	Ser	Ser	Ser	Gln	Gln	Asn
		435					440								445
Val	Ala	Asp	Lys	Ser	His	Ala	Gln	Ile	Leu	Ile	Gly	Thr	Val	Ser	Leu
		450					455					460			
Asn	Lys	Ser	Trp	Gln	Ala	Leu	Ser	Leu	Arg	Ser	Ser	Phe	Ser	Tyr	Thr
465						470						475			480
Glu	Asp	Ser	Gln	Val	Met	Lys	His	Val	Phe	Pro	Tyr	Lys	Gly	Thr	Ser
			485							490					495
Arg	Gly	Ser	Trp	Arg	Asn	Tyr	Gly	Trp	Ser	Gly	Ser	Val	Gly	Met	Ser
			500					505							510
Tyr	Ala	Tyr	Pro	Lys	Gly	Ile	Arg	Tyr	Leu	Lys	Met	Thr	Pro	Phe	Val
		515					520								525
Asp	Leu	Gln	Tyr	Thr	Lys	Leu	Val	Gln	Asn	Pro	Phe	Val	Glu	Thr	Gly
		530					535								540
Tyr	Asp	Pro	Arg	Tyr	Phe	Ser	Ser	Ser	Glu	Met	Thr	Asn	Leu	Ser	Leu
545						550					555				560
Pro	Ile	Gly	Ile	Ala	Leu	Glu	Met	Arg	Phe	Ile	Gly	Ser	Arg	Ser	Ser
				565						570					575
Leu	Phe	Leu	Gln	Val	Ser	Thr	Ser	Tyr	Ile	Lys	Asp	Leu	Arg	Arg	Val
			580					585							590
Asn	Pro	Gln	Ser	Ser	Ala	Ser	Leu	Val	Leu	Asn	His	Tyr	Thr	Trp	Asp
		595					600								605
Ile	Gln	Gly	Val	Pro	Leu	Gly	Lys	Glu	Ala	Leu	Asn	Ile	Thr	Leu	Asn
		610					615								620
Ser	Thr	Ile	Lys	Tyr	Lys	Ile	Val	Thr	Ala	Tyr	Met	Gly	Ile	Ser	Ser
625						630					635				640
Thr	Gln	Arg	Glu	Gly	Ser	Asn	Leu	Ser	Ala	Asn	Ala	His	Ala	Gly	Leu
				645						650					655
Ser	Leu	Ser	Phe												
			660												

<210>579

<211>609

<212>PRT

<213>Chlamydia pneumoniae

<400>579

Phe	Ile	His	Leu	Ile	Tyr	Leu	Ser	Leu	Ile	Glu	Phe	Val	Asn	Ile	Ser
1				5						10					15
Asp	Arg	Phe	Ser	Ser	Met	Lys	Trp	Leu	Pro	Ala	Thr	Ala	Val	Phe	Ala
			20						25					30	
Ala	Val	Leu	Pro	Ala	Leu	Thr	Ala	Phe	Gly	Asp	Pro	Ala	Ser	Val	Glu
		35					40						45		
Ile	Ser	Thr	Ser	His	Thr	Gly	Ser	Gly	Asp	Pro	Thr	Ser	Asp	Ala	Ala
		50					55					60			
Leu	Thr	Gly	Phe	Thr	Gln	Ser	Ser	Thr	Glu	Thr	Asp	Gly	Thr	Thr	Tyr
		65				70					75				80
Thr	Ile	Val	Gly	Asp	Ile	Thr	Phe	Ser	Thr	Phe	Thr	Asn	Ile	Pro	Val
				85					90					95	
Pro	Val	Val	Thr	Pro	Asp	Ala	Asn	Asp	Ser	Ser	Ser	Asn	Ser	Ser	Lys
			100						105					110	
Gly	Gly	Ser	Ser	Ser	Ser	Gly	Ala	Thr	Ser	Leu	Ile	Arg	Ser	Ser	Asn
			115				120						125		
Leu	His	Ser	Asp	Phe	Asp	Phe	Thr	Lys	Asp	Ser	Val	Leu	Asp	Leu	Tyr
		130					135					140			
His	Leu	Phe	Phe	Pro	Ser	Ala	Ser	Asn	Thr	Leu	Asn	Pro	Ala	Leu	Leu

145 150 155 160
 Ser Ser Ser Ser Ser Gly Gly Ser Ser Ser Ser Ser Ser Ser Ser
 165 170 175
 Ser Gly Ser Ala Ser Ala Val Val Ala Ala Asp Pro Lys Gly Gly Ala
 180 185 190
 Ala Phe Tyr Ser Asn Glu Ala Asn Gly Thr Leu Thr Phe Thr Thr Asp
 195 200 205
 Ser Gly Asn Pro Gly Ser Leu Thr Leu Gln Asn Leu Lys Met Thr Gly
 210 215 220
 Asp Gly Ala Ala Ile Tyr Ser Lys Gly Pro Leu Val Phe Thr Gly Leu
 225 230 235 240
 Lys Asn Leu Thr Phe Thr Gly Asn Glu Ser Gln Lys Ser Gly Gly Ala
 245 250 255
 Ala Tyr Thr Glu Gly Ala Leu Thr Thr Gln Ala Ile Val Glu Ala Val
 260 265 270
 Thr Phe Thr Gly Asn Thr Ser Ala Gly Gln Gly Gly Ala Ile Tyr Val
 275 280 285
 Lys Glu Ala Thr Leu Phe Asn Ala Leu Asp Ser Leu Lys Phe Glu Lys
 290 295 300
 Asn Thr Ser Gly Gln Ala Gly Gly Gly Ile Tyr Thr Glu Ser Thr Leu
 305 310 315 320
 Thr Ile Ser Asn Ile Thr Lys Ser Ile Glu Phe Ile Ser Asn Lys Ala
 325 330 335
 Ser Val Pro Ala Pro Ala Pro Glu Pro Thr Ser Pro Ala Pro Ser Ser
 340 345 350
 Leu Ile Asn Ser Thr Thr Ile Asp Thr Ser Thr Leu Gln Thr Arg Ala
 355 360 365
 Ala Ser Ala Thr Pro Ala Val Ala Pro Val Ala Ala Val Thr Pro Thr
 370 375 380
 Pro Ile Ser Thr Gln Glu Thr Ala Gly Asn Gly Gly Ala Ile Tyr Ala
 385 390 395 400
 Lys Gln Gly Ile Ser Ile Ser Thr Phe Lys Asp Leu Thr Phe Lys Ser
 405 410 415
 Asn Ser Ala Ser Val Asp Ala Thr Leu Thr Val Asp Ser Ser Thr Ile
 420 425 430
 Gly Glu Ser Gly Gly Ala Ile Phe Ala Ala Asp Ser Ile Gln Ile Gln
 435 440 445
 Gln Cys Thr Gly Thr Thr Leu Phe Ser Gly Asn Thr Ala Asn Lys Ser
 450 455 460
 Gly Gly Gly Ile Tyr Ala Val Gly Gln Val Thr Leu Glu Asp Ile Ala
 465 470 475 480
 Asn Leu Lys Met Thr Asn Asn Thr Cys Lys Gly Glu Gly Gly Ala Ile
 485 490 495
 Tyr Thr Lys Lys Ala Leu Thr Ile Asn Asn Gly Ala Ile Leu Thr Thr
 500 505 510
 Phe Ser Gly Asn Thr Ser Thr Asp Asn Gly Gly Ala Ile Phe Ala Val
 515 520 525
 Gly Gly Ile Thr Leu Ser Asp Leu Val Glu Val Arg Phe Ser Lys Asn
 530 535 540
 Lys Thr Gly Asn Tyr Ser Ala Pro Ile Thr Lys Ala Ala Ser Asn Thr
 545 550 555 560
 Ala Pro Val Val Ser Ser Ser Thr Thr Ala Ala Ser Pro Ala Val Pro
 565 570 575
 Ala Ala Ala Ala Ala Pro Val Thr Asn Ala Ala Lys Gly Gly Ala Leu
 580 585 590
 Tyr Ser Thr Glu Gly Leu Thr Val Ser Gly Ile Thr Ser Xaa Ile Val
 595 600 605
 Val

<210>580

<211>1146

<212>PRT

<213>Chlamydia pneumoniae

<400>580

Leu	Tyr	Leu	Glu	5	His	Arg	Xas	Leu	Ser	Phe	Glu	Asn	Glu	Cys
1									10				15	
Gln	Asn	Gln	Gly	Gly	Gly	Ala	Tyr	Val	Thr	Lys	Thr	Phe	Gln	Cys
			20					25					30	Ser
Asp	Ser	His	Arg	Leu	Gln	Phe	Thr	Ser	Asn	Lys	Ala	Ala	Asp	Glu
		35					40					45		Gly
Gly	Gly	Leu	Tyr	Cys	Gly	Asp	Asp	Val	Thr	Leu	Thr	Asn	Leu	Thr
	50					55					60			Gly
Lys	Thr	Leu	Phe	Gln	Glu	Asn	Ser	Ser	Glu	Lys	His	Gly	Gly	Gly
	65				70					75				Leu
Ser	Leu	Ala	Ser	Gly	Lys	Ser	Leu	Thr	Met	Thr	Ser	Leu	Glu	Ser
				85					90					Phe
Cys	Leu	Asn	Ala	Asn	Thr	Ala	Lys	Glu	Asn	Gly	Gly	Gly	Ala	Asn
			100					105					110	Val
Pro	Glu	Asn	Ile	Val	Leu	Thr	Phe	Thr	Tyr	Thr	Pro	Thr	Pro	Asn
	115						120					125		Glu
Pro	Ala	Pro	Val	Gln	Gln	Pro	Val	Tyr	Gly	Glu	Ala	Leu	Val	Thr
	130					135					140			Gly
Asn	Thr	Ala	Thr	Lys	Ser	Gly	Gly	Gly	Ile	Tyr	Thr	Lys	Asn	Ala
	145			150						155				Ala
Phe	Ser	Asn	Leu	Ser	Ser	Val	Thr	Phe	Asp	Gln	Asn	Thr	Ser	Ser
			165						170					Glu
Asn	Gly	Gly	Ala	Leu	Leu	Thr	Gln	Lys	Ala	Ala	Asp	Lys	Thr	Asp
		180						185				190		Cys
Ser	Phe	Thr	Tyr	Ile	Thr	Asn	Val	Asn	Ile	Thr	Asn	Asn	Thr	Ala
	195					200						205		Thr
Gly	Asn	Gly	Gly	Gly	Ile	Ala	Gly	Gly	Lys	Ala	His	Phe	Asp	Arg
	210				215						220			Ile
Asp	Asn	Leu	Thr	Val	Gln	Ser	Asn	Gln	Ala	Lys	Lys	Gly	Gly	Gly
	225			230						235				Val
Tyr	Leu	Glu	Asp	Ala	Leu	Ile	Leu	Glu	Lys	Val	Ile	Thr	Gly	Ser
			245						250					Val
Ser	Gln	Asn	Thr	Ala	Thr	Glu	Ser	Gly	Gly	Gly	Ile	Tyr	Ala	Lys
			260					265					270	Asp
Ile	Gln	Leu	Gln	Ala	Leu	Pro	Gly	Ser	Phe	Thr	Ile	Thr	Asp	Asn
	275					280						285		Lys
Val	Glu	Thr	Ser	Leu	Thr	Thr	Ser	Thr	Asn	Leu	Tyr	Gly	Gly	Gly
	290					295					300			Ile
Tyr	Ser	Ser	Gly	Ala	Val	Thr	Leu	Thr	Asn	Ile	Ser	Gly	Thr	Phe
	305				310					315				Gly
Ile	Thr	Gly	Asn	Ser	Val	Ile	Asn	Thr	Ala	Thr	Ser	Gln	Asp	Ala
			325						330					Asp
Ile	Gln	Gly	Gly	Gly	Ile	Tyr	Ala	Thr	Thr	Ser	Leu	Ser	Ile	Asn
		340					345						350	Gln
Cys	Asn	Thr	Pro	Ile	Leu	Phe	Ser	Asn	Asn	Ser	Ala	Ala	Thr	Lys
	355						360					365		Lys
Thr	Ser	Thr	Thr	Lys	Gln	Ile	Ala	Gly	Gly	Ala	Ile	Phe	Ser	Ala
	370					375					380			Ala
Val	Thr	Ile	Glu	Asn	Asn	Ser	Gln	Pro	Ile	Ile	Phe	Leu	Asn	Asn
	385			390						395				Ser
Ala	Lys	Ser	Glu	Ala	Thr	Thr	Ala	Ala	Thr	Ala	Gly	Asn	Lys	Asp
			405						410				415	Ser
Cys	Gly	Gly	Ala	Ile	Ala	Ala	Asn	Ser	Val	Thr	Leu	Thr	Asn	Asn
		420						425					430	Pro
Glu	Ile	Thr	Phe	Lys	Gly	Asn	Tyr	Ala	Glu	Thr	Gly	Gly	Ala	Ile
		435					440					445		Gly
Cys	Ile	Asp	Leu	Thr	Asn	Gly	Ser	Pro	Pro	Arg	Lys	Val	Ser	Ile
	450					455					460			Ala
Asp	Asn	Gly	Ser	Val	Leu	Phe	Gln	Asp	Asn	Ser	Ala	Leu	Asn	Arg
	465				470					475				Gly
Gly	Ala	Ile	Tyr	Gly	Glu	Thr	Ile	Asp	Ile	Ser	Arg	Thr	Gly	Ala
			485						490					Thr
Phe	Ile	Gly	Asn	Ser	Ser	Lys	His	Asp	Gly	Ser	Ala	Ile	Cys	Cys
			500					505					510	Ser

Thr Ala Leu Thr Leu Ala Pro Asn Ser Gln Leu Ile Phe Asn Asn
 515 520 525
 Lys Val Thr Glu Thr Thr Ala Thr Thr Lys Ala Ser Ile Asn Asn Leu
 530 535 540
 Gly Ala Ala Ile Tyr Gly Asn Asn Glu Thr Ser Asp Val Thr Ile Ser
 545 550 555 560
 Leu Ser Ala Glu Asn Gly Ser Ile Phe Phe Lys Asn Asn Leu Cys Thr
 565 570 575
 Ala Thr Asn Lys Tyr Cys Ser Ile Ala Gly Asn Val Lys Phe Thr Ala
 580 585 590
 Ile Glu Ala Ser Ala Gly Lys Ala Ile Ser Phe Tyr Asp Ala Val Asn
 595 600 605
 Val Ser Thr Lys Asa Thr Asn Ala Gln Glu Leu Lys Leu Asn Glu Lys
 610 615 620
 Ala Thr Ser Thr Gly Thr Ile Leu Phe Ser Gly Glu Leu His Glu Asn
 625 630 635 640
 Lys Ser Tyr Ile Pro Gln Lys Val Thr Phe Ala His Gly Asn Leu Ile
 645 650 655
 Leu Gly Lys Asn Ala Glu Leu Ser Val val Ser Phe Thr Gln Ser Pro
 660 665 670
 Gly Thr Thr Ile Thr Met Gly Pro Gly Ser Val Leu Ser Asn His Ser
 675 680 685
 Lys Glu Ala Gly Gly Ile Ala Ile Asn Asn Val Ile Ile Asp Phe Ser
 690 695 700
 Glu Ile Val Pro Thr Lys Asp Asn Ala Thr Val Ala Pro Pro Thr Leu
 705 710 715 720
 Lys Leu Val Ser Arg Thr Asn Ala Asp Ser Lys Asp Lys Ile Asp Ile
 725 730 735
 Thr Gly Thr Val Thr Leu Leu Asp Pro Asn Gly Asn Leu Tyr Gln Asn
 740 745 750
 Ser Tyr Leu Gly Glu Asp Arg Asp Ile Thr Leu Phe Asn Ile Asp Asn
 755 760 765
 Ser Ala Ser Gly Ala Val Thr Ala Thr Asn Val Thr Leu Gln Gly Asn
 770 775 780
 Leu Gly Ala Lys Lys Gly Tyr Leu Gly Thr Trp Asn Leu Asp Pro Asn
 785 790 795 800
 Ser Ser Gly Ser Lys Ile Ile Leu Lys Trp Thr Phe Asp Lys Tyr Leu
 805 810 815
 Arg Trp Pro Tyr Ile Pro Arg Asp Asn His Phe Tyr Ile Asn Ser Ile
 820 825 830
 Trp Gly Ala Gln Asn Ser Leu Val Thr Val Lys Gln Gly Ile Leu Gly
 835 840 845
 Asn Met Leu Asn Asn Ala Arg Phe Glu Asp Pro Ala Phe Asn Asn Phe
 850 855 860
 Trp Ala Ser Ala Ile Gly Ser Phe Leu Arg Lys Glu Val Ser Arg Asn
 865 870 875 880
 Ser Asp Ser Phe Thr Tyr His Gly Arg Gly Tyr Thr Ala Ala Val Asp
 885 890 895
 Ala Lys Pro Arg Gln Glu Phe Ile Leu Gly Ala Ala Phe Ser Gln Val
 900 905 910
 Phe Gly His Ala Glu Ser Glu Tyr His Leu Asp Asn Tyr Lys His Lys
 915 920 925
 Gly Ser Gly His Ser Thr Gln Ala Ser Leu Tyr Ala Gly Asn Ile Phe
 930 935 940
 Tyr Phe Pro Ala Ile Arg Ser Arg Pro Ile Leu Phe Gln Gly Val Ala
 945 950 955 960
 Thr Tyr Gly Tyr Met Gln His Asp Thr Thr Thr Tyr Tyr Pro Ser Ile
 965 970 975
 Glu Glu Lys Asn Met Ala Asn Trp Asp Ser Ile Ala Trp Leu Phe Asp
 980 985 990
 Leu Arg Phe Ser Val Asp Leu Lys Glu Pro Gln Pro His Ser Thr Ala
 995 1000 1005
 Arg Leu Thr Phe Tyr Thr Glu Ala Glu Tyr Thr Arg Ile Arg Gln Glu
 1010 1015 1020

Lys Phe Thr Glu Leu Asp Tyr Asp Pro Arg Ser Phe Ala Cys Ser
 1025 1030 1035 1040
 Tyr Gly Asn Leu Ala Ile Pro Thr Gly Phe Ser Val Asp Gly Ala Leu
 1045 1050 1055
 Ala Trp Arg Glu Ile Ile Leu Tyr Asn Lys Val Ser Ala Ala Tyr Leu
 1060 1065 1070
 Pro Val Ile Leu Arg Asn Asn Pro Lys Ala Thr Tyr Glu Val Leu Ser
 1075 1080 1085
 Thr Lys Glu Lys Gly Asn Val Val Asn Val Leu Pro Thr Arg Asn Ala
 1090 1095 1100
 Ala Arg Ala Glu Val Ser Ser Gln Ile Tyr Leu Gly Ser Tyr Trp Thr
 1105 1110 1115 1120
 Leu Tyr Gly Thr Tyr Thr Ile Asp Ala Ser Met Asn Thr Leu Val Gln
 1125 1130 1135
 Met Ala Asn Gly Gly Ile Arg Phe Val Phe
 1140 1145

<210>581

<211>239

<212>PRT

<213>Chlamydia pneumoniae

<400>581

Asn Asn Arg Ser Ser Tyr Gln Thr Ala Phe Val Met His Lys Val Ile
 1 5 10 15
 Val Xaa Ile Phe Leu Thr Leu Tyr Ser Leu Lys Ser Tyr Gly Asn Asp
 20 25 30
 Val Ile Asp Lys Pro His Val Leu Val Ser Ile Ala Pro Tyr Lys Phe
 35 40 45
 Leu Val Glu Gln Ile Ala Glu Glu Thr Cys Phe Val Tyr Ala Ile Val
 50 55 60
 Thr Asn His Tyr Asp Pro His Thr Tyr Glu Leu Pro Pro Gln Gln Ile
 65 70 75 80
 Lys Glu Leu Arg Gln Gly Asp Leu Trp Phe Arg Ile Gly Glu Ala Phe
 85 90 95
 Glu Lys Thr Cys Glu Arg Asn Leu Thr Cys Gln Gln Val Asp Leu Ser
 100 105 110
 Gln Asn Val Ser Leu Ile Gln Gly Lys Pro Cys Cys Asn Gln His Thr
 115 120 125
 Thr Asn Tyr Asp Thr His Thr Trp Leu Ser Pro Lys Asn Leu Lys Val
 130 135 140
 Gln Val Glu Thr Ile Val Thr Thr Leu Ser Lys Lys Tyr Pro Gln His
 145 150 155 160
 Ala Thr Leu Tyr Gln Ser Asn Gly Glu Lys Leu Leu Ala Leu Asp
 165 170 175
 Gln Leu Asn Glu Glu Ile Leu Thr Ile Thr Ser Lys Ala Lys Gln Arg
 180 185 190
 His Ile Leu Val Ser His Gly Ala Phe Gly Tyr Phe Cys Arg Asp Tyr
 195 200 205
 Asn Phe Ser Gln His Thr Ile Glu Lys Ser Ser His Val Glu Pro Ser
 210 215 220
 Pro Lys Asp Val Ala Arg Val Phe Arg Asp Ile Glu Gln Tyr Lys Ile
 225 230 235 240
 Ser Ser Val Ile Leu Leu Glu Tyr Ser Gly Arg Arg Ser Ser Ala Met
 245 250 255
 Leu Ala Asp Arg Phe His Met His Thr Val Asn Leu Asp Pro Tyr Ala
 260 265 270
 Glu Asn Ile Leu Val Asn Leu Lys Thr Ile Ala Thr Thr Phe Ser Ser
 275 280 285
 Leu

<210>582

<211>352

<212>PRT

<213>Chlamydia pneumoniae

<400>582

Leu Lys Lys Asp Ly n Val Ile Met Phe Val Asp Gln Thr Leu
 1 5 10 15
 Glu Leu Arg Ala Gly Lys Gly Gly Asn Gly Val Val Ala Trp Arg Lys
 20 25 30
 Glu Lys Tyr Leu Pro Lys Gly Gly Pro Tyr Gly Gly Asn Gly Gly Asn
 35 40 45
 Gly Gly Ser Val Ile Ile Glu Ala Thr Thr Ser Val Tyr Ser Phe Glu
 50 55 60
 Ala Tyr Arg Asn Ile Arg Phe Leu Lys Ala Pro Asp Gly Gln Ser Gly
 65 70 75 80
 Ala Thr Asn Asn Arg Thr Gly Arg Ser Gly Lys Asp Leu Ile Val Ser
 85 90 95
 Val Pro Thr Gly Thr Leu Leu Arg Asp Ala Glu Thr Gly Glu Ile Leu
 100 105 110
 His Asp Phe Thr Val Asp Gly Glu Arg Leu Leu Val Ser Gln Gly Gly
 115 120 125
 Lys Gly Gly Lys Gly Asn Thr Phe Phe Lys Thr Ser Val Asn Arg Ala
 130 135 140
 Pro Thr Lys Ala Thr Pro Gly Lys Pro Gly Glu Ile Arg Gln Val Glu
 145 150 155 160
 Leu Glu Leu Lys Leu Ile Ala Asp Ile Gly Leu Val Gly Phe Pro Asn
 165 170 175
 Ala Gly Lys Ser Thr Leu Phe Asn Thr Leu Ala His Thr Glu Val Lys
 180 185 190
 Val Gly Ala Tyr Pro Phe Thr Thr Leu Ala Pro Ser Leu Gly Leu Val
 195 200 205
 Leu Cys Lys Asp Arg Leu Tyr Gln Lys Pro Tyr Ile Ile Ala Asp Ile
 210 215 230
 Pro Gly Ile Ile Glu Gly Ala His Gln Asn Lys Gly Leu Gly Leu Asp
 225 230 235 240
 Phe Leu Arg His Ile Glu Arg Thr Leu Leu Leu Phe Val Ile Asp
 245 250 255
 Val Ser Lys Arg Glu Arg Asn Ser Pro Glu Glu Asp Leu Glu Thr Leu
 260 265 270
 Ile His Glu Leu His Ser His Gln Pro Asp Phe Glu Lys Lys Asp Met
 275 280 285
 Leu Val Ala Leu Asn Lys Ile Asp Asp Leu Leu Pro Asp Glu Gln Glu
 290 295 300
 Glu Cys Leu Gln Ser Phe Gln Lys Arg Phe Pro Ser Tyr Thr Phe Val
 305 310 315 320
 Leu Ile Ser Gly Leu Thr Gly Glu Gly Val Asp Gly Leu Tyr Arg Phe
 325 330 335
 Phe Thr Gln Asp Ser Leu Tyr Asn Xaa Thr Pro Ser Ala Met Ile Ser
 340 345 350

<210>583

<211>84

<212>PRT

<213>Chlamydia pneumoniae

<400>583

Met Ala His Lys Lys Gly Gln Gly Ala Ser Arg Asn Gly Arg Asp Ser
 1 5 10 15
 Lys Ser Lys Arg Leu Gly Val Lys Val Gly Ala Gly Gln Lys Val Ser
 20 25 30
 Thr Gly Ser Ile Leu Val Arg Gln Arg Gly Thr Arg Trp Asn Pro Ala
 35 40 45
 Gln Asn Val Gly Arg Gly Arg Asp Asp Thr Leu Phe Ala Leu Val Asp
 50 55 60
 Gly Ile Val Val Met Lys Lys Thr Asn Arg Thr Tyr Ile Ser Val Val
 65 70 75 80
 Pro Glu Gln Leu

<210>584

<211>107

<212>PRT

<213>Chlamydia pneumoniae

<400>584

Leu Met Glu Pro Tyr Ala Val Ile Gln Thr Gly Ser Lys Gln Tyr Gln
1 5 10 15
Val Arg Ser Gly Asp Val Ile Asp Val Glu Leu Leu Gly Glu Val Ala
20 25 30
Ser Asp Lys Glu Val Ile Phe Gln Asp Val Leu Phe Val Phe Asp Gly
35 40 45
Thr Lys Ala Ser Leu Gly Ser Pro Thr Ile Ala Asn Ala Gln Val Lys
50 55 60
Ala Glu Tyr Leu Ser His Val Lys Gly Glu Lys Val Val Ala Tyr Lys
65 70 75 80
Tyr Lys Lys Arg Lys Asn Tyr His Arg Lys His Gly His Arg Gln Lys
85 90 95
Tyr Leu Arg Val Lys Ile Arg Glu Ile Leu Ile
100 105

<210>585

<211>199

<212>PRT

<213>Chlamydia pneumoniae

<400>585

Val Asn Phe Arg Asn Phe Val Val Ser Ser Val Lys Glu Ile Leu Lys
1 5 10 15
Lys Asn Ile Tyr Gln Val Val Met Asp Arg Asp Asn Glu Val Pro Leu
20 25 30
Pro Lys Pro Lys Trp Ile Tyr Arg Thr Gly Ile Gly Gln Asp Ser His
35 40 45
Arg Phe Leu Pro Glu Ser Ser Thr Lys Pro Cys Ile Leu Gly Gly Ile
50 55 60
Ile Phe Asp His Cys Pro Gly Phe Gln Ala Asn Ser Asp Gly Asp Ile
65 70 75 80
Ile Phe His Ala Ile Cys Asn Ala Ile Ser Ser Val Thr Asn Lys Ile
85 90 95
Ile Leu Gly Lys Val Ala Asp Glu Leu Leu Gln Thr Arg Gly Ile Thr
100 105 110
Asp Ser Gly Ile Tyr Leu Glu Glu Ala Leu Lys Ser Leu Lys Pro Asn
115 120 125
Gln Lys Ile Ser His Val Ala Ile Thr Ile Glu Gly Ser Arg Pro Lys
130 135 140
Phe Leu Cys Lys Leu Ser Ala Leu Arg Gln Asn Ile Ala Gln Val Met
145 150 155 160
Asn Leu Thr Pro Thr Asp Ile Gly Ile Thr Ala Thr Ser Gly Glu Gly
165 170 175
Leu Ser Asp Phe Gly Cys Gly Asp Gly Val Gln Cys Phe Cys Val Leu
180 185 190
Thr Val Met Glu Tyr Cys Asp
195

<210>586

<211>346

<212>PRT

<213>Chlamydia pneumoniae

<400>586

Ile Pro Ala Lys Leu Asn Ser Phe Phe Pro Asp Lys Asp Pro Lys Ile
1 5 10 15
Thr Leu Tyr Asp Ala Ile Gln Glu Tyr Arg Pro Gln Ile Pro Ile Glu
20 25 30
Leu Phe Ala Glu Ser Val Phe Pro Leu Leu Pro Arg Phe Tyr Ser Ile
35 40 45
Ala Ser Ser Pro Asp Leu His Pro Lys Ser Ile Glu Leu Leu Val Lys
50 55 60
His Val Ser Tyr Pro Gly Lys Tyr Gln Lys Arg Phe Gly Val Cys Ser
65 70 75 80
Ser Phe Leu Cys Ser Glu Leu Gln Val Asn Asp Ser Ala Tyr Ile Phe
85 90 95

Val Gln Pro Thr Lys Phe Thr Leu Ser Thr Gln Thr Gly Lys
 100 105 110
 Pro Leu Val Met Ile Gly Ala Gly Thr Gly Ile Ala Pro Tyr Lys Ala
 115 120 125
 Phe Leu Glu Glu Arg Leu Phe Asn Lys Asp Pro Gly Asn Asn Leu Leu
 130 135 140
 Phe Phe Gly Glu Arg Lys Glu Lys Val Asn Phe Tyr Tyr Arg Glu Phe
 145 150 155 160
 Trp Asn His Ala Glu Glu Gly Lys Leu Lys Leu Phe Leu Ala Phe
 165 170 175
 Ser Arg Glu Arg Asp Gln Lys Val Tyr Val Gln Asp Leu Leu Arg Ile
 180 185 190
 Gln Lys Asp Glu Val Arg Lys Ala Tyr Glu Glu Gly Gly Phe Phe Phe
 195 200 205
 Val Cys Gly Arg Lys Val Leu Gly Ile Glu Val Lys His Ala Leu Glu
 210 215 220
 Glu Ile Leu Gly Lys Asp Thr Leu Ala Ser Leu Arg Lys Glu His Arg
 225 230 235 240
 Tyr Val Val Asp Val Tyr
 245

<210>587

<211>85

<212>PRT

<213>Chlamydia pneumoniae

<400>587

Lys Met Tyr Leu Gln Glu Lys Phe Lys Ala Gln Gln Val Pro Leu Val
 1 5 10 15
 Leu Arg Glu Leu Leu Ser Cys Ser Asp Ser Ile Asn Asp Ser Asp Pro
 20 25 30
 Ile Tyr Arg Met Val Phe Asp Ser Asn Asp Thr Thr Ile Ser Tyr Lys
 35 40 45
 Val Gly Asp Ala Leu Gly Val Leu Pro Glu Asn Ser Lys Glu Val Ser
 50 55 60
 Glu His Val Leu Gln Leu Arg Leu Phe Pro Asn Asp Pro Cys Gln
 65 70 75 80
 Arg Lys Lys Asn Phe
 85

<210>588

<211>118

<212>PRT

<213>Chlamydia pneumoniae

<400>582

Lys Lys Phe Lys Lys Arg Leu Leu Arg Ser Lys Gly Cys Met Lys Gln
 1 5 10 15
 Gln Lys Gln Lys Ile Arg Ile Arg Leu Lys Gly Phe Asp Gln Gly Gln
 20 25 30
 Leu Asp Arg Ser Thr Ala Asp Ile Val Glu Thr Ala Lys Arg Thr Gly
 35 40 45
 Ala Arg Val Val Gly Pro Ile Pro Leu Pro Thr Lys Arg Glu Val Tyr
 50 55 60
 Thr Val Leu Arg Ser Pro His Val Asp Lys Lys Ser Arg Glu Gln Phe
 65 70 75 80
 Glu Ile Arg Thr His Lys Arg Leu Val Asp Ile Leu Asp Pro Thr Gly
 85 90 95
 Lys Thr Ile Asp Ala Leu Lys Met Leu Ala Leu Pro Ala Gly Val Asp
 100 105 110
 Ile Lys Ile Lys Ala Ala
 115

<210>589

<211>651

<212>PRT

<213>Chlamydia pneumoniae

<400>589

Ser His Glu Gly Gly Ala Thr Met Asp Trp Met Ala Gln Glu Gln Glu

1	Arg	Gly	Ile	Thr	Ile	Thr	Ser	Ala	Ala	Thr	Thr	Val	Phe	Tyr	Leu	Gly	15
			20						25					30			
	Ala	Lys	Ile	Asn	Ile	Ile	Asp	Thr	Pro	Gly	His	Val	Asp	Phe	Thr	Ile	
		35					40						45				
	Glu	Val	Glu	Arg	Ser	Leu	Arg	Val	Leu	Asp	Gly	Ala	Val	Ala	Val	Phe	
		50					55					60					
	Asp	Ala	Val	Ser	Gly	Val	Glu	Pro	Gln	Ser	Glu	Thr	Val	Tyr	Arg	Gln	
		65				70					75					80	
	Ala	Asp	Lys	Tyr	Gly	Val	Pro	Arg	Ile	Ala	Phe	Val	Asn	Lys	Met	Asp	
			85							90					95		
	Arg	Met	Gly	Ala	Asp	Tyr	Phe	Ala	Ala	Val	Glu	Ser	Met	Lys	Glu	Lys	
		100							105					110			
	Leu	Gly	Ala	Asn	Ala	Phe	Pro	Val	His	Cys	Pro	Ile	Gly	Ser	Glu	Ser	
		115					120						125				
	Gln	Phe	Val	Gly	Met	Val	Asp	Leu	Ile	Ser	Gln	Lys	Ala	Leu	Tyr	Phe	
		130					135					140					
	Leu	Asp	Asp	Thr	Leu	Gly	Ala	Lys	Trp	Glu	Glu	Lys	Glu	Ile	Ser	Glu	
	145				150					155						160	
	Asp	Leu	Lys	Glu	Arg	Cys	Ala	Glu	Leu	Arg	Ala	Asn	Leu	Leu	Glu	Glu	
			165						170						175		
	Leu	Ala	Thr	Ile	Asp	Glu	Ser	Asn	Glu	Ala	Phe	Met	Met	Lys	Val	Leu	
		180							185					190			
	Glu	Asp	Pro	Asp	Ser	Ile	Thr	Glu	Asp	Glu	Ile	His	Gln	Val	Met	Arg	
		195					200						205				
	Lys	Gly	Val	Ile	Glu	Asn	Lys	Ile	Asn	Pro	Val	Leu	Cys	Gly	Thr	Ala	
		210					215					220					
	Phe	Lys	Asn	Lys	Gly	Val	Gln	Gln	Leu	Leu	Asn	Val	Ile	Val	Lys	Trp	
	225				230						235					240	
	Leu	Pro	Ser	Pro	Leu	Asp	Arg	Gly	Asn	Ile	Arg	Gly	Ile	Asn	Leu	Lys	
			245						250						255		
	Thr	Asp	Gln	Glu	Ile	Ser	Leu	Glu	Pro	Arg	Arg	Asp	Gly	Pro	Leu	Ala	
			260						265					270			
	Ala	Leu	Ala	Phe	Lys	Ile	Met	Thr	Asp	Pro	Tyr	Val	Gly	Arg	Ile	Thr	
		275						280					285				
	Phe	Ile	Arg	Ile	Tyr	Ser	Gly	Thr	Leu	Lys	Lys	Gly	Ser	Ala	Ile	Leu	
		290					295					300					
	Asn	Ser	Thr	Lys	Asp	Lys	Lys	Glu	Arg	Ile	Ser	Arg	Leu	Leu	Glu	Met	
	305					310					315					320	
	His	Ala	Asn	Glu	Arg	Thr	Asp	Arg	Asp	Glu	Phe	Thr	Val	Gly	Asp	Ile	
			325							330					335		
	Gly	Ala	Cys	Val	Gly	Leu	Lys	Phe	Ser	Val	Thr	Gly	Asp	Thr	Leu	Cys	
			340						345					350			
	Asp	Asp	Asn	Gln	Glu	Ile	Val	Leu	Glu	Arg	Ile	Glu	Phe	Pro	Asp	Pro	
			355					360					365				
	Val	Ile	Asp	Met	Ala	Ile	Glu	Pro	Lys	Ser	Lys	Gly	Asp	Arg	Glu	Lys	
		370					375					380					
	Leu	Ala	Gln	Ala	Leu	Ser	Ser	Leu	Ser	Glu	Glu	Asp	Pro	Thr	Phe	Arg	
	385					390					395					400	
	Val	Ser	Thr	Asn	Glu	Glu	Thr	Gly	Gln	Thr	Ile	Ile	Ser	Gly	Met	Gly	
			405							410					415		
	Glu	Leu	His	Leu	Asp	Ile	Leu	Arg	Asp	Arg	Met	Ile	Arg	Glu	Phe	Lys	
			420						425					430			
	Val	Glu	Ala	Asn	Val	Gly	Lys	Pro	Gln	Val	Ser	Tyr	Lys	Glu	Thr	Ile	
		435						440					445				
	Thr	Val	Ser	Gly	Asn	Ser	Glu	Thr	Lys	Tyr	Val	Lys	Gln	Ser	Gly	Gly	
		450					455					460					
	Arg	Gly	Gln	Tyr	Ala	His	Val	Cys	Leu	Glu	Ile	Glu	Pro	Asn	Glu	Pro	
	465					470					475					480	
	Gly	Lys	Gly	Asn	Glu	Val	Val	Ser	Lys	Ile	Val	Gly	Gly	Val	Ile	Pro	
			485							490					495		
	Lys	Glu	Tyr	Ile	Pro	Ala	Val	Ile	Lys	Gly	Ile	Glu	Glu	Gly	Leu	Asn	
			500						505					510			
	Thr	Gly	Val	Leu	Ala	Gly	Tyr	Gly	Leu	Val	Asp	Val	Lys	Val	Ser	Ile	

515 520 525
 Val Phe Gly Ser Tyr His Glu Val Asp Ser Ser Glu Met Ala Phe Lys
 530 535 540
 Ile Cys Gly Ser Met Ala Val Lys Asp Ala Cys Arg Lys Ala Lys Pro
 545 550 555
 Val Ile Leu Glu Pro Ile Met Lys Val Ala Val Ile Thr Pro Glu Asp
 565 570 575
 His Leu Gly Asp Val Ile Gly Asp Leu Asn Arg Arg Arg Gly Lys Ile
 580 585 590
 Leu Gly Gln Glu Ser Ser Arg Gly Met Ala Gln Val Asn Ala Glu Val
 595 600 605
 Pro Leu Ser Glu Met Phe Gly Tyr Thr Thr Ser Leu Arg Ser Leu Thr
 610 615 620
 Ser Gly Arg Ala Thr Ser Thr Met Glu Pro Ala Phe Phe Ala Lys Val
 625 630 635 640
 Pro Gln Lys Ile Gln Glu Glu Ile Val Lys Lys
 645 650

<210>590

<211>82

<212>PRT

<213>Chlamydia pneumoniae

<400>590

Leu Asn Tyr Gly Glu Asn Asn Lys Phe Met Ser Asn Gln Glu Phe Asp
 1 5 10 15
 Leu Ser Ala Ile Arg Asn Ile Gly Ile Met Ala His Ile Asp Ala Gly
 20 25 30
 Lys Thr Thr Thr Thr Glu Arg Ile Leu Phe Tyr Ala Gly Arg Thr His
 35 40 45
 Lys Ile Gly Glu Val Met Lys Ala Glu Leu Pro Trp Thr Gly Trp Pro
 50 55 60
 Arg Ser Lys Lys Glu Glu Leu Arg Leu Pro Leu Leu Gln Leu Leu Ser
 65 70 75 80
 Ser Gly

<210>591

<211>159

<212>PRT

<213>Chlamydia pneumoniae

<400>591

Met Tyr Met Ser Arg Arg His Ser Ala Glu Lys Arg Asp Ile Pro Gly
 1 5 10 15
 Asp Pro Ile Tyr Gly Ser Val Ile Leu Glu Lys Phe Ile Asn Lys Val
 20 25 30
 Met Met His Gly Lys Lys Ser Val Ala Arg Lys Ile Val Tyr Ser Ala
 35 40 45
 Leu Glu Arg Phe Gly Lys Lys Leu Asn Leu Glu Asn Val Leu Glu Gly
 50 55 60
 Phe Gly Glu Ala Leu Glu Asn Ala Lys Pro Ile Leu Glu Val Arg Ser
 65 70 75 80
 Arg Arg Val Gly Gly Ala Thr Tyr Gln Val Pro Val Glu Val Ala Ser
 85 90 95
 Glu Arg Arg Asn Cys Leu Ala Met Gln Trp Ile Ile Lys His Ala Arg
 100 105 110
 Ser Lys Pro Gly Lys Ser Met Glu Val Gly Leu Ala Thr Glu Leu Ile
 115 120 125
 Asp Cys Phe Asn Lys Gln Gly Ala Thr Ile Lys Lys Arg Glu Asp Thr
 130 135 140
 His Arg Met Ala Glu Ala Asn Lys Ala Phe Ala His Tyr Lys Trp
 145 150 155

<210>592

<211>146

<212>PRT

<213>Chlamydia pneumoniae

<400>592

Leu Pro Thr Lys Arg Ala Leu Leu Tyr Ile Ser Met Val Val Val
 1 5 10 15
 Arg Leu Lys Arg Glu Glu Tyr Met Pro Thr Ile Asn Gln Leu Ile Arg
 20 25 30
 Lys Arg Arg Lys Ser Ser Leu Ala Arg Lys Lys Ser Pro Ala Leu Gln
 35 40 45
 Lys Cys Pro Gln Lys Arg Gly Val Cys Leu Gln Val Lys Thr Lys Thr
 50 55 60
 Pro Lys Lys Pro Asn Ser Ala Leu Arg Lys Val Ala Trp Val Arg Leu
 65 70 75 80
 Ser Asn Gly Gln Glu Val Ile Ala Tyr Ile Gly Gly Glu Gly His Asn
 85 90 95
 Leu Gln Glu His Ser Ile Val Leu Ile Gln Gly Gly Arg Val Lys Asp
 100 105 110
 Leu Pro Gly Val Arg Tyr His Ile Val Arg Gly Thr Leu Asp Cys Ala
 115 120 125
 Ala Val Lys Asn Arg Lys Gln Ser Arg Ser Arg Tyr Gly Ala Lys Arg
 130 135 140
 Pro Lys
 145

<210>593

<211>268

<212>PRT

<213>Chlamydia pneumoniae

<400>593

Gly Cys Met Trp Arg Val Val Leu Arg Phe Leu Ile Ile Phe Ile Leu
 1 5 10 15
 Gly Arg Ala Val Phe Pro Leu Arg Ala Ser Glu Ser Phe Ser Trp Glu
 20 25 30
 Thr Ser Thr Cys Leu Thr Val Leu Gly Ile Pro Phe Ile Asp Ile Ile
 35 40 45
 Leu Thr Thr Asn Glu Asp Phe Val Ala Gln Cys Gly Leu Gln Ile Gly
 50 55 60
 Thr Ile Ser Ser Thr Asn Asn Ala Lys Ile Lys Glu Ile Phe Leu Ile
 65 70 75 80
 Tyr Lys Glu Lys Phe Pro Glu Ala Ser Ile Ser Phe Lys Arg Lys Glu
 85 90 95
 Pro Leu Asn Leu Ser Gln Ser His Leu Ser Asp Leu Gly Ile Leu Cys
 100 105 110
 Met Arg Asn Gly Glu Thr Tyr Ala Glu Gly Met Ala Asn Lys Glu Asn
 115 120 125
 Gly Pro Ala Leu Lys Gln Pro Lys Asp Leu Arg Leu Val Leu Arg Cys
 130 135 140
 Pro Asn Gln Pro Asp Thr Leu Leu Tyr Ser Glu Lys Glu Ala Glu Lys
 145 150 155 160
 Gly Ile Glu Thr Asn Thr Cys Leu Cys Asn Gln Gly Tyr Thr Leu Leu
 165 170 175
 Asp Gly Gln Leu Ile Leu Tyr Gly Asp Ser Ile Glu Lys Phe Leu Lys
 180 185 190
 Glu Thr Lys Arg Lys Asn Asn His Thr Leu Val Asp Leu Cys Asp Ser
 195 200 205
 Gln Val Val Thr Thr Phe Leu Gly Arg Phe Trp Ser Leu Leu Asn Tyr
 210 215 220
 Val Gln Val Leu Phe Leu Ser Glu Asp Ser Ala Lys Xaa Leu Ala Gly
 225 230 235 240
 Ile Pro Asp Leu Ala Gln Xaa Arg Asn Cys Phe Pro Thr Pro Tyr Leu
 245 250 255
 Cys Phe Leu Phe Ile Pro Thr Ile Leu Phe Thr Ser
 260 265

<210>594

<211>649

<212>PRT

<213>Chlamydia pneumoniae

<400>594

Met Phe Val Met Lys Lys Leu Val Arg Leu Cys Val Val Leu Ser
1 5 10 15
Leu Leu Pro Asn Val Leu Phe Ser Ser Asp Leu Leu Arg Glu Glu Gly
20 25 30
Ile Lys Lys Met Met Asp Lys Leu Ile Glu Tyr His Val Asp Ala Gln
35 40 45
Glu Val Ser Thr Asp Ile Leu Ser Arg Ser Leu Ser Ser Tyr Ile Gln
50 55 60
Ser Phe Asp Pro His Lys Ser Tyr Leu Ser Asn Gln Glu Val Ala Val
65 70 75 80
Phe Leu Gln Ser Pro Glu Thr Lys Lys Arg Leu Leu Lys Asn Tyr Lys
85 90 95
Ala Gly Asn Phe Ala Ile Tyr Arg Asn Ile Asn Gln Leu Ile His Glu
100 105 110
Ser Ile Leu Arg Ala Arg Gln Trp Arg Asn Glu Trp Val Lys Asn Pro
115 120 125
Lys Glu Leu Val Leu Glu Ala Ser Ser Tyr Gln Ile Ser Lys Gln Pro
130 135 140
Met Gln Trp Ser Lys Ser Leu Asp Glu Val Lys Gln Arg Gln Arg Ala
145 150 155 160
Leu Leu Leu Ser Tyr Leu Ser Leu His Leu Ala Gly Ala Ser Ser Ser
165 170 175
Arg Tyr Glu Gly Lys Glu Glu Gln Leu Ala Ala Leu Cys Leu Arg Gln
180 185 190
Ile Glu Asn His Glu Asn Val Tyr Leu Gly Ile Asn Asp His Gly Val
195 200 205
Ala Met Asp Arg Asp Glu Glu Ala Tyr Gln Phe His Ile Arg Val Val
210 215 220
Lys Ala Leu Ala His Ser Leu Asp Ala His Thr Ala Tyr Phe Ser Lys
225 230 235 240
Asp Glu Ala Leu Ala Met Arg Ile Gln Leu Glu Lys Gly Met Cys Gly
245 250 255
Ile Gly Val Val Leu Lys Glu Asp Ile Asp Gly Val Val Val Arg Glu
260 265 270
Ile Ile Pro Gly Gly Pro Ala Ala Lys Ser Gly Asp Leu Gln Leu Gly
275 280 285
Asp Ile Ile Tyr Arg Val Asp Gly Lys Asp Ile Glu His Leu Ser Phe
290 295 300
Arg Gly Val Leu Asp Cys Leu Arg Gly Ser His Gly Ser Thr Val Val
305 310 315 320
Leu Asp Ile His Arg Gly Glu Ser Asp His Thr Ile Ala Leu Arg Arg
325 330 335
Glu Lys Ile Leu Leu Glu Asp Arg Arg Val Asp Val Ser Tyr Glu Pro
340 345 350
Tyr Gly Asp Gly Val Ile Gly Lys Val Thr Leu His Ser Phe Tyr Glu
355 360 365
Gly Glu Asn Gln Val Ser Ser Glu Gln Asp Leu Arg Arg Ala Ile Gln
370 375 380
Gly Leu Lys Glu Lys Asn Leu Leu Gly Leu Val Leu Asp Ile Arg Glu
385 390 395 400
Asn Thr Gly Gly Phe Leu Ser Gln Ala Ile Lys Val Ser Gly Leu Phe
405 410 415
Met Thr Asn Gly Val Val Val Val Ser Arg Tyr Ala Asp Gly Thr Met
420 425 430
Lys Cys Tyr Arg Thr Val Ser Pro Lys Lys Phe Tyr Asp Gly Pro Leu
435 440 445
Ala Ile Leu Val Ser Lys Ser Ser Ala Ser Ala Ala Glu Ile Val Ala
450 455 460
Gln Thr Leu Gln Asp Tyr Gly Val Ala Leu Val Val Gly Asp Glu Gln
465 470 475 480
Thr Tyr Gly Lys Gly Thr Ile Gln His Gln Thr Ile Thr Gly Asp Ala
485 490 495
Ser Gln Asp Asp Cys Phe Lys Val Thr Val Gly Lys Tyr Tyr Ser Pro
500 505 510

Ser Gly Lys Ser Ser Gln Leu Gln Gly Val Lys Ser Ile Leu Ile
 515 520 525
 Pro Ser Leu Tyr Ala Glu Asp Arg Leu Gly Glu Arg Phe Leu Glu His
 530 535 540
 Pro Leu Pro Ala Asp Cys Cys Asp Asn Val Leu His Asp Pro Leu Thr
 545 550 555 560
 Asp Leu Asp Thr Gln Thr Arg Pro Trp Phe Gln Lys Tyr Tyr Leu Pro
 565 570 575
 Asn Leu Gln Lys Gln Glu Thr Leu Trp Arg Glu Met Leu Pro Gln Leu
 580 585 590
 Thr Lys Asn Ser Glu Gln Arg Leu Ser Glu Asn Ser Asn Phe Gln Ala
 595 600 605
 Phe Leu Ser Gln Ile Lys Ser Ser Glu Lys Thr Asp Leu Ser Tyr Gly
 610 615 620
 Ser Asn Asp Leu Gln Leu Glu Glu Ser Ile Asn Ile Leu Lys Asp Met
 625 630 635 640
 Ile Leu Leu Gln Gln Cys Arg Lys
 645

<210>595

<211>199

<212>PRT

<213>Chlamydia pneumoniae

<400>595

Glu Asn Gly Met Ser Ser Asn Leu His Pro Val Gly Gly Thr Gly Thr
 1 5 10 15
 Gly Ala Ala Ala Pro Glu Ser Val Leu Asn Ile Val Glu Glu Ile Ala
 20 25 30
 Ala Ser Gly Ser Val Thr Ala Gly Leu Gln Ala Ile Thr Ser Ser Pro
 35 40 45
 Gly Met Val Asn Leu Leu Ile Gly Trp Ala Lys Thr Lys Phe Ile Gln
 50 55 60
 Pro Ile Arg Glu Ser Lys Leu Phe Gln Ser Arg Ala Cys Gln Ile Thr
 65 70 75 80
 Leu Leu Val Leu Gly Ile Leu Leu Val Val Ala Gly Leu Ala Cys Met
 85 90 95
 Phe Ile Phe His Ser Gln Leu Gly Ala Asn Ala Phe Trp Leu Ile Ile
 100 105 110
 Pro Ala Ala Ile Gly Leu Ile Lys Leu Leu Val Thr Ser Leu Cys Phe
 115 120 125
 Asp Glu Ala Cys Thr Ser Glu Lys Leu Met Val Phe Gln Lys Trp Ala
 130 135 140
 Gly Val Leu Glu Asp Gln Leu Asp Asp Gly Ile Leu Asn Asn Ser Asn
 145 150 155 160
 Lys Ile Phe Gly His Val Lys Thr Glu Gly Asn Thr Ser Arg Ala Xaa
 165 170 175
 Thr Pro Val Leu Asn Asp Gly Arg Gly Xaa Pro Val Leu Ser Pro Leu
 180 185 190
 Val Ser Lys Ile Ala Arg Val
 195

<210>596

<211>556

<213>PRT

<213>Chlamydia pneumoniae

<400>596

Met Ser Lys Leu Ile Arg Arg Val Val Thr Val Leu Ala Leu Thr Ser
 1 5 10 15
 Met Ala Ser Cys Phe Ala Ser Gly Gly Ile Glu Ala Ala Val Ala Glu
 20 25 30
 Ser Leu Ile Thr Lys Ile Val Ala Ser Ala Glu Thr Lys Pro Ala Pro
 35 40 45
 Val Pro Met Thr Ala Lys Lys Val Arg Leu Val Arg Arg Asn Lys Gln
 50 55 60
 Pro Val Glu Gln Lys Ser Arg Gly Ala Phe Cys Asp Lys Glu Phe Tyr
 65 70 75 80

Pro Cys Glu Glu Gly Arg Cys Gln Pro Val Glu Ala Gln Glu Ser
 85 90 95
 Cys Tyr Gly Arg Leu Tyr Ser Val Lys Val Asn Asp Asp Cys Asn Val
 100 105 110
 Glu Ile Cys Gln Ser Val Pro Glu Tyr Ala Thr Val Gly Ser Pro Tyr
 115 120 125
 Pro Ile Glu Ile Leu Ala Ile Gly Lys Lys Asp Cys Val Asp Val Val
 130 135 140
 Ile Thr Gln Gln Leu Pro Cys Glu Ala Glu Phe Val Ser Ser Asp Pro
 145 150 155 160
 Glu Thr Thr Pro Thr Ser Asp Gly Lys Leu Val Trp Lys Ile Asp Arg
 165 170 175
 Leu Gly Ala Gly Asp Lys Cys Lys Ile Thr Val Trp Val Lys Pro Leu
 180 185 190
 Lys Glu Gly Cys Cys Phe Thr Ala Ala Thr Val Cys Ala Cys Pro Glu
 195 200 205
 Leu Arg Ser Tyr Thr Lys Cys Gly Gln Pro Ala Ile Cys Ile Lys Gln
 210 215 220
 Glu Gly Pro Asp Cys Ala Cys Leu Arg Cys Pro Val Cys Tyr Lys Ile
 225 230 235 240
 Glu Val Val Asn Thr Gly Ser Ala Ile Ala Arg Asn Val Thr Val Asp
 245 250 255
 Asn Pro Val Pro Asp Gly Tyr Ser His Ala Ser Gly Gln Arg Val Leu
 260 265 270
 Ser Phe Asn Leu Gly Asp Met Arg Pro Gly Asp Lys Lys Val Phe Thr
 275 280 285
 Val Glu Phe Cys Pro Gln Arg Arg Gly Gln Ile Thr Asn Val Ala Thr
 290 295 300
 Val Thr Tyr Cys Gly Gly His Lys Cys Ser Ala Asn Val Thr Thr Val
 305 310 315 320
 Val Asn Glu Pro Cys Val Gln Val Asn Ile Ser Gly Ala Asp Trp Ser
 325 330 335
 Tyr Val Cys Lys Pro Val Glu Tyr Ser Ile Ser Val Ser Asn Pro Gly
 340 345 350
 Asp Leu Val Leu His Asp Val Val Ile Gln Asp Thr Leu Pro Ser Gly
 355 360 365
 Val Thr Val Leu Glu Ala Pro Gly Gly Glu Ile Cys Cys Asn Lys Val
 370 375 380
 Val Trp Arg Ile Lys Glu Met Cys Pro Gly Glu Thr Leu Gln Phe Lys
 385 390 395 400
 Leu Val Val Lys Ala Gln Val Pro Gly Arg Phe Thr Asn Gln Val Ala
 405 410 415
 Val Thr Ser Glu Ser Asn Cys Gly Thr Cys Thr Ser Cys Ala Glu Thr
 420 425 430
 Thr Thr His Trp Lys Gly Leu Ala Ala Thr His Met Cys Val Leu Asp
 435 440 445
 Thr Asn Asp Pro Ile Cys Val Gly Glu Asn Thr Val Tyr Arg Ile Cys
 450 455 460
 Val Thr Asn Arg Gly Ser Ala Glu Asp Thr Asn Val Ser Leu Ile Leu
 465 470 475 480
 Lys Phe Ser Lys Glu Leu Gln Pro Ile Ala Ser Ser Gly Pro Thr Lys
 485 490 495
 Gly Thr Ile Ser Gly Asn Thr Val Val Phe Asp Ala Leu Pro Lys Leu
 500 505 510
 Gly Ser Lys Glu Ser Val Glu Phe Ser Val Thr Leu Lys Gly Ile Ala
 515 520 525
 Pro Gly Asp Ala Arg Gly Glu Ala Ile Leu Ser Ser Asp Thr Leu Thr
 530 535 540
 Ser Pro Val Ser Asp Thr Glu Asn Thr His Val Tyr
 545 550 555

<210>597

<211>90

<212>PRT

<213>Chlamydia pneumoniae

<400>597
Met Lys Lys Ala Val Leu Ile Ala Ala Met Phe Cys Gly Val Val Ser
1 5 10 15
Leu Ser Ser Cys Cys Arg Ile Val Asp Cys Cys Phe Glu Asp Pro Cys
30 25 30
Ala Pro Ser Ser Cys Asn Pro Cys Glu Val Ile Arg Lys Lys Glu Arg
35 40 45
Ser Cys Gly Gly Asn Ala Cys Gly Ser Tyr Val Pro Ser Cys Ser Asn
50 55 60
Pro Cys Gly Ser Thr Glu Cys Asn Ser Gln Ser Pro Gln Val Lys Gly
65 70 75 80
Cys Thr Ser Pro Asp Gly Arg Cys Lys Gln
85 90

<210>598

<211>516

<212>PRT

<213>Chlamydia pneumoniae

<400>598

Met Lys Ser Leu Trp Ser Lys Asp Lys Arg Ile Met Asn Trp Glu Asn
1 5 10 15
Val Arg Val Arg Val Ala Pro Ser Pro Thr Gly Asp Pro His Val Gly
20 25 30
Thr Ala Tyr Met Ala Leu Phe Asn Glu Ile Phe Ala Lys Arg Phe Lys
35 40 45
Gly Lys Met Ile Leu Arg Ile Glu Asp Thr Asp Arg Thr Arg Ser Arg
50 55 60
Gln Asp Tyr Glu Glu Asn Ile Phe Ser Ala Leu Arg Trp Cys Gly Ile
65 70 75 80
Gln Trp Asp Glu Gly Pro Asp Val Gly Gly Pro Tyr Gly Pro Tyr Arg
85 90 95
Gln Ser Glu Arg Thr Lys Ile Tyr Gln Gly Tyr Val Glu Thr Leu Leu
100 105 110
Lys Thr Asp Cys Ala Tyr Lys Cys Phe Ala Thr Pro Gln Glu Leu Ala
115 120 125
Glu Met Arg Ala Val Ala Ser Thr Leu Gly Tyr Arg Gly Gly Tyr Asp
130 135 140
Arg Arg Tyr Arg Tyr Leu Ser Pro Glu Glu Val Ala Ser Arg Glu Ala
145 150 155 160
Ala Gly Gln Pro Tyr Thr Ile Arg Leu Lys Val Pro Leu Ser Gly Glu
165 170 175
Cys Val Phe Glu Asp Tyr Ser Lys Gly Arg Val Val Phe Pro Trp Ala
180 185 190
Asp Val Asp Asp Gln Val Leu Val Lys Ser Asp Gly Phe Pro Thr Tyr
195 200 205
His Phe Ala Asn Val Ile Asp Asp His Leu Met Gly Ile Thr His Val
210 215 220
Leu Arg Gly Glu Glu Trp Leu Ser Ser Thr Pro Lys His Leu Leu Leu
225 230 235 240
Tyr Glu Ala Phe Gly Trp Glu Pro Pro Val Phe Leu His Met Pro Leu
245 250 255
Leu Leu Asn Pro Asp Gly Thr Lys Leu Ser Lys Arg Lys Asn Pro Thr
260 265 270
Ser Ile Phe Tyr Tyr Arg Asp Ser Gly Tyr Val Lys Glu Ala Phe Val
275 280 285
Asn Phe Leu Thr Leu Met Gly Tyr Ser Met Glu Gly Asp Glu Glu Val
290 295 300
Tyr Ser Leu Glu Arg Ile Ile Glu Thr Phe Asn Pro Arg Arg Ile Gly
305 310 315 320
Lys Ser Gly Ala Val Phe Asp Ile Gln Lys Leu Asp Trp Met Asn Lys
325 330 335
His Tyr Leu Asn His Glu Gly Ser Pro Glu Cys Leu Leu Lys Glu Leu
340 345 350
Gln Gly Trp Leu Leu Asn Asp Glu Phe Phe Leu Lys Ile Leu Pro Leu
355 360 365

Cys Gln Ser Arg Ile Thr Thr Leu Ala Glu Phe Ile Asn Thr Ser
 370 375 320
 Phe Phe Phe Ser Gly Leu Leu Glu Tyr Arg Val Glu Glu Leu Leu Pro
 385 390 395 400
 Gln Ala Leu Ser Pro Glu Lys Ala Ala Ile Leu Leu Tyr Ser Tyr Val
 405 410 415
 Lys Tyr Leu Glu Lys Thr Asp Gln Trp Thr Lys Glu Thr Cys Tyr Leu
 420 425 430
 Gly Ser Lys Trp Leu Ala Gln Ala Phe Asn Val His His Lys Lys Ala
 435 440 445
 Ile Ile Pro Leu Leu Tyr Val Ala Ile Thr Gly Lys Lys Gln Gly Leu
 450 455 460
 Pro Leu Phe Asp Ser Ile Glu Ile Leu Gly Lys Pro Arg Ala Arg Ala
 465 470 475 480
 Arg Leu Val Tyr Ala Glu Lys Leu Leu Gly Gly Val Pro Lys Lys Leu
 485 490 495
 Ala Ala Thr Val Asp Lys Phe Met Gln Arg Glu Asp Phe Glu Glu Ala
 500 505 510
 Thr Phe Asp Leu
 515

<310>599

<311>181

<312>PRT

<313>Chlamydia pneumoniae

<400>599

Met Ala Cys Glu Gln His Glu Gly Cys Tyr Glu Leu Glu Glu Arg Glu
 1 5 10 15
 Glu Arg Glu Glu Ile Glu Asp Ile Lys Asp Ser Asp Thr Lys Trp Val
 20 25 30
 Ser Ile Thr Gln Ala Ala Lys Leu His Asn Val Thr Arg Gln Ala Ile
 35 40 45
 Tyr Val Ala Ile Lys Gln Lys Lys Leu Lys Ala Ser Lys Glu Thr Arg
 50 55 60
 Trp Glu Ile Asp Ile Lys Asp Leu Glu Glu Tyr Lys Arg Asn Arg Tyr
 65 70 75 80
 Ser Arg Lys Lys Ser Leu Tyr Gln Gly Glu Leu Val Phe Asp Asn Gly
 85 90 95
 Lys Gly Cys Tyr Ser Ile Asn Gln Val Ala Gln Ile Leu Gly Ile Pro
 100 105 110
 Val Gln Lys Val Tyr Tyr Ala Thr Arg Thr Gly Thr Ile Arg Gly Glu
 115 120 125
 Arg Lys Gly Ala Ala Trp Val Ile His Val Ser Glu Ile Glu Arg Tyr
 130 135 140
 Lys Asn Glu Tyr Leu Ser Lys Gln Ala Ala Lys Lys Leu Lys Gly Ala
 145 150 155 160
 Glu Pro Lys Glu His Gln Ala Pro Asn Phe Glu Pro Pro Thr Glu Ile
 165 170 175
 Phe Pro Glu Ser Asn
 180

<210>600

<211>373

<212>PRT

<213>Chlamydia pneumoniae

<400>600

Met Ser Ile Ala Ile Ala Arg Glu Gln His Ala Ala Ile Leu Asp Met
 1 5 10 15
 His Pro Lys Pro Ser Ile Ala Met Phe Ser Ser Glu Gln Ala Arg Thr
 20 25 30
 Ser Trp Glu Lys Arg Gln Ala His Pro Tyr Leu Tyr Arg Leu Leu Glu
 35 40 45
 Ile Ile Trp Gly Val Val Lys Phe Leu Leu Gly Leu Ile Phe Phe Ile
 50 55 60
 Pro Leu Gly Leu Phe Trp Val Leu Gln Lys Ile Cys Gln Asn Phe Ile
 65 70 75 80

Leu Leu Gly Ala Ser Gly Trp Ile Phe Arg Pro Ile Cys Arg Asp Ser
 85 90 95
 Asn Leu Leu Arg Gln Ala Tyr Ala Ala Arg Leu Phe Ser Ala Ser Phe
 100 105 110
 Gln Asp His Val Ser Ser Val Arg Arg Val Cys Leu Gln Tyr Asp Glu
 115 120 125
 Val Phe Ile Asp Gly Leu Glu Leu Arg Leu Pro Asn Ala Lys Pro Asp
 130 135 140
 Arg Trp Met Leu Ile Ser Asn Gly Asn Ser Asp Cys Leu Glu Tyr Arg
 145 150 155 160
 Thr Val Leu Gln Gly Glu Lys Asp Trp Ile Phe Arg Ile Ala Glu Glu
 165 170 175
 Ser Gln Ser Asn Ile Leu Ile Phe Asn Tyr Pro Gly Val Met Lys Ser
 180 185 190
 Gln Gly Asn Ile Thr Arg Asn Asn Val Val Lys Ser Tyr Gln Ala Cys
 195 200 205
 Val Arg Tyr Leu Arg Asp Glu Pro Ala Gly Pro Gln Ala Arg Gln Ile
 210 215 220
 Val Ala Tyr Gly Tyr Ser Leu Gly Ala Ser Val Gln Ala Glu Ala Leu
 225 230 235 240
 Ser Lys Glu Ile Ala Asp Gly Ser Asp Ser Val Arg Trp Phe Val Val
 245 250 255
 Lys Asp Arg Gly Ala Arg Ser Thr Gly Ala Val Ala Lys Gln Phe Ile
 260 265 270
 Gly Ser Leu Gly Val Trp Leu Ala Asn Leu Thr His Trp Asn Ile Asn
 275 280 285
 Ser Glu Lys Arg Ser Lys Asp Leu His Cys Pro Glu Leu Phe Ile Tyr
 290 295 300
 Gly Lys Asp Ser Gln Gly Asn Leu Ile Gly Asp Gly Leu Phe Lys Lys
 305 310 315 320
 Glu Thr Cys Phe Ala Ala Pro Phe Leu Asp Pro Lys Asn Leu Glu Glu
 325 330 335
 Cys Ser Gly Lys Lys Ile Pro Val Ala Gln Thr Gly Leu Arg His Asp
 340 345 350
 His Ile Leu Ser Asp Asp Val Ile Lys Glu Val Ala Gly His Ile Arg
 355 360 365
 Arg His Phe Asp Asn
 370

<210>601

<211>564

<212>PRT

<213>Chlamydia pneumoniae

<400>601

Gln Tyr Lys Asn Leu Leu Trp Asp Phe Ser Pro Lys Gly Pro Cys Gly
 1 5 10 15
 Ile Lys Phe Met Thr Asn Ser Asp Asn Ala Ser Ala Ala Gly Leu Leu
 20 25 30
 Trp Ala His Pro Lys Glu Asp Pro Ala Phe Leu Gly Met Ile Ile Lys
 35 40 45
 Glu Phe His Leu Pro Pro Thr Val Ala Gln Ile Phe Ile Ser Arg Gly
 50 55 60
 Phe Gln Thr Ile Gln Glu Ile His Lys Phe Leu Tyr Ser His Leu Ser
 65 70 75 80
 Ser Leu Tyr Asp Pro Gly Leu Phe Leu Asp Met Ser Lys Ala Val Glu
 85 90 95
 Arg Leu Leu Leu Ala Arg Asp Arg Lys Glu His Val Met Ile Tyr Gly
 100 105 110
 Asp Ser Asp Val Asp Gly Met Thr Gly Val Ala Leu Leu Val Glu Phe
 115 120 125
 Leu Arg Asp Ile Asp Val His Val Ser Tyr Phe Phe Leu Gly Ala Ile
 130 135 140
 Leu Lys Gln His Gly Glu Thr Ser Thr Leu Ile Ala Lys Leu Lys Glu
 145 150 155 160
 Glu Gly Ile Thr Leu Leu Ile Thr Val Asp Cys Gly Ile Thr Ala Gly

160 170 175
 Lys Glu Val Ser Asp Ile Thr Arg Gln Gly Ile Asp Val Ile Ile Thr
 180 185 190
 Asp His His Met Pro Thr Gly Lys Ile Pro His Cys Val Val Thr Leu
 195 200 205
 Asn Pro Lys Leu Arg Asp His Thr Tyr Pro Asn Arg Glu Leu Thr Gly
 210 215 220
 Val Gly Val Ala Phe Lys Leu Ala Arg Gly Val Leu Asn Ala Leu Ile
 225 230 235 240
 Ser Arg Asn Leu Val Pro Lys Ser Gln Gly Ser Leu Lys Lys Leu Leu
 245 250 255
 Asp Leu Val Thr Leu Gly Thr Ile Thr Asp Val Gly Val Leu Leu Gly
 260 265 270
 Glu Asn Arg Val Met Val Arg Tyr Gly Ile Lys Glu Ile Ala Arg Gly
 275 280 285
 Ala Arg Pro Gly Leu Asn Lys Leu Cys Ala Leu Cys Gly Val Glu Lys
 290 295 300
 Ser Glu Val Thr Ser Thr Asp Ile Val Leu Lys Ile Ala Pro Lys Leu
 305 310 315 320
 Asn Ser Leu Gly Arg Leu Asp Asp Pro Ala Lys Gly Val Glu Leu Leu
 325 330 335
 Leu Thr Gln Asp Asp Glu Arg Val Asp Ala Leu Ile Met Glu Leu Asp
 340 345 350
 Asn Ile Asn Arg Glu Arg Gln Arg Ile Glu Ala Glu Val Phe Gln Asp
 355 360 365
 Val Gln Glu Ile Leu Asn Ser Asn Pro Glu Ile Leu Lys Gln Ala Ala
 370 375 380
 Ile Val Leu Ser Ser Thr Ala Trp His Ala Arg Val Ile Pro Ile Ile
 385 390 395 400
 Ser Ala Arg Leu Ala Lys Thr Tyr Asn Lys Pro Val Val Ile Ile Ala
 405 410 415
 Ile Gln Arg Gly Ile Gly Lys Gly Ser Ala Arg Thr Ile Gly Ser Phe
 420 425 430
 Pro Leu Leu Gly Val Leu Lys Lys Cys Ser Ser Leu Leu Ser Tyr
 435 440 445
 Gly Gly His Asp Phe Ala Ala Gly Val Ile Met Lys Glu Asp Lys Val
 450 455 460
 Glu Asp Phe Lys Lys Lys Phe Val His Leu Val Asn Ser Ser Leu Lys
 465 470 475 480
 Lys Gly Asp Thr Leu Pro His Leu Glu Ile Asp Ala Tyr Ala Asp Phe
 485 490 495
 Asp Ala Ile Asp Tyr Asp Leu Leu Ala Ser Met Glu Leu Phe Glu Pro
 500 505 510
 Phe Gly Lys Gly Asn Leu Met Pro Ile Phe Tyr Ser Lys Val Arg Gln
 515 520 525
 Val Arg Tyr Pro Lys Val Leu Pro Gly Asn His Leu Lys Leu Tyr Leu
 530 535 540
 Ser Gln Lys Glu Arg Asn Leu Glu Gly Val Ala Ser Val Trp Glu Asp
 545 550 555 560
 Thr Leu Met His

<210>602

<211>997

<212>PRT

<213>Chlamydia pneumoniae

<400>602

Arg Lys Arg Ser Phe Gly Cys Tyr Ile Phe Ser Pro Asn Thr Asp Cys
 1 5 10 15
 Lys His Phe Ser Lys Gly Ser Val Tyr Ile Leu Leu Lys Gly Leu Arg
 20 25 30
 Ser Ile Val Ala Lys Tyr Gln Gln Gly Gly Lys Glu Leu Gln Ser
 35 40 45
 Phe Glu Lys Asp Leu Gln Asn Leu Tyr Asn Cys Phe Ser His Thr Glu
 50 55 60

Ala	Ile	Ser	Trp	Thr	Leu	Gly	Glu	Asp	Gln	Val	Leu	Ile	Arg	His	
65					70					75				80	
Pro	Leu	Gln	Gln	Phe	Leu	Asp	Val	Trp	Gly	Glu	Gly	Phe	Val	Ile	Gly
				85					90					95	
Lys	Glu	Gly	Cys	Ala	Phe	Leu	Glu	Val	Lys	Asp	Ile	Gln	Asp	Arg	Leu
			100					105					110		
Ala	Thr	Val	Asn	Gln	Ile	Glu	Lys	Asn	Arg	Gln	Ser	Asp	Leu	Val	Arg
			115					120					125		
Trp	His	Glu	Gln	Tyr	Arg	His	Ala	Lys	Cys	Ser	Met	Asp	Leu	Gln	Glu
			130			135					140				
Arg	Leu	Ser	Ala	Pro	Ile	Pro	Tyr	Gln	Asn	Leu	Phe	Leu	Glu	Asn	Met
145					150					155					160
Lys	Leu	Asn	Met	Arg	Lys	Phe	Ser	Arg	Gly	Glu	Asn	Ile	Leu	Arg	Leu
			165						170					175	
Gly	Ile	Asp	Phe	Val	Gly	Gly	Arg	Gln	Leu	Leu	Leu	Ser	Phe	Lys	Asp
			180					185					190		
His	Gln	Gly	Lys	Gln	Leu	Thr	Asp	Lys	Glu	Asp	Ile	Leu	Lys	Val	Ser
			195				200					205			
Arg	Glu	Leu	Cys	Ala	Arg	Leu	Asn	Lys	Leu	Gly	Val	Ser	Glu	Ile	Glu
			210				215					220			
Leu	Arg	Arg	Glu	Gly	Asp	Tyr	Ile	His	Leu	Ser	Val	Pro	Gly	Ser	Ser
225					230					235					240
Thr	Ile	Ser	Ser	Ser	Glu	Ile	Leu	Gly	Thr	Ser	Lys	Met	Ser	Phe	His
				245					250					255	
Val	Val	Asn	Glu	Arg	Phe	Ser	Ser	Tyr	Ser	Ala	Ser	Arg	Tyr	Glu	Val
			260					265					270		
Gln	Arg	Phe	Leu	Asp	Tyr	Leu	Trp	Phe	Thr	Ser	Gln	Ala	Gln	Gly	Lys
			275				280					285			
Thr	Ser	Pro	Glu	Glu	Ile	Asn	Thr	Phe	Ala	Ser	Ala	Leu	Phe	Asn	Glu
			290				295					300			
Glu	Val	Asp	Val	Pro	Pro	Ser	Val	His	Glu	Ala	Ile	Thr	Lys	Leu	Lys
305					310					315					320
Ser	Glu	Gly	Leu	Ala	Phe	Ser	Pro	Ser	Gly	Cys	Glu	Thr	Pro	Ser	Thr
				325					330					335	
Asp	Leu	Asp	Thr	Thr	Phe	Ser	Met	Ile	Ala	Ile	Gly	Lys	Asp	Ala	Glu
			340					345					350		
Gln	Lys	Ala	Asn	Pro	Leu	Val	Ile	Val	Phe	Arg	Asn	Tyr	Ala	Leu	Asp
			355				360					365			
Gly	Ala	Ser	Leu	Lys	Asp	Ile	Arg	Pro	Glu	Phe	Ala	Ala	Gly	Glu	Gly
			370				375					380			
Tyr	Val	Leu	Asn	Phe	Ser	Val	Lys	Asp	Thr	Ser	Pro	Lys	Lys	Met	Ala
385					390					395					400
Glu	Lys	Leu	Ser	Pro	Thr	Glu	Ser	Phe	His	Thr	Trp	Thr	Ser	Ala	Tyr
				405					410					415	
Cys	Gln	Glu	Gly	Ile	Ser	Gly	Thr	Ala	Asn	Gly	Gln	Tyr	Ser	Ala	Asn
			420					425					430		
Arg	Gly	Trp	Arg	Met	Ala	Val	Val	Ile	Asp	Gly	Tyr	Met	Val	Ser	Ser
			435				440						445		
Pro	Ile	Leu	Asn	Val	Pro	Leu	Lys	Asn	His	Ala	Ser	Val	Ser	Gly	Lys
			450				455					460			
Phe	Thr	His	Arg	Glu	Val	Ser	Lys	Leu	Ala	Ser	Asp	Leu	Lys	Ser	Gly
465					470					475					480
Ala	Met	Ser	Phe	Val	Pro	Glu	Val	Leu	Ser	Glu	Glu	Thr	Ile	Ser	Ser
				485					490					495	
Asp	Leu	Gly	Lys	Lys	Gln	Cys	Thr	Gln	Gly	Ile	Ile	Ser	Ala	Cys	Cys
			500					505					510		
Gly	Leu	Ala	Met	Leu	Ile	Val	Leu	Met	Ser	Val	Tyr	Tyr	Arg	Phe	Gly
			515					520					525		
Gly	Val	Ile	Ala	Ser	Gly	Ala	Val	Leu	Leu	Asn	Leu	Leu	Ile	Trp	
			530				535					540			
Ala	Ala	Leu	Gln	Tyr	Leu	Asp	Ala	Pro	Leu	Thr	Leu	Ser	Gly	Leu	Ala
545					550					555					560
Gly	Ile	Val	Leu	Ala	Met	Gly	Met	Ala	Val	Asp	Ala	Asn	Val	Leu	Val
				565					570					575	

Phe Glu Arg Ile Arg Glu Glu Phe Leu Leu Ser Gln Ser Lys Lys
 580 585 590
 Ser Val Glu Lys Gly Tyr Thr Lys Ala Phe Gly Ala Ile Phe Asp Ser
 595 600 605
 Asn Leu Thr Thr Val Leu Ala Ser Ala Leu Leu Phe Phe Leu Asp Thr
 610 615 620
 Gly Pro Ile Lys Gly Phe Ala Leu Thr Leu Ile Leu Gly Ile Phe Ser
 625 630 635 640
 Ser Met Phe Thr Ala Leu Phe Met Thr Lys Phe Phe Phe Met Leu Trp
 645 650 655
 Met Asn Lys Thr Gln His Thr Gln Leu His Met Met Asn Lys Phe Val
 660 665 670
 Gly Ile Lys His Asp Phe Leu Arg Gly Cys Lys Lys Leu Trp Ala Val
 675 680 685
 Ser Gly Ser Val Phe Leu Leu Gly Cys Val Ala Leu Gly Phe Gly Ala
 690 695 700
 Trp Asn Ser Val Leu Gly Met Asp Phe Lys Gly Gly Tyr Ala Phe Thr
 705 710 715 720
 Phe Asn Pro Lys Glu His Gly Ile Ser Asp Val Ala Gln Met Arg Gly
 725 730 735
 Lys Val Val His Lys Leu Gln Glu Ala Gly Leu Ser Ser Arg Asp Phe
 740 745 750
 Arg Ile Gln Thr Phe Gly Ser Ser Glu Lys Ile Lys Ile Tyr Phe Ser
 755 760 765
 Asp Lys Ala Leu Ser Tyr Thr Lys Ala Asp Thr Ser Leu Ser Pro Lys
 770 775 780
 Ile Asn Asp His Glu Leu Ala Leu Ala Val Gly Leu Leu Ser Glu Thr
 785 790 795 800
 Gly Leu Asp Phe Ser Thr Glu Thr Leu Asn Glu Thr Gln Asn Phe Trp
 805 810 815
 Ser Lys Val Ser Ser Lys Leu Ser Lys Lys Met Arg Tyr Gln Ala Thr
 820 825 830
 Ile Gly Leu Leu Gly Ala Leu Ala Ile Ile Leu Leu Tyr Val Ser Leu
 835 840 845
 Arg Phe Glu Trp Gln Tyr Ala Phe Ser Ala Val Cys Ala Leu Ile His
 850 855 860
 Asp Leu Leu Ala Thr Cys Ala Val Leu Phe Ile Ala His Phe Phe Leu
 865 870 875 880
 Lys Lys Ile Gln Ile Asp Leu Gln Ala Ile Gly Ala Leu Met Thr Val
 885 890 895
 Leu Gly Tyr Ser Leu Asn Asn Thr Leu Ile Ile Phe Asp Arg Ile Arg
 900 905 910
 Glu Asp Arg Gln Ala Asn Leu Phe Thr Pro Met His Val Leu Val Asn
 915 920 925
 Asp Ala Leu Gln Lys Thr Phe Ser Arg Thr Val Met Thr Thr Ala Thr
 930 935 940
 Thr Leu Ser Val Leu Leu Met Leu Leu Phe Ile Gly Gly Ser Ser Val
 945 950 955 960
 Phe Asn Phe Ala Phe Ile Met Thr Ile Gly Ile Leu Leu Gly Thr Leu
 965 970 975
 Ser Ser Leu Tyr Ile Ala Pro Pro Leu Leu Leu Phe Met Val Arg Lys
 980 985 990
 Glu Asn Arg Ser Lys
 995
 <210>603
 <211>435
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>603
 Ser Gly Ala Met Lys Gln Lys Val Lys Arg Asn Phe Ala Ile Ile Ile
 1 5 10 15
 Cys Val Phe Ala Leu Ala Leu Tyr Tyr Val Leu Pro Thr Cys Leu Tyr
 20 25 30
 Tyr Ala Lys Pro Leu Asp Lys Lys Ile Asp Gly Asn Glu Ala Glu His

35 40
 Ile Ile Lys Ser Phe Thr Lys Gln Ala Gln Gln Val Arg Lys Asp Val
 50 55 60
 Ile Pro Arg Val Ser Ala Ile Leu Ser Ser Leu His Leu Arg Gly His
 65 70 75 80
 Ile Gln Gln His Pro Ala Ile Pro Asp Ile Val Ser Val Arg Phe Lys
 85 90 95
 Arg Gly Glu Asp Ala Glu Asp Phe Ile Gly Asn Leu Val His Gly Glu
 100 105 110
 Pro Asn Val Pro Ile Lys Ser Ala Arg Leu His Val Val Gly Tyr Ser
 115 120 125
 Arg Glu His Asp Asp His Val Ile Gln Val Ala Ser Ser Ile Asn Thr
 130 135 140
 Ser Leu Val Glu Ser Asp Phe Ser Phe Val Ser Tyr Ser Ser Glu Asn
 145 150 155 160
 Glu Gln Glu Met Ala Ser Ser Ile Leu Gln Arg Val Tyr Ser Ala Cys
 165 170 175
 Thr Cys Pro Lys Gln Lys Asp Cys Ser Cys Ser Tyr Pro Ser Ile Trp
 180 185 190
 Glu Thr Ala Pro Lys Glu Gln Leu Leu Gln Tyr Ala Lys Asn Leu Ser
 195 200 205
 Ser Gly Phe Glu Val Phe Ser Ser Arg Leu Ser Ala Phe Cys Gln Gln
 210 215 220
 Ser Phe Ser Ser Asn Gln Asp Arg Leu Ala Phe Leu Ser Arg Leu Ser
 225 230 235 240
 Ser Leu Ser Asn Asp Ala Ala Ile Asp Val Glu Asp Gln Lys Leu Leu
 245 250 255
 Lys Ser Val Tyr Glu Thr Leu Ser Gln Thr Ala Cys Ile Arg Ser Leu
 260 265 270
 Asp Cys Pro Tyr Ile Glu Gly Leu Arg Leu Asp Cys Ser Glu Ser Ser
 275 280 285
 Leu Phe Phe Ser Ser Ile Glu Tyr Cys Pro Lys Glu Arg Lys Ile Phe
 290 295 300
 Leu Thr Leu His Ser Asp Leu Leu Ala Gln Arg Thr Ser Leu Ser Lys
 305 310 315 320
 Glu Gln Arg Leu Asp Phe Asp Ser Arg Leu Ala Val Glu Lys Gln Lys
 325 330 335
 Leu Ser Lys Asn Leu Thr Val Gln Val Glu Asp Tyr Asn Asn Gly Phe
 340 345 350
 Ser Phe Gln Trp Met Asp Lys Asp Thr Gln Gly Lys Ile Ile Leu Gln
 355 360 365
 Gly Glu Arg Leu Leu Gln Gly Ile Ala Glu His Leu Thr Ala Leu Thr
 370 375 380
 Leu His Arg Pro Ala Ala Glu Ser Cys Asp Leu Ile Pro Glu Asn Phe
 385 390 395 400
 Pro Val Phe Cys Arg Gln Pro Arg Glu Ser Glu Val Leu Ala Val Thr
 405 410 415
 Ser Phe Leu Pro Ile Gln Ile Ala Asn Thr Phe Leu Lys Ala Pro Phe
 420 425 430
 Thr Ser Tyr
 435

<210>604

<211>367

<212>PRT

<213>Chlamydia pneumoniae

<400>604

Tyr Glu Ile Ser Ser His Ile His Phe Arg Phe Asp Ser His Ser Asn
 1 5 10 15
 Gly His Leu Val Ala Ala Glu Xaa Gly Asn Val His Tyr Val Pro Asn
 20 25 30
 Ala Gln Asn Leu Pro Lys Lys Ile Leu Gly Gly Val Leu Ala Cys Phe
 35 40 45
 Gly Leu Ala Leu Leu Gly Cys Ala Ala Phe Ala Ala Gly Val Cys Gln
 50 55 60

Thr Ile Phe Pro Cys ⁷⁰ Gly Leu Met Ile Leu Gly Leu ⁷⁵ Leu Leu ⁸⁰
 65
 Gly Phe Ala Tyr Leu Gln Tyr Ser Lys Gly Trp Ser Arg Phe Glu Arg ⁹⁵
 85 90
 Pro Leu Phe Arg Glu Thr Lys Val Phe Glu Lys Pro Ile Asn Trp Leu ¹¹⁰
 100 105
 Gly Cys Leu Ser Leu Leu Gln Ser Trp Lys Lys Ile Arg Pro Gly Cys ¹²⁵
 115 120
 Tyr Tyr His Pro Gly Cys Pro Gln Val Glu Ile Cys Glu Gly Ser Gln ¹⁴⁰
 130 135
 Glu Ile Val Thr Lys Ile Phe Gln Lys Lys Ser Asp Arg Asn Thr Ser ¹⁶⁰
 145 150 155
 Ile Phe Leu Ile Gln Glu Met Asp Gln Ile Ala Leu Arg Gln Gly Ile ¹⁷⁵
 165 170
 Glu Lys Ser Ser Leu Ser Arg Lys Thr Phe Ala Ile Asp Pro Ser Val ¹⁹⁰
 180 185
 Val Ser Ser Leu Leu Ser Glu Ile Gln Arg Glu Glu Gln Gln Tyr Leu ²⁰⁵
 195 200
 Asp Pro Lys Val Ile Ser Trp Ser Ser Glu Asp Gln Ala Ser Asp Arg ²²⁰
 210 215
 Thr His Pro Lys Ser Ala Ile Tyr Val Asn Ile Ser Asp Ala Ala Gln ²⁴⁰
 225 230 235
 Glu Pro Gln Gly Arg Cys Tyr Ile Asp Ala Tyr Thr Lys Ala Phe Phe ²⁵⁵
 245 250
 Thr Val Leu Asp Gln Ile Gly Asp Pro Asn Ile Val Lys Lys His Thr ²⁷⁰
 260 265
 Ile Tyr Val Leu Thr Pro Ile Leu Gly Val Pro Asp Ala Leu Pro Lys ²⁸⁵
 275 280
 Glu Glu Gln Glu Asn Leu Lys Leu Leu Ser Gln Ala Ala Phe Leu Tyr ³⁰⁰
 290 295
 Ser Ala Glu Gln Val Ala Lys Arg Met Arg Glu Glu Lys Gln Asp Ser ³²⁰
 305 310 315
 Ile Arg Ile Lys Phe Ile Phe Thr Asp Pro Thr Ser Pro Thr Ser Leu ³³⁵
 325 330
 Tyr Phe Ser Pro His His Ser Ser Thr Pro His Ser Val Thr Pro Ile ³⁵⁰
 340 345
 Ser Leu Ser Gly Phe Val Gly Glu Gln Glu Ser Tyr Thr Phe Ala ³⁶⁵
 355 360

<210>605

<211>261

<212>PRT

<213>Chlamydia pneumoniae

<400>605

Val Thr Tyr Ala Leu Ile Asn Asp Pro Val Asp Leu Ser Leu Ala Thr ¹⁵
 1 5 10
 Asn Asn Ala Glu Ser Lys Phe Pro Ser Leu Gln Arg Leu Pro Asn His ³⁰
 20 25
 Val Ala Ile Ile Met Asp Gly Asn Arg Arg Trp Tyr Lys Lys His Arg ⁴⁵
 35 40
 Glu Glu Cys Gly His Thr His Thr Ser Gly His Tyr Tyr Gly Ala Lys ⁶⁰
 50 55
 Val Leu Pro Asn Ile Leu Asn Ala Val Leu Asp Leu Gly Ile Lys Val ⁸⁰
 65 70 75
 Leu Thr Leu Tyr Thr Phe Ser Thr Glu Asn Phe Gly Arg Pro Lys Glu ⁹⁵
 85 90
 Glu Ile Gln Glu Ile Phe Asn Ile Phe Tyr Thr Gln Leu Asp Lys Gln ¹¹⁰
 100 105
 Leu Pro Tyr Leu Met Glu Asn Glu Ile Cys Leu Arg Cys Ile Gly Asp ¹²⁵
 115 120
 Leu Ser Lys Leu Pro Lys Gly Ile Gln Thr Lys Ile Asn His Val Ser ¹⁴⁰
 130 135
 Arg Met Thr Ala Ser Phe Ser Arg Leu Glu Leu Val Leu Ala Val Asn ¹⁶⁰
 145 150 155
 Tyr Gly Gly Lys Asp Glu Leu Val Arg Ala Phe Lys Lys Leu His Val

175
 Asp Ile Leu Asn Lys Lys Ile Ser Ser Asp Asp Leu Ser Glu Ser Leu
 180 185 190
 Ile Ser Ser Tyr Leu Asp Thr Ser Gly Leu Thr Asp Pro Asp Leu Leu
 195 200 205
 Ile Arg Thr Gly Gly Glu Met Arg Val Ser Asn Phe Leu Leu Trp Gln
 210 215 220
 Ile Ala Tyr Thr Glu Leu Tyr Ile Thr Asp Thr Leu Trp Pro Asp Phe
 225 230 235 240
 Thr Pro Gln Asp Leu Phe Glu Ala Ile Asn Val Tyr Gln Gln Arg Ser
 245 250 255
 Arg Arg Gly Gly Lys
 260

<210>606

<211>308

<212>PRT

<213>Chlamydia pneumoniae

<400>606

Val Leu Asn Ser Asn Lys Phe Lys Ser Lys Thr Gly Ala Tyr Gly Asp
 1 5 10 15
 Leu Phe Gln Arg Val Val Val His Ser Leu Val Leu Thr Phe Leu Val
 20 25 30
 Leu Leu Leu Tyr Ser Ser Leu Phe Pro Leu Thr Ser Phe Ala Leu Gly
 35 40 45
 Phe Ile Thr Ala Thr Cys Gly Ala Val Gly Thr Tyr Glu Tyr Ser Ser
 50 55 60
 Met Ala Lys Ala Lys Met His Tyr Pro Leu Ser Thr Phe Ser Ala Ile
 65 70 75 80
 Gly Ser Phe Leu Phe Leu Ala Leu Ser Phe Leu Ser Ile Arg Trp Gly
 85 90 95
 His Ser Leu Pro Gly Phe Phe Asp Ala Leu Pro Trp Thr Leu Leu Ile
 100 105 110
 Val Trp Val Val Trp Ser Ile Phe Arg Val Arg Lys Ser Thr Ile Gly
 115 120 125
 Ala Leu Gln Leu Ser Gly Val Thr Leu Phe Ser Ile Leu Tyr Val Gly
 130 135 140
 Ile Pro Ile Arg Leu Phe Leu His Val Leu Tyr Ser Phe Ile His Thr
 145 150 155 160
 Gln Glu Pro Tyr Leu Gly Ile Trp Trp Ala Ser Phe Leu Ile Ala Thr
 165 170 175
 Thr Lys Gly Ala Asp Ile Phe Gly Tyr Phe Phe Gly Lys Ala Phe Gly
 180 185 190
 Asn Lys Lys Ile Ala Pro Gln Ile Ser Pro Asn Lys Thr Val Val Gly
 195 200 205
 Phe Val Ala Gly Cys Leu Gly Ala Thr Leu Ile Ser Phe Ile Phe Phe
 210 215 220
 Leu Gln Ile Pro Thr Arg Phe Ala Ser Tyr Phe Pro Met Pro Ala Ile
 225 230 235 240
 Leu Ile Pro Leu Gly Leu Ala Leu Gly Ile Thr Gly Phe Phe Gly Asp
 245 250 255
 Ile Ile Glu Ser Ile Phe Lys Arg Asp Ala His Leu Lys Asn Ser Asn
 260 265 270
 Lys Leu Lys Ala Val Gly Gly Met Leu Asp Thr Leu Asp Ser Leu Leu
 275 280 285
 Leu Ser Thr Pro Ile Ala Tyr Leu Phe Leu Leu Ile Thr Gln Ser Lys
 290 295 300
 Glu Phe Ile Gly
 305

<210>607

<211>220

<212>PRT

<213>Chlamydia pneumoniae

<400>607

Arg Val Tyr Trp Met Ile Ile Thr Ile Asp Gly Pro Ser Gly Thr Gly

1 10 15
 Lys Ser Thr Thr Ala Lys Ala Leu Ala Asp His Leu His Phe Asn Tyr
 20 25 30
 Cys Asn Thr Gly Lys Met Tyr Arg Thr Leu Ala Tyr Ala Arg Leu Gln
 35 40 45
 Ser Pro Trp Ala Thr Leu Pro Leu Thr Lys Phe Leu Glu Glu Pro Pro
 50 55 60
 Phe Ser Phe Thr Phe Ala Thr Gly Gln Pro Leu Glu Ser Phe Phe Asn
 65 70 75 80
 Gly His Leu Leu Thr Ser Glu Leu Thr Thr Gln Glu Val Ala Asn Ala
 85 90 95
 Ala Ser Glu Leu Ser Gln Leu Pro Glu Val Arg Ala Phe Met Gln Asp
 100 105 110
 Leu Gln Arg Arg Tyr Ala Gln Leu Gly Asn Cys Val Phe Glu Gly Arg
 115 120 125
 Asp Met Gly Ser Lys Val Phe Pro Asn Ala Asp Leu Lys Ile Phe Leu
 130 135 140
 Thr Ser Ser Pro Glu Val Arg Ala Gln Arg Arg Leu Lys Asp Leu Pro
 145 150 155 160
 Glu Gly Thr Leu Ser Pro Glu Gln Leu Gln Ala Glu Leu Val Lys Arg
 165 170 175
 Asp Ala Ala Asp Ala Gln Arg Ala His Asp Pro Leu Val Ile Pro Glu
 180 185 190
 Asn Gly Ile Val Ile Asp Ser Ser Asp Leu Thr Ile Arg Gln Val Leu
 195 200 205
 Glu Lys Ile Leu Ala Leu Leu Phe Arg Asn Glu Leu
 210 215 220

<210>608

<211>234

<212>PRT

<213>Chlamydia pneumoniae

<400>608

Leu Phe Gly Phe Asp Asn Lys Thr Ser Ser Gly Glu Asn Phe Ser Phe
 1 5 10 15
 Thr Ile Ser Lys Arg Ala Met Ile Phe Arg Ile Cys Lys Phe Phe Thr
 20 25 30
 Trp Val Ala Phe Ser Leu Phe Tyr Lys Leu Lys Val Tyr Gly Val Lys
 35 40 45
 Lys Asn Phe Ile Lys Gly Pro Ala Ile Ile Ala Val Asn His Asn Ser
 50 55 60
 Phe Leu Asp Pro Ile Ala Leu His Met Cys Val His Glu Cys Ile Tyr
 65 70 75 80
 His Leu Ala Arg Ala Ser Leu Phe Asn Ile Pro Trp Leu Trp Lys Gln
 85 90 95
 Trp Gly Cys Phe Pro Val Arg Gln Asp Glu Gly Asn Ser Ala Ala Phe
 100 105 110
 Lys Ile Ala Ser Arg Leu Phe Asn Lys Arg Lys Lys Leu Val Ile Tyr
 115 120 125
 Pro Glu Gly Ala Arg Ser Pro Asp Gly Gln Leu Gln Pro Gly Lys Val
 130 135 140
 Gly Ile Gly Met Met Ala Ala Lys Ser Arg Val Pro Ile Ile Pro Val
 145 150 155 160
 Tyr Ile Arg Gly Thr Phe Glu Ala Phe Asn Arg His Gln Lys Ile Pro
 165 170 175
 His Val Trp Lys Thr Ile Thr Cys Val Phe Gly Thr Pro Met Tyr Phe
 180 185 190
 Asp Asp Ile Ile Gln Asn Pro Glu Ile Lys Asn Lys Glu Thr Tyr Gln
 195 200 205
 Ile Ile Thr Asn Gln Thr Met Asn Lys Ile Ala Glu Leu Lys Ala Trp
 210 215 220
 Tyr Glu Ser Gly Cys Lys Gly Asp Val Pro
 225 230

<210>609

<211>580

<212>PRT
 <213>Chlamydia pneumoniae
 <400>509

Leu	Pro	Ser	Ser	Lys	His	Gly	Met	Asn	Arg	Gly	Ala	Lys	Glu	Thr	Ser
1				5					10					15	
Pro	Lys	Leu	Met	Ser	Thr	Leu	Leu	Ser	Ile	Leu	Ser	Val	Ile	Cys	Ser
			20					25					30		
Gln	Ala	Ile	Ala	Lys	Ala	Phe	Pro	Asn	Leu	Glu	Asp	Trp	Ala	Pro	Glu
	35						40				45				
Ile	Thr	Pro	Ser	Thr	Lys	Glu	His	Phe	Gly	His	Tyr	Gln	Cys	Asn	Asp
	50				55					60					
Ala	Met	Lys	Leu	Ala	Arg	Val	Leu	Lys	Lys	Ala	Pro	Arg	Ala	Ile	Ala
65					70					75				80	
Glu	Ala	Ile	Val	Ala	Glu	Leu	Pro	Gln	Glu	Pro	Phe	Ser	Leu	Ile	Glu
			85					90					95		
Ile	Ala	Gly	Ala	Gly	Phe	Ile	Asn	Phe	Thr	Phe	Ser	Pro	Val	Phe	Leu
	100						105						110		
Asn	Gln	Gln	Leu	Glu	His	Phe	Lys	Asp	Ala	Leu	Lys	Leu	Gly	Phe	Gln
	115						120					125			
Val	Ser	Gln	Pro	Lys	Asn	Ile	Ile	Ile	Asp	Phe	Ser	Ser	Pro	Asn	Ile
	130					135					140				
Ala	Lys	Asp	Met	His	Val	Gly	His	Leu	Arg	Ser	Thr	Ile	Ile	Gly	Asp
145					150					155				160	
Ser	Leu	Ala	Arg	Ile	Phe	Ser	Tyr	Val	Gly	His	Asp	Val	Leu	Arg	Leu
			165					170					175		
Asn	His	Ile	Gly	Asp	Trp	Gly	Thr	Ala	Phe	Gly	Met	Leu	Ile	Thr	Tyr
	180						185						190		
Leu	Gln	Glu	Asn	Pro	Cys	Asp	Tyr	Ser	Asp	Leu	Glu	Asp	Leu	Thr	Ser
	195						200				205				
Leu	Tyr	Lys	Lys	Ala	Tyr	Val	Cys	Phe	Thr	Asn	Asp	Glu	Glu	Phe	Lys
	210				215						220				
Lys	Arg	Ser	Gln	Gln	Asn	Val	Val	Ala	Leu	Gln	Ala	Lys	Asp	Pro	Gln
225				230						235				240	
Ala	Ile	Ala	Ile	Trp	Glu	Lys	Ile	Cys	Glu	Thr	Ser	Glu	Lys	Ala	Phe
			245					250					255		
Gln	Lys	Ile	Tyr	Asp	Ile	Leu	Asp	Ile	Val	Val	Glu	Lys	Arg	Gly	Glu
		260					265						270		
Ser	Phe	Tyr	Asn	Pro	Phe	Leu	Pro	Glu	Ile	Ile	Glu	Asp	Leu	Glu	Lys
	275						280					285			
Lys	Gly	Leu	Leu	Thr	Val	Ser	Asn	Asp	Ala	Lys	Cys	Val	Phe	His	Glu
	290				295					300					
Ala	Phe	Ser	Ile	Pro	Phe	Met	Val	Gln	Lys	Ser	Asp	Gly	Gly	Tyr	Asn
305					310					315				320	
Tyr	Ala	Thr	Thr	Asp	Leu	Ala	Ala	Met	Arg	Tyr	Arg	Ile	Glu	Glu	Asp
			325					330					335		
His	Ala	Asp	Lys	Ile	Ile	Ile	Val	Thr	Asp	Leu	Gly	Gln	Ser	Leu	His
	340							345					350		
Phe	Gln	Leu	Leu	Glu	Ala	Thr	Ala	Ile	Ala	Ala	Gly	Tyr	Leu	Gln	Pro
	355				360						365				
Gly	Ile	Phe	Ser	His	Val	Gly	Phe	Gly	Leu	Val	Leu	Asp	Pro	Gln	Gly
	370				375					380					
Lys	Lys	Leu	Lys	Thr	Arg	Ser	Gly	Glu	Asn	Val	Lys	Leu	Arg	Glu	Leu
385				390					395					400	
Leu	Asp	Thr	Ala	Ile	Glu	Lys	Ala	Glu	Glu	Ala	Leu	Arg	Glu	His	Arg
			405					410					415		
Pro	Glu	Leu	Thr	Asp	Glu	Ala	Ile	Gln	Glu	Arg	Ala	Pro	Val	Ile	Gly
			420					425					430		
Ile	Asn	Ala	Ile	Lys	Tyr	Ser	Asp	Leu	Ser	Ser	His	Arg	Thr	Ser	Asp
	435					440						445			
Tyr	Val	Phe	Ser	Phe	Glu	Lys	Met	Leu	Arg	Phe	Glu	Gly	Asn	Thr	Ala
	450				455					460					
Met	Phe	Leu	Leu	Tyr	Ala	Tyr	Val	Arg	Ile	Gln	Gly	Ile	Lys	Arg	Arg
465				470						475				480	
Leu	Gly	Ile	Ser	Gln	Leu	Ser	Leu	Glu	Gly	Pro	Pro	Glu	Ile	Gln	Glu

480 490 495
 Pro Ala Glu Glu Leu Leu Ala Leu Thr Leu Leu Arg Phe Pro Glu Ala
 500 505 510
 Leu Glu Ser Thr Ile Lys Glu Leu Cys Pro His Phe Leu Thr Asp Tyr
 515 520 525
 Leu Tyr Asn Leu Thr His Lys Phe Asn Gly Phe Phe Arg Asp Ser His
 530 535 540
 Ile Gln Asp Ser Pro Tyr Ala Lys Ser Arg Leu Phe Leu Cys Ala Leu
 545 550 555 560
 Ala Glu Gln Val Leu Ala Thr Gly Met His Leu Leu Gly Leu Lys Thr
 565 570 575
 Leu Glu Arg Leu
 580
 <210>610
 <211>458
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>610
 Met Gln Ile Ala Gln Val Phe Gly Cys Gly Arg Leu Asn Gly Glu Val
 1 5 10 15
 Lys Val Ser Gly Ala Lys Asn Ala Ala Thr Lys Leu Leu Val Ala Ser
 20 25 30
 Leu Leu Ser Asp Gln Lys Cys Thr Leu Arg Asn Val Pro Asp Ile Gly
 35 40 45
 Asp Val Ser Leu Thr Val Glu Leu Cys Lys Ser Leu Gly Ala His Val
 50 55 60
 Ser Trp Asp Lys Glu Thr Glu Val Leu Glu Ile Tyr Thr Pro Glu Ile
 65 70 75 80
 Gln Cys Thr Arg Val Pro Pro Thr Phe Ser Asn Val Asn Arg Ile Pro
 85 90 95
 Ile Leu Leu Leu Gly Ala Leu Leu Gly Arg Cys Pro Glu Gly Val Tyr
 100 105 110
 Val Pro Thr Val Gly Gly Asp Ala Ile Gly Glu Arg Thr Leu Asn Phe
 115 120 125
 His Phe Glu Gly Leu Lys Gln Leu Gly Val Gln Ile Ser Ser Asp Ser
 130 135 140
 Ser Gly Tyr Tyr Ala Lys Ala Pro Arg Gly Leu Lys Gly Asn Tyr Ile
 145 150 155 160
 His Leu Pro Tyr Pro Ser Val Gly Ala Thr Glu Asn Leu Ile Leu Ala
 165 170 175
 Ala Ile His Ala Lys Gly Arg Thr Val Ile Lys Asn Val Ala Leu Glu
 180 185 190
 Ala Glu Ile Leu Asp Leu Val Leu Phe Leu Gln Lys Ala Gly Ala Asp
 195 200 205
 Ile Thr Thr Asp Asn Asp Arg Thr Ile Asp Ile Phe Gly Thr Gly Gly
 210 215 220
 Leu Gly Ser Val Asp His Thr Ile Leu Pro Asp Lys Ile Glu Ala Ala
 225 230 235 240
 Ser Phe Gly Met Ala Ala Val Val Ser Gly Gly Arg Val Phe Val Arg
 245 250 255
 Asn Ala Lys Gln Glu Leu Leu Ile Pro Phe Leu Lys Met Leu Arg Ser
 260 265 270
 Ile Gly Gly Gly Phe Leu Val Ser Glu Ser Gly Ile Glu Phe Phe Gln
 275 280 285
 Glu Arg Pro Leu Val Gly Gly Val Val Leu Glu Thr Asp Val His Pro
 290 295 300
 Gly Phe Leu Thr Asp Trp Gln Gln Pro Phe Ala Val Leu Leu Ser Gln
 305 310 315 320
 Ala Gln Gly Ser Ser Val Ile His Glu Thr Val His Glu Asn Arg Leu
 325 330 335
 Gly Tyr Leu His Gly Leu Gln His Met Gly Ala Glu Cys Gln Leu Phe
 340 345 350
 His Gln Cys Leu Ser Thr Lys Ala Cys Arg Tyr Ala Ile Gly Asn Phe
 355 360 365

Pro His Ser Ala Val Ile His Gly Ala Thr Pro Leu 1 Ala Ser His
 370 375 380
 Leu Val Ile Pro Asp Leu Arg Ala Gly Phe Ala Tyr Val Met Ala Ala
 385 390 395 400
 Leu Ile Ala Glu Gly Gly Gly Ser Ile Ile Glu Asn Thr His Leu Leu
 405 410 415
 Asp Arg Gly Tyr Thr Asn Trp Val Gly Lys Leu Arg Ser Leu Gly Ala
 420 425 430
 Lys Ile Gln Ile Phe Asp Met Glu Gln Glu Glu Leu Thr Thr Ser Pro
 435 440 445
 Lys Ser Leu Ala Leu Arg Asp Ala Ser Leu
 450 455

<210>611

<211>96

<212>PRT

<213>Chlamydia pneumoniae

<400>611

His Asn Asp Met Pro Trp Tyr Leu Ser Thr Asp Glu Lys Ala Asp Thr
 1 5 10 15
 Gln Leu Pro Cys Ala Glu Asp His Glu Gly Ser Arg Gly Asp Phe His
 20 25 30
 Gly Gln Ser His Gly Leu Leu Lys Ile Pro Glu Pro Val Ile Val Glu
 35 40 45
 Leu Arg Arg Val Val Ala Ser Pro Ser Gly Thr Leu Asp Glu His Arg
 50 55 60
 Phe Pro Arg Gln His Leu Pro Pro Arg Gly Val Leu Glu Lys Ile Leu
 65 70 75 80
 Phe Pro Thr Arg Arg Pro Lys Ile Leu Arg Leu Trp Ser Ala Thr Ser
 85 90 95

<210>612

<211>183

<212>PRT

<213>Chlamydia pneumoniae

<400>612

Ile Met Ala Ala Pro Ile Asn Gln Pro Ser Thr Thr Thr Gln Ile Thr
 1 5 10 15
 Gln Thr Gly Gln Thr Thr Thr Thr Thr Thr Val Gly Ser Leu Gly Glu
 20 25 30
 His Ser Val Thr Thr Thr Gly Ser Gly Ala Ala Ala Gln Thr Ser Gln
 35 40 45
 Thr Val Thr Leu Ile Ala Asp His Glu Met Gln Asp Ile Ala Ser Gln
 50 55 60
 Asp Gly Ser Ala Val Ser Phe Ser Ala Glu His Ser Phe Ser Thr Leu
 65 70 75 80
 Pro Pro Glu Thr Gly Ser Val Gly Ala Thr Ala Gln Ser Ala Gln Ser
 85 90 95
 Ala Gly Leu Phe Ser Leu Ser Gly Arg Thr Gln Arg Arg Asp Ser Glu
 100 105 110
 Ile Ser Ser Ser Ser Asp Gly Ser Ser Ile Ser Arg Thr Ser Ser Asn
 115 120 125
 Ala Ser Ser Gly Glu Thr Ser Arg Ala Glu Ser Ser Pro Asp Leu Gly
 130 135 140
 Asp Leu Asp Ser Leu Ser Gly Ser Glu Arg Ala Glu Gly Ala Glu Asp
 145 150 155 160
 Leu Lys Asp Leu Glu Ala Tyr Leu Lys Val Arg Phe His Ile Met Ile
 165 170 175
 Leu Pro Ile Lys Arg Leu Phe
 180

<210>613

<211>550

<212>PRT

<213>Chlamydia pneumoniae

<400>613

Met Lys Pro Arg Ser Ser Phe Ile Phe Val Arg Asn Gly Asp Trp Ser

1									10					15	
Thr	Ala	Glu	Ser	Ile	Lys	Val	Ser	Asn	Ala	Lys	Thr	Lys	Glu	Asn	Ile
			20						25					30	
Thr	Lys	Pro	Ala	Asp	Leu	Glu	Met	Cys	Ile	Ala	Lys	Phe	Cys	Val	Gly
		25					40					45			
Tyr	Glu	Thr	Ile	His	Ser	Asp	Trp	Thr	Gly	Arg	Val	Lys	Pro	Thr	Met
	50					55					60				
Glu	Glu	Arg	Ser	Gly	Ala	Thr	Gly	Asn	Tyr	Asn	His	Leu	Met	Leu	Ser
	65				70				75					80	
Met	Lys	Phe	Lys	Thr	Ala	Val	Val	Tyr	Gly	Pro	Trp	Asn	Ala	Lys	Glu
			85					90						95	
Ser	Ser	Ser	Gly	Tyr	Thr	Pro	Ser	Ala	Trp	Arg	Arg	Gly	Ala	Lys	Val
			100					105					110		
Glu	Thr	Gly	Pro	Ile	Trp	Asp	Asp	Val	Gly	Gly	Leu	Lys	Gly	Ile	Asn
	115						120					125			
Trp	Lys	Thr	Thr	Pro	Ala	Pro	Asp	Phe	Ser	Phe	Ile	Asn	Glu	Thr	Pro
	130					135					140				
Gly	Gly	Gly	Ala	His	Ser	Thr	Ser	His	Thr	Gly	Pro	Gly	Thr	Pro	Val
	145				150					155				160	
Gly	Ala	Thr	Val	Val	Pro	Asn	Val	Asn	Val	Asn	Leu	Gly	Gly	Ile	Lys
			165					170						175	
Val	Asp	Leu	Gly	Gly	Ile	Asn	Leu	Gly	Gly	Ile	Thr	Thr	Asn	Val	Thr
		180					185						190		
Thr	Glu	Glu	Gly	Gly	Gly	Thr	Asn	Ile	Thr	Ser	Thr	Lys	Ser	Thr	Ser
	195						200					205			
Thr	Asp	Asp	Lys	Val	Ser	Ile	Thr	Ser	Thr	Gly	Ser	Gln	Ser	Thr	Ile
	210					215					220				
Glu	Glu	Asp	Thr	Ile	Gln	Phe	Asp	Asp	Pro	Gly	Gln	Gly	Glu	Asp	Asp
	225				230					235				240	
Asn	Ala	Ile	Pro	Gly	Thr	Asn	Thr	Pro	Pro	Pro	Pro	Gly	Pro	Pro	Pro
			245					250					255		
Asn	Leu	Ser	Ser	Ser	Arg	Leu	Leu	Thr	Ile	Ser	Asn	Ala	Ser	Leu	Asn
		260					265						270		
Gln	Val	Leu	Gln	Asn	Val	Arg	Gln	His	Leu	Asn	Thr	Ala	Tyr	Asp	Ser
	275						280					285			
Asn	Gly	Asn	Ser	Val	Ser	Asp	Leu	Asn	Gln	Asp	Leu	Gly	Gln	Val	Val
	290					295				300					
Lys	Asn	Ser	Glu	Asn	Gly	Val	Asn	Phe	Pro	Thr	Val	Ile	Leu	Pro	Lys
	305				310				315					320	
Thr	Thr	Gly	Asp	Thr	Asp	Pro	Ser	Gly	Gln	Ala	Thr	Gly	Gly	Val	Thr
			325					330						335	
Glu	Gly	Gly	Gly	His	Ile	Arg	Asn	Ile	Ile	Gln	Arg	Asn	Thr	Gln	Ser
		340					345						350		
Thr	Gly	Gln	Ser	Glu	Gly	Ala	Thr	Pro	Thr	Pro	Gln	Pro	Thr	Ile	Ala
	355					360					365				
Lys	Ile	Val	Thr	Ser	Leu	Arg	Lys	Ala	Asn	Val	Ser	Ser	Ser	Ser	Val
	370					375				380					
Leu	Pro	Gln	Pro	Gln	Val	Ala	Thr	Thr	Ile	Thr	Pro	Gln	Ala	Arg	Thr
	385				390				395					400	
Ala	Ser	Thr	Ser	Thr	Thr	Ser	Ile	Gly	Thr	Gly	Thr	Glu	Ser	Thr	Ser
			405					410					415		
Thr	Thr	Ser	Thr	Gly	Thr	Gly	Thr	Gly	Ser	Val	Ser	Thr	Gln	Ser	Thr
		420					425					430			
Gly	Val	Gly	Thr	Pro	Thr	Thr	Thr	Thr	Arg	Ser	Thr	Gly	Thr	Ser	Ala
	435					440					445				
Thr	Thr	Thr	Thr	Ser	Ser	Ala	Ser	Thr	Gln	Thr	Pro	Gln	Ala	Pro	Leu
	450					455				460					
Pro	Ser	Gly	Thr	Arg	His	Val	Ala	Thr	Ile	Ser	Leu	Val	Arg	Asn	Ala
	465				470				475					480	
Ala	Gly	Arg	Ser	Ile	Val	Leu	Gln	Gln	Gly	Arg	Ser	Gln	Ser	Phe	
			485					490					495		
Pro	Ile	Pro	Pro	Ser	Gly	Thr	Gly	Thr	Gln	Asn	Met	Gly	Ala	Gln	Leu
		500					505					510			
Trp	Ala	Ala	Ala	Ser	Gln	Val	Ala	Ser	Thr	Leu	Gly	Gln	Val	Val	Asn

515 520
 Gln Ala Ala Thr Ala Gly Ser Gln Pro Ser Ser Arg Arg Ser Ser Pro
 530 535 540
 Thr Ser Pro Arg Arg Lys
 545 550
 <210>614
 <211>96
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>614
 Asp Arg Pro Pro Cys Cys Asn Thr Ile Asp Leu Pro Ala Ala Leu Arg
 1 5 10 15
 Thr Lys Glu Ile Val Ala Thr Cys Leu Val Pro Glu Gly Arg Gly Ala
 20 25 30
 Trp Gly Val Cys Val Glu Ala Asp Val Val Val Val Ala Glu Val
 35 40 45
 Pro Val Asp Arg Val Val Val Val Gly Val Pro Thr Pro Val Leu Cys
 50 55 60
 Val Glu Thr Leu Pro Val Pro Val Pro Val Leu Val Val Asp Val Leu
 65 70 75 80
 Ser Val Pro Val Pro Met Leu Val Val Asp Val Leu Ala Val Leu Ala
 85 90 95
 <210>615
 <211>241
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>615
 Val Glu Asp Met Ala Gly His Ser Lys Trp Ala Asn Thr Lys His Arg
 1 5 10 15
 Lys Glu Arg Ala Asp His Lys Lys Gly Lys Ile Phe Ser Arg Ile Ile
 20 25 30
 Lys Glu Leu Ile Ser Ala Val Lys Leu Gly Gly Ala Asp Pro Lys Ser
 35 40 45
 Asn Ala Arg Leu Arg Met Val Ile Gln Lys Ala Lys Glu Asn Asn Ile
 50 55 60
 Pro Asn Glu Asn Ile Glu Arg Asn Leu Lys Lys Ala Thr Ser Ala Glu
 65 70 75 80
 Gln Lys Asn Phe Glu Glu Val Thr Tyr Glu Leu Tyr Gly His Gly Gly
 85 90 95
 Val Gly Ile Ile Val Glu Ala Met Thr Asp Asn Lys Asn Arg Thr Ala
 100 105 110
 Ser Asp Met Arg Ile Ala Ile Asn Lys Arg Gly Gly Ser Leu Val Glu
 115 120 125
 Pro Gly Ser Val Leu Tyr Asn Phe Ala Arg Lys Gly Ala Cys Thr Val
 130 135 140
 Ala Lys Ser Ser Ile Asp Glu Glu Val Ile Phe Ser Tyr Ala Ile Glu
 145 150 155 160
 Ala Gly Ala Glu Asp Leu Asp Thr Glu Asp Glu Glu Asn Phe Leu Val
 165 170 175
 Ile Cys Ala Pro Ser Glu Leu Ala Ser Val Lys Glu Lys Leu Ile Ser
 180 185 190
 Gln Gly Ala Thr Cys Ser Glu Asp Arg Leu Ile Tyr Leu Pro Leu Arg
 195 200 205
 Leu Val Asp Cys Asp Glu Lys Asp Gly Glu Ala Asn Leu Ala Leu Ile
 210 215 220
 Asp Trp Leu Glu Gln Ile Glu Asp Val Asp Asp Val Tyr His Asn Met
 225 230 235 240
 Ser

<210>616
 <211>195
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>616

Ser Ala Glu Arg Gly Phe Arg His Pro Ile Val Met Val Thr Val
 1 5 10 15
 Leu His Asn Phe Gln Arg Tyr Leu Ser Lys Tyr Leu Tyr Arg Val Phe
 20 25 30
 Arg Phe Pro Cys Arg Gln Lys Thr Phe Leu Ser Ser His Arg Val Leu
 35 40 45
 Ala Arg Pro Ser Phe Pro Val Asp Tyr Cys Pro Gly Lys Ile Tyr Asp
 50 55 60
 Leu Gln Glu Ile Tyr Glu Glu Leu Asn Ala Gln Leu Phe Gln Gly Ala
 65 70 75 80
 Leu Arg Leu Gln Ile Gly Trp Phe Gly Arg Lys Ala Thr Arg Lys Gly
 85 90 95
 Lys Ser Val Val Leu Gly Leu Phe His Glu Asn Glu Gln Leu Ile Arg
 100 105 110
 Ile His Arg Ser Leu Asp Arg Gln Glu Ile Pro Arg Phe Phe Met Glu
 115 120 125
 Tyr Leu Val Tyr His Glu Met Val His Ser Val Val Pro Arg Glu Tyr
 130 135 140
 Ser Leu Ser Gly Arg Ser Ile Phe His Gly Lys Lys Phe Lys Glu Tyr
 145 150 155 160
 Glu Gln Arg Phe Pro Leu Tyr Asp Arg Ala Val Ala Trp Glu Lys Ala
 165 170 175
 Asn Ala Tyr Leu Leu Arg Gly Tyr Lys Lys Arg Val Gly Gly Gly Tyr
 180 185 190
 Gly Arg Ala
 195

<210>617

<211>188

<212>PRT

<213>Chlamydia pneumoniae

<400>617

Ser Ile Phe Gly Arg Val Trp Xaa Xaa Phe Met Thr Ala Glu Lys Gln
 1 5 10 15
 Asn Thr Gly Ile Leu Gly Leu Glu Ile Arg Tyr Thr Leu Pro Ser Asp
 20 25 30
 Ala Thr Tyr Met Leu Lys Trp Leu Asn Asp Pro Lys Ile Leu Arg Gly
 35 40 45
 Phe Pro Ile Gln Thr Glu Ala Glu Ile Arg Glu Thr Val Asn Phe Trp
 50 55 60
 Val Gly Phe Tyr Arg Tyr His Ser Ser Leu Thr Ala Val Tyr Asn Gly
 65 70 75 80
 Asn Val Ala Gly Val Ala Thr Leu Val Leu Asn Pro Tyr Val Lys Val
 85 90 95
 Ser His His Ala Leu Ile Ser Ile Ile Val Gly Glu Glu Phe Arg Asn
 100 105 110
 Lys Gly Ile Gly Thr Ala Leu Leu Asn Asn Leu Ile His Leu Ala Lys
 115 120 125
 Thr Arg Phe Lys Leu Glu Val Leu Tyr Leu Glu Val Tyr Glu Gly Asn
 130 135 140
 Pro Ala Leu His Leu Tyr Gln Arg Phe Gly Phe Val Glu Val Gly Arg
 145 150 155 160
 Gln Asn Arg Phe Tyr Lys Asp Glu Ile Gly Tyr Leu Ala Lys Thr Thr
 165 170 175
 Met Glu Lys Gly Ser Ile Glu Arg Arg Lys Arg Phe
 180 185

<210>618

<211>139

<212>PRT

<213>Chlamydia pneumoniae

<400>618

Asp Glu Ile Arg Pro Asn Asp Leu Arg Ile Asp Thr Phe Arg Ser Ser
 1 5 10 15
 Gly Ala Gly Gly Gln His Val Asn Val Thr Glu Ser Ala Val Arg Ile
 20 25 30

Thr His Leu Pro Ser Gly Val Val Val Ser Cys Gln Glu Arg Ser
 35 40 45
 Gln Ile Gln Asn Arg Glu Ser Cys Met Lys Met Leu Glu Ala Lys Leu
 50 55 60
 Tyr Gln Gln Val Leu Gln Glu Arg Leu Glu Lys Gln Ser Leu Asp Arg
 65 70 75 80
 Lys Asp Lys Lys Glu Ile Ala Trp Gly Ser Gln Ile Arg Asn Tyr Val
 85 90 95
 Phe Gln Pro Tyr Thr Leu Val Lys Asp Val Arg Thr Gly His Glu Thr
 100 105 110
 Gly Asn Val Gln Ala Met Leu Asp Gly Glu Leu Leu Asp Glu Phe Ile
 115 120 125
 Lys Ala Tyr Leu Ala Glu Phe Gly Xas Val Ser
 130 135

<210>619

<211>211

<212>PRT

<213>Chlamydia pneumoniae

<400>619

Leu Arg Gly Leu Phe Asp Leu Asp Lys Lys Gln Lys Glu Leu Gln Val
 1 5 10 15
 Leu Glu Glu Glu Ser Ser Glu Glu Asn Phe Trp Gln Asp Ser Val His
 20 25 30
 Ala Gly Lys Ile Ser Glu Gln Ile Val Ser Leu Arg Arg Gln Ile Gln
 35 40 45
 Glu Tyr Gln Glu Leu Lys Ser Lys Ile Asp Ala Ile Glu Phe Phe Leu
 50 55 60
 Glu Asp Ala Asp Ala Leu Glu Asp Pro Ala Ile Cys Glu Asp Leu Glu
 65 70 75 80
 Lys Glu Phe Leu Phe Cys Glu Lys Lys Leu Ala Val Trp Glu Thr Gln
 85 90 95
 Arg Leu Leu Ser Gly Glu Ala Asp Lys Asn Ser Cys Phe Leu Thr Ile
 100 105 110
 Asn Ala Gly Ala Gly Gly Thr Glu Ser Cys Asp Trp Val Glu Met Leu
 115 120 125
 Phe Arg Met Tyr Ser Arg Trp Ala Thr Lys His Gln Trp Ala Leu Glu
 130 135 140
 Val Val Asp Arg Leu Asp Gly Glu Val Val Gly Ile Lys His Val Thr
 145 150 155 160
 Val Lys Phe Ser Gly Met Tyr Ala Tyr Gly Tyr Ala Lys Ala Glu Arg
 165 170 175
 Gly Val His Arg Leu Val Arg Ile Ser Pro Phe Asp Ser Asn Gly Lys
 180 185 190
 Arg His Thr Ser Phe Ala Ser Val Asp Val Phe Pro Glu Ile Asp Xaa
 195 200 205
 Arg Leu Arg
 210

<210>620

<211>90

<212>PRT

<213>Chlamydia pneumoniae

<400>620

Glu Ser Pro Met Ser Gln Lys Asn Lys Asn Ser Ala Phe Met His Pro
 1 5 10 15
 Val Asn Ile Ser Thr Asp Leu Ala Val Ile Val Gly Lys Gly Pro Met
 20 25 30
 Pro Arg Thr Glu Ile Val Lys Lys Val Trp Glu Tyr Ile Lys Lys His
 35 40 45
 Asn Cys Gln Asp Gln Lys Asn Lys Arg Asn Ile Leu Pro Asp Ala Asn
 50 55 60
 Leu Ala Lys Val Phe Gly Ser Ser Asp Pro Ile Asp Met Phe Gln Met
 65 70 75 80
 Thr Lys Ala Leu Ser Lys His Ile Val Lys
 85 90

<210>621

<211>212

<212>PRT

<213>Chlamydia pneumoniae

<400>621

Ser Ala Thr Ser His Val Pro Met Ile Lys Ser Ser Leu Ile Leu Leu
 1 5 10 15
 Ser Gly Gly Gln Gly Thr Arg Phe Gly Ser Lys Ile Pro Lys Gln Tyr
 20 25 30
 Leu Pro Leu Asn Gly Thr Pro Leu Val Leu His Ser Leu Lys Ile Leu
 35 40 45
 Ser Ser Leu Pro Gln Ile Ala Glu Val Ile Val Val Cys Asp Pro Ser
 50 55 60
 Tyr Gln Glu Thr Phe Gln Glu Tyr Pro Val Ser Phe Ala Ile Pro Gly
 65 70 75 80
 Glu Arg Arg Gln Asp Ser Val Phe Ser Gly Leu Gln Gln Val Ser Tyr
 85 90 95
 Pro Trp Val Ile Ile His Asp Gly Ala Arg Pro Phe Ile Tyr Pro Asp
 100 105 110
 Glu Ile His Asp Leu Leu Glu Thr Ala Glu Lys Ile Gly Ala Thr Ala
 115 120 125
 Leu Ala Ser Pro Ile Pro Tyr Thr Ile Lys Gln Arg Asn Pro Val Arg
 130 135 140
 Thr Leu Asp Arg Asp Asn Leu Ala Ile Ile His Thr Pro Gln Cys Ile
 145 150 155 160
 Lys Thr Glu Ile Leu Arg Glu Gly Leu Ala Leu Ala Lys Glu Lys Gln
 165 170 175
 Leu Thr Leu Val Asp Asp Ile Glu Ala Ala Glu Ile Ile Gly Lys Pro
 180 185 190
 Ser Gln Leu Val Phe Asn Lys His Pro Gln Ile Lys Ile Ser Tyr Pro
 195 200 205
 Glu Asp Leu Thr Ile Ala Gln Ala Leu Leu
 210 215

<210>622

<211>267

<212>PRT

<213>Chlamydia pneumoniae

<400>622

Met Thr Lys Val Ala Leu Leu Ile Ala Tyr Gln Gly Thr Ala Tyr Ser
 1 5 10 15
 Gly Trp Gln Gln Gln Pro Asn Asp Leu Ser Ile Gln Glu Val Ile Glu
 20 25 30
 Ser Ser Leu Lys Lys Ile Thr Lys Thr Arg Thr Pro Leu Ile Ala Ser
 35 40 45
 Gly Arg Thr Asp Ala Gly Val His Ala Tyr Gly Gln Val Ala His Phe
 50 55 60
 Arg Ala Pro Asp His Pro Leu Phe Ala Asn Ala Asn Leu Thr Lys Lys
 65 70 75 80
 Ala Leu Asn Ala Ile Leu Pro Lys Asp Ile Val Ile Arg Asp Val Ala
 85 90 95
 Leu Phe Asp Asp Asn Phe His Ala Arg Tyr Leu Thr Ile Ala Lys Glu
 100 105 110
 Tyr Arg Tyr Ser Leu Ser Arg Leu Ala Lys Pro Leu Pro Trp Gln Arg
 115 120 125
 His Phe Cys Tyr Thr Pro Arg His Pro Phe Ser Thr Glu Leu Met Gln
 130 135 140
 Glu Gly Ala Asn Leu Leu Ile Gly Thr His Asp Phe Ala Ser Phe Ala
 145 150 155 160
 Asn His Gly Arg Asp Tyr Asn Ser Thr Val Arg Thr Ile Tyr Thr Leu
 165 170 175
 Asp Ile Val Asp Lys Gly Asp Ser Leu Ser Ile Ile Cys Arg Gly Asn
 180 185 190
 Gly Phe Leu Tyr Lys Met Val Arg Asn Leu Val Gly Ala Leu Leu Asp
 195 200 205

Val Gly Lys Gly His Tyr Pro Pro Glu His Leu Leu Ile Leu Glu
 210 215 220
 Gln Lys Asn Arg Arg Glu Gly Pro Ser Ala Ala Pro Ala Tyr Gly Leu
 225 230 235 240
 Ser Leu His His Val Cys Tyr Ser Ser Pro Tyr Asn Asn Phe Cys Cys
 245 250 255
 Glu Gln Cys Ser Val Ser Thr Ser Asn Glu Gly
 260 265

<210>623

<211>263

<212>PRT

<213>Chlamydia pneumoniae

<400>633

Glu Gly Leu Arg Trp Arg Ser Val Lys Ser Phe Leu Arg Gln Cys Trp
 1 5 10 15
 Ile Tyr Ser Met Leu Val Ser Asp Glu Phe Gln Leu Cys Leu Arg Ser
 20 25 30
 Gly Met Tyr Leu Glu Asp Tyr Asp Val Phe Phe Phe Asp Leu Asp Gly
 35 40 45
 Leu Leu Val Asp Thr Glu Pro Cys Phe Tyr Arg Ala Phe Leu Gln Ala
 50 55 60
 Cys Ala Glu Phe Ser Leu Glu Val His Trp Asp Phe Ser Thr Tyr Tyr
 65 70 75 80
 Ser His Thr Thr Leu Gly Thr Glu Ile Phe Ser Lys Lys Phe Ile Glu
 85 90 95
 Gln Tyr Pro Gln Ala Gln Glu Tyr Met Ala Glu Ile Phe Ala Lys Arg
 100 105 110
 Leu Gln Ile Tyr Tyr Lys Ser Leu Glu His Ala Gly Pro Ala Leu Met
 115 120 125
 Pro Gly Val Glu Ala Phe Ile Glu Leu Val Leu Ser Leu Asn Lys Thr
 130 135 140
 Phe Gly Val Val Thr Asn Ser Pro Arg Asp Ala Thr His Thr Leu Arg
 145 150 155 160
 Thr Met Tyr Pro Ile Leu Asn Lys Phe Leu Phe Trp Val Thr Arg Glu
 165 170 175
 Asn Tyr Ala Arg Pro Lys Pro Tyr Gly Asp Ser Tyr Asp Tyr Ala Tyr
 180 185 190
 Arg Thr Phe Ala Arg Gln Gly Met Lys Val Ile Gly Phe Glu Asp Ser
 195 200 205
 Val Lys Gly Leu Arg Ala Leu Ser Lys Ile Pro Ala Thr Leu Val Cys
 210 215 220
 Ile Asn Ser Met Ala Glu Ile Thr Pro Glu Asp Tyr Pro Glu Leu Lys
 225 230 235 240
 Gly Lys Glu Phe Phe Ser Tyr Pro Ser Phe Asp Val Leu Thr Glu His
 245 250 255
 Cys Ser Gln Gln Lys Leu Leu
 260

<210>624

<211>291

<212>PRT

<213>Chlamydia pneumoniae

<400>624

Lys Asn Pro Asn Ala Leu Leu Lys Lys Ile Gln His Arg Leu Val Lys
 1 5 10 15
 Met His Asp Lys Asn Lys Val Leu Tyr Leu Gln Ala Asn His Leu Asn
 20 25 30
 Gln Lys Arg Lys Arg His Asn Pro Leu Asn Thr Tyr His Ser Ser Asn
 35 40 45
 Thr Thr Glu Thr Arg Arg Leu Pro Thr Tyr Tyr Lys Ser Asn Ile Val
 50 55 60
 Leu Lys Met Ile Leu Arg Ile Ser Thr Val Ser Leu Leu Thr Ser Cys
 65 70 75 80
 Ser Phe Ser Lys Asn Ser Arg Thr Cys Phe Val Thr Pro Glu Arg Ile
 85 90 95

Thr Ser Gln Lys Asn Cys Pro Val Leu Leu His Pro Lys Thr Thr
 100 105 110
 Ile Ser Pro Pro Leu Tyr Asp Trp Ile Ser Pro Asn Arg Glu Val Ile
 115 120 125
 Thr Ala Tyr Ser Phe Tyr Cys Arg Gly Gln Gly Asn Ser Ile Ile Thr
 130 135 140
 Pro Glu Gly Val Leu Tyr Asp Cys Asp Gly Leu His His Ser Ile Thr
 145 150 155 160
 Lys Glu Glu Phe Arg Tyr Ile His Pro Arg Leu Ile Glu Val Val Arg
 165 170 175
 Leu Leu Gln Gln Asp His Pro Lys Val Ser Ile Ile Glu Ala Phe Cys
 180 185 190
 Cys Pro Lys His Phe His Phe Leu Glu Ala Ser Gly Ile Ser Leu Ser
 195 200 205
 Gln Leu His Leu Gln Gly Thr Ala Ala Thr Phe Ala Leu Asp Pro Pro
 210 215 220
 Leu Pro Met Glu Lys Leu Leu Ala Thr Ile Lys Lys Leu Tyr Lys Lys
 225 230 235 240
 Asn Ser Asp Pro Ser Leu Ser Asn Phe Ile Val Thr Glu Ala Thr Leu
 245 250 255
 Thr Asn Pro Glu Leu Arg Leu Thr Gln Asp Leu Gly Ser His Thr
 260 265 270
 Glu Ile Thr Val Glu Ile Leu Asp Asn Leu Gln Asn Lys Glu Ala Leu
 275 280 285
 Ser Ser Ala
 290

<210>625

<211>123

<212>PRT

<213>Chlamydia pneumoniae

<400>625

Ile Val Leu Ser Phe Phe Leu Gly Lys Thr Lys Val Thr Pro Arg Phe
 1 5 10 15
 Leu Met Asn Glu Arg Thr Leu Leu Leu Leu Lys Lys Lys Lys Gly
 20 25 30
 Leu Phe Leu Ala Ile Leu Asp Leu Thr Gln Thr Glu Ser Ser Leu Thr
 35 40 45
 Thr Pro Glu Leu Glu Lys Val Leu Lys Gln Lys Lys Ile Phe Leu Ser
 50 55 60
 Cys Ile Asp Arg Val Asp Leu Gln Ile Lys Glu Phe Arg His Ala Phe
 65 70 75 80
 Ser Ser Glu Leu Pro Gln Asp Ile Gln Glu Glu Leu Glu Glu Ile Arg
 85 90 95
 Asp Val Ile Ile Arg Ile Leu Asp Thr Asp Lys Arg Asn Tyr Ala Gln
 100 105 110
 Lys Lys Lys Glu Phe Gly Ile Tyr Glu Arg Pro
 115 120

<210>626

<211>380

<212>PRT

<213>Chlamydia pneumoniae

<400>626

Ile Arg Ile Asn Ala Thr Met His Arg Lys Lys Arg Asn Leu Val Phe
 1 5 10 15
 Met Asn Val Pro Asp Ser Lys Asn Leu His Pro Pro Ala Tyr Glu Leu
 20 25 30
 Leu Glu Ile Lys Ala Arg Ile Thr Gln Ser Tyr Lys Glu Ala Ser Ala
 35 40 45
 Ile Leu Thr Ala Ile Pro Asp Gly Ile Leu Leu Leu Ser Glu Thr Gly
 50 55 60
 His Phe Leu Ile Cys Asn Ser Gln Ala Arg Glu Ile Leu Gly Ile Asp
 65 70 75 80
 Glu Asn Leu Glu Ile Leu Asn Arg Ser Phe Thr Asp Val Leu Pro Asp
 85 90 95

Thr	Cys	Leu	Gly	Ile	Ser	Ile	Gln	Glu	Ala	Leu	Glu	Ser	Leu	Lys	Val
		100						105						110	
Pro	Lys	Thr	Leu	Arg	Leu	Ser	Leu	Cys	Lys	Glu	Ser	Lys	Glu	Lys	Glu
		115					120					125			
Val	Glu	Leu	Phe	Ile	Arg	Lys	Asn	Glu	Ile	Ser	Gly	Tyr	Leu	Phe	Ile
		130				135					140				
Gln	Ile	Arg	Asp	Arg	Ser	Asp	Tyr	Lys	Gln	Leu	Glu	Asn	Ala	Ile	Glu
145					150					155				160	
Arg	Tyr	Lys	Asn	Ile	Ala	Glu	Leu	Gly	Lys	Met	Thr	Ala	Thr	Leu	Ala
			165						170					175	
His	Glu	Ile	Arg	Asn	Pro	Leu	Ser	Gly	Ile	Val	Gly	Phe	Ala	Ser	Ile
		180					185					190			
Leu	Lys	Lys	Glu	Ile	Ser	Ser	Pro	Arg	His	Gln	Arg	Met	Leu	Ser	Ser
		195					200					205			
Ile	Ile	Ser	Gly	Thr	Arg	Ser	Leu	Asn	Asn	Leu	Val	Ser	Ser	Met	Leu
		210				215					220				
Glu	Tyr	Thr	Lys	Ser	Gln	Pro	Leu	Asn	Leu	Lys	Ile	Ile	Asn	Leu	Gln
225					230					235				240	
Asp	Phe	Phe	Ser	Ser	Leu	Ile	Pro	Leu	Leu	Ser	Val	Ser	Phe	Pro	Asn
			245						250				255		
Cys	Lys	Phe	Val	Arg	Glu	Gly	Ala	Gln	Pro	Leu	Phe	Arg	Ser	Ile	Asp
		260					265					270			
Pro	Asp	Arg	Met	Asn	Ser	Val	Val	Trp	Asn	Leu	Val	Lys	Asn	Ala	Val
		275					280					285			
Glu	Thr	Gly	Asn	Ser	Pro	Ile	Thr	Leu	Thr	Leu	His	Thr	Ser	Gly	Asp
290					295						300				
Ile	Ser	Val	Thr	Asn	Pro	Gly	Thr	Ile	Pro	Ser	Glu	Ile	Met	Asp	Lys
305				310						315				320	
Leu	Phe	Thr	Pro	Phe	Phe	Thr	Thr	Lys	Arg	Glu	Gly	Asn	Gly	Leu	Gly
			325				330						335		
Leu	Ala	Glu	Ala	Gln	Lys	Ile	Ile	Arg	Leu	His	Gly	Gly	Asp	Ile	Gln
		340					345					350			
Leu	Lys	Thr	Ser	Asp	Ser	Ala	Val	Ser	Phe	Phe	Ile	Ile	Ile	Pro	Glu
		355					360				365				
Leu	Leu	Ala	Ala	Leu	Pro	Lys	Glu	Arg	Ala	Ala	Ser				
		370			375						380				

<210>627

<211>216

<212>PRT

<213>Chlamydia pneumoniae

<400>627

Ile	His	Ser	Phe	Leu	Ser	Thr	Arg	Thr	Val	Cys	Val	Arg	Gln	Lys	Lys
1				5					10					15	
Leu	Arg	Lys	Ile	Ser	Lys	Glu	Leu	Gln	Gln	Arg	Tyr	Ser	Arg	Leu	Gln
		20						25					30		
Glu	Glu	Lys	Gln	Val	Lys	Glu	Lys	Ile	Leu	Glu	Glu	Ser	Met	Asn	His
		35					40					45			
Phe	Ala	Asp	Leu	Phe	Glu	Lys	Ala	Gln	Lys	Glu	Asn	Met	Ala	Tyr	Lys
		50				55					60				
Lys	Lys	Leu	Ala	Asp	Leu	Glu	Gly	Ala	Ala	Ala	Pro	Thr	Glu	Ile	Gly
65				70					75				80		
Glu	Asp	Asp	Asp	Trp	Val	Leu	Thr	Asp	Ser	Ala	Ser	Leu	Ser	Gln	Lys
				85					90				95		
Lys	Ile	Arg	Glu	Leu	Val	Glu	Glu	Asn	Gln	Glu	Leu	Leu	Lys	Ala	Leu
			100					105					110		
Ala	Phe	Lys	Ser	Asn	Glu	Leu	Thr	Gln	Leu	Val	Ala	Asp	Ala	Val	Glu
		115					120					125			
Ala	Glu	Lys	Glu	Ile	Ser	Lys	Leu	Arg	Glu	His	Ile	Glu	Glu	Gln	Lys
		130				135					140				
Glu	Gly	Leu	Arg	Ala	Leu	Asp	Lys	Met	His	Ala	Gln	Ala	Ile	Lys	Asp
145				150					155					160	
Cys	Glu	Val	Ala	Gln	Arg	Lys	Cys	Cys	Asp	Leu	Glu	Ser	Leu	Leu	Ser
			165						170				175		
Pro	Val	Arg	Glu	Asp	Ala	Gly	Met	Arg	Phe	Glu	Leu	Glu	Val	Glu	Leu

180 185
Gln Arg Leu Gln Glu Glu Asn Ala Gln Leu Arg Ala Glu Val Glu Arg
195 200 205
Leu Glu Gln Glu Gln Phe Gln Gly
210 215

<210>628

<211>212

<212>PRT

<213>Chlamydia pneumoniae

<400>638

Gly Val Gly Ser Met Thr Ser Arg Arg Asp Ala Gly Arg Leu Tyr Asn
1 5 10 15
Val Phe Asn Gln Ser Gln Lys Asp Ile Gln Arg Ala His Asp Arg Glu
20 25 30
Ala Ser Gln Arg Ala Cys Glu Gly Thr Glu Met Asp Cys Ala Glu Arg
35 40 45
Gln Gln Leu Glu Lys Asp Leu Arg Arg Gln Leu Lys Ser Met Gln Glu
50 55 60
Trp Ile Glu Met Arg Gly Thr Ile His Gln Gln Glu Lys Ala Trp Arg
65 70 75 80
Lys Gln Asn Ala Lys Leu Glu Arg Leu Gln Glu Asp Leu Arg Leu Thr
85 90 95
Gly Ile Ala Phe Asp Glu Gln Ser Leu Phe Tyr Arg Glu Tyr Lys Glu
100 105 110
Lys Tyr Leu Ser Gln Lys Leu Asp Met Gln Lys Ile Leu Gln Glu Val
115 120 125
Asn Ala Glu Lys Ser Glu Lys Ala Cys Leu Glu Ser Leu Val His Asp
130 135 140
Tyr Glu Lys Gln Leu Glu Gln Lys Asp Ala Asn Leu Lys Lys Ala Ala
145 150 155 160
Ala Val Trp Glu Glu Glu Leu Gly Lys Gln Gln Glu Asp Tyr Glu
165 170 175
Gln Thr Gln Glu Ile Arg Arg Leu Asn Thr Phe Ile Leu Glu Tyr Gln
180 185 190
Asp Ser Leu Arg Glu Ala Glu Lys Val Glu Lys Asp Phe Gln Arg Ala
195 200 205

Thr Thr Lys Val

210

<210>629

<211>290

<212>PRT

<213>Chlamydia pneumoniae

<400>639

Ile Ser Leu Arg Arg Lys Ile Leu Arg Pro Asn Asn Phe Ser Ile Gly
1 5 10 15
Asp Cys Ser Ser Asn Met Ala Thr Pro Ala Gln Lys Ser Pro Thr Phe
20 25 30
Gln Asp Pro Ser Phe Val Arg Glu Leu Gly Ser Asn His Pro Val Phe
35 40 45
Ser Pro Leu Thr Leu Glu Glu Arg Gly Glu Met Ala Ile Ala Arg Val
50 55 60
Gln Gln Cys Gly Trp Asn His Thr Ile Val Lys Val Ser Leu Ile Ile
65 70 75 80
Leu Ala Leu Leu Thr Ile Leu Gly Gly Gly Leu Leu Val Gly Leu Leu
85 90 95
Pro Ala Val Pro Met Phe Ile Gly Thr Gly Leu Ile Ala Leu Gly Ala
100 105 110
Val Ile Phe Ala Leu Ala Leu Ile Leu Cys Leu Tyr Asp Ser Gln Gly
115 120 125
Leu Pro Glu Glu Leu Pro Pro Val Pro Glu Pro Gln Gln Ile Gln Ile
130 135 140
Glu Asp Leu Arg Asn Glu Thr Arg Glu Val Leu Glu Gly Thr Leu Leu
145 150 155 160
Glu Val Leu Leu Lys Asp Arg Asp Ala Lys Asp Pro Ala Val Pro Gln

Val	Val	Val	Asp	Cys	Glu	Lys	Arg	Leu	Gly	Met	Leu	Asp	Arg	Lys	Leu
			180					185					190		
Arg	Arg	Glu	Glu	Glu	Ile	Leu	Tyr	Arg	Ser	Thr	Ala	His	Leu	Lys	Asp
		195					200					205			
Glu	Glu	Arg	Tyr	Glu	Phe	Leu	Leu	Glu	Leu	Leu	Glu	Met	Arg	Ser	Leu
		210				215					220				
Val	Ala	Asp	Arg	Leu	Glu	Phe	Asn	Arg	Arg	Ser	Tyr	Glu	Arg	Phe	Val
225					230					235					240
Gln	Gly	Ile	Met	Thr	Val	Arg	Ser	Glu	Glu	Gly	Glu	Lys	Glu	Ile	Ser
			245					250						255	
Arg	Leu	Gln	Asp	Leu	Ile	Ser	Leu	Gln	Gln	Gln	Thr	Val	Gln	Asp	Leu
		260						265					270		
Arg	Ser	Arg	Ile	Asp	Asp	Glu	Gln	Lys	Arg	Cys	Trp	Thr	Ala	Leu	Gln
		275				280						285			

Arg Ile
290

<210>630

<211>337

<212>PRT

<213>Chlamydis pneumoniae

<400>630

Pro	Cys	His	Leu	Arg	His	Glu	Tyr	Pro	Asp	Gly	Ser	Gly	Leu	Asp	Leu
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Ile	Lys	Ile	Ile	Lys	Gln	Ser	Ser	Pro	His	Thr	Pro	Val	Leu	Val	Val
		30						25					30		
Thr	Ala	Tyr	Gly	Ser	Ile	Glu	Asn	Ala	Val	Glu	Ala	Met	His	Gln	Gly
		35				40						45			
Ala	Phe	Asn	Tyr	Leu	Thr	Lys	Pro	Phe	Ser	Ser	Glu	Ala	Leu	Phe	Ala
	50					55					60				
Phe	Ile	Ser	Lys	Ala	Glu	Glu	Leu	Lys	Asn	Leu	Val	His	Glu	Asn	Leu
	65				70					75				80	
Phe	Leu	His	Ser	Gln	Thr	Thr	Pro	Asp	Ser	His	Pro	Leu	Ile	Ala	Glu
		85						90						95	
Ser	Lys	Ala	Met	Lys	Asp	Leu	Leu	Ala	Ile	Ala	Lys	Lys	Ala	Ala	Ser
		100						105					110		
Ser	Ser	Ala	Asn	Ile	Phe	Ile	His	Gly	Glu	Ser	Gly	Cys	Gly	Lys	Glu
	115					120					125				
Val	Leu	Ser	Phe	Phe	Ile	His	His	Asn	Ser	Pro	Arg	Ala	Asn	His	Pro
	130					135					140				
Tyr	Ile	Lys	Val	Asn	Cys	Ala	Ala	Ile	Pro	Glu	Thr	Leu	Leu	Glu	Ser
	145				150					155				160	
Glu	Leu	Phe	Gly	His	Glu	Lys	Gly	Ala	Phe	Thr	Gly	Ala	Thr	Thr	Lys
			165					170					175		
Lys	Ala	Gly	Arg	Phe	Glu	Leu	Ala	His	Lys	Gly	Thr	Leu	Leu	Leu	Asp
		180						185					190		
Glu	Ile	Thr	Glu	Val	Pro	Val	Asn	Leu	Gln	Ala	Lys	Leu	Leu	Arg	Ala
	195					200						205			
Ile	Gln	Glu	Lys	Glu	Ile	Glu	His	Leu	Gly	Gly	Thr	Lys	Thr	Leu	Ser
	210					215					220				
Val	Asp	Val	Arg	Ile	Leu	Ala	Thr	Ser	Asn	Arg	Lys	Leu	Lys	Glu	Ala
225					230					235					240
Ile	Asp	Asp	Lys	Ser	Phe	Arg	Gln	Asp	Leu	Tyr	Tyr	Arg	Leu	Asn	Val
			245						250					255	
Ile	Pro	Leu	His	Leu	Pro	Pro	Leu	Arg	Asp	Arg	Gln	Asp	Asp	Ile	Leu
		260						265					270		
Pro	Leu	Ala	Asn	Tyr	Phe	Leu	Asn	Lys	Phe	Cys	Arg	Met	Asn	Asn	Thr
	275					280						285			
Pro	Leu	Lys	Thr	Leu	Ser	Pro	Lys	Ala	Gln	Glu	Leu	Leu	Leu	Asn	Tyr
	290					295					300				
Pro	Trp	Pro	Gly	Asn	Ile	Arg	Glu	Leu	Ser	Asn	Val	Leu	Glu	Arg	Val
305					310					315					320
Val	Ile	Leu	Glu	Asn	Thr	Ser	Leu	Leu	Thr	Glu	Asp	Met	Leu	Ala	Leu
				325					330					335	

Ala

<210>631

<211>223

<212>PRT

<213>Chlamydia pneumoniae

<400>631

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Ser Tyr Gly Glu Leu Phe Ile Leu Ser Thr Leu Leu Lys His His Val
 1           5           10           15
Thr Leu Gly Asp Lys Met Arg Pro His Arg Lys His Val Ser Ser Lys
           20           25           30
Ser Leu Ala Leu Lys Gln Ser Ala Ser Thr His Val Glu Ile Thr Thr
           35           40           45
Lys Ala Phe Arg Leu Ser Met Pro Leu Lys Gln Leu Ile Leu Glu Lys
           50           55           60
Ser Asp His Leu Pro Pro Met Glu Thr Ile Arg Val Val Leu Thr Ser
           65           70           75           80
His Lys Asp Lys Leu Gly Thr Glu Val His Val Val Ala Ser His Gly
           85           90           95
Lys Glu Ile Leu Gln Thr Lys Val His Asn Ala Asn Pro Tyr Thr Ala
           100          105          110
Val Ile Asn Ala Phe Lys Lys Ile Arg Thr Met Ala Asn Lys His Ser
           115          120          125
Asn Lys Arg Lys Asp Arg Thr Lys His Asp Leu Gly Leu Ala Ala Lys
           130          135          140
Glu Glu Arg Ile Ala Ile Gln Glu Glu Gln Glu Asp Arg Leu Ser Asn
           145          150          155          160
Arg Val Ala Ser Cys Arg Arg Pro Arg Cys Leu Gly Phe Ser Lys Asn
           165          170          175
Ser Trp Val Cys Ser Arg Ile Ser Glu Lys Glu Asp Leu Gln Glu Lys
           180          185          190
Asp Glu His Ser Tyr Ala Ile Ser Arg Arg Gly Tyr Pro Pro Ala Arg
           195          200          205
Val Cys Arg Arg Lys Leu Pro Asp Leu Leu Glu Arg Ala Arg Ala
           210          215          220

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<210>632

<211>254

<212>PRT

<213>Chlamydia pneumoniae

<400>632

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Ser Ser Met Gln Ile Cys Val Thr Gly Val Val Leu Arg Ser Arg Pro
 1           5           10           15
Leu Gly Lys Asn His Thr Leu Thr Thr Leu Phe Thr Pro Glu Gly Leu
           20           25           30
Phe Thr Phe Phe Ala Lys Gln Gly Gln Thr Leu Gln Cys Asp Tyr Arg
           35           40           45
Glu Thr Leu Val Pro Ile Ser Leu Gly Lys Tyr Thr Leu His Arg Asn
           50           55           60
Gly Ser Arg Leu Pro Lys Leu Thr His Gly Asp Ile Leu Asn Ala Phe
           65           70           75           80
Glu Ala Ile Lys Gln Thr Tyr Ala Leu Leu Glu Ala Ser Gly Lys Met
           85           90           95
Ile Gln Ala Leu Leu Ala Ser Gln Trp Lys Glu Lys Pro Ser His Lys
           100          105          110
Leu Phe Ser Leu Phe Leu Asn Phe Leu His Arg Ile Pro Glu Ser Ser
           115          120          125
Asn Pro Glu Phe Phe Ala Ala Ile Phe Val Leu Lys Leu Leu Gln Tyr
           130          135          140
Glu Gly Ile Leu Asp Leu Thr Pro Ala Cys Ser Leu Cys Lys Ala Ser
           145          150          155          160
Leu Pro Tyr Ala Cys Tyr Arg Tyr Gln Gly His Lys Leu Cys Lys Lys
           165          170          175
His Gln His Lys Gln Ala Ile Ser Ile Glu Lys Glu Glu Glu Gln Ile
           180          185          190

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Leu Gln Ala Ile Ile His Ala Lys Lys Phe Ser Glu Leu Leu Ala Ile
 195 200 205
 Ala Glu Phe Pro Ile Ala Ile Ala Glu Lys Ile Phe Tyr Leu Phe Asp
 210 215 220
 Ser Leu Gln Glu Glu Lys Lys Ser Glu Arg Asn Ser Ser Glu Asp Pro
 225 230 235 240
 Tyr His Glu Ile Leu Arg Leu Ser Lys Val Val His Pro Tyr
 245 250

<210>633

<211>207

<212>PRT

<213>Chlamydia pneumoniae

<400>633

Leu Phe Leu Tyr Gly Asp His Asn Leu Gly Phe Ala Cys Arg Tyr Leu
 1 5 10 15
 Phe Phe Phe Ile Val Leu Phe Ala Ser Gly Ser Phe Gly Asn Gln Leu
 20 25 30
 Leu Ser Val Pro Cys Trp Leu Ser Glu Glu Glu Ser Phe Tyr Thr His
 35 40 45
 Arg Phe Asp Phe Ser Lys Ser Tyr Pro Asp Met Glu Asn Met Glu Ile
 50 55 60
 Gln Ala Gln Arg Lys Lys Arg Val Glu Phe Asn Leu Thr Gly Glu Phe
 65 70 75 80
 Pro Lys Leu Glu Thr Leu Asn Tyr Gln Gly Ser Phe Gly His Leu Arg
 85 90 95
 Ala Lys Cys Arg Gly Val Tyr Pro Val Leu Tyr Ala Leu Asn Phe Ser
 100 105 110
 Cys Ser Ser Cys Lys Met Asp Met Asp Phe Arg Gly Lys Trp Asn Arg
 115 120 125
 Ser Ser Thr Ile Thr Ile Ser Asn Gln Lys Glu Ser Ile Asn Leu Lys
 130 135 140
 Leu Pro Lys Asp Val Gly Val Ile Val Asn Thr Lys Thr Ser Leu Lys
 145 150 155 160
 Gly Asn Val Cys Pro Gly Ser Thr Phe Ile Lys Gln Gly Trp Gly Val
 165 170 175
 Trp Asn Lys Ile Tyr His Asn Asp Leu Val Gly Phe Ser Glu Val Thr
 180 185 190
 Leu Ile Phe Asn Val Ser Ser Glu Gly Gly Thr Ile Thr Phe Ser
 195 200 205

<210>634

<211>219

<212>PRT

<213>Chlamydia pneumoniae

<400>634

Ser Leu Ile Met Arg Cys Thr Ala Tyr Cys Thr Ala Ser Ala Tyr Asn
 1 5 10 15
 Leu His Val Leu Phe His Leu Leu Lys Pro Arg Tyr Pro Thr Ile Leu
 20 25 30
 Ser Arg Glu Tyr Val Leu Ala Asn Leu Asp Ser Thr Gln Ala Ser Asn
 35 40 45
 Gln Leu Ala Ile Phe Phe Pro Phe Gly Val Ala Val Phe Trp Gly Trp
 50 55 60
 Glu Glu Ser Glu Glu Ile Lys Leu Leu Gln Thr Ile Val Thr Ala Ser
 65 70 75 80
 Pro Glu Ile Leu Pro Gln Pro Glu Ile Asp Cys Tyr Asn Phe His Tyr
 85 90 95
 Gly Asp Lys Leu Gln Ile Arg Arg Asp Arg Leu Thr Leu Ala Asp Thr
 100 105 110
 Thr Leu Asn Thr Lys Leu Ala Ile Ala Phe Gly Leu Ala Gln Ser Val
 115 120 125
 Lys Leu Thr Thr Phe Glu Thr Thr Ile Tyr Lys Thr Ile Glu Asp Ser
 130 135 140
 Lys Arg Leu Pro Gln Asp Leu Ala Thr Lys Gly Lys Ile Ser Met Ser
 145 150 155 160

Arg Lys Ala Ile Ala Lys Lys Ile Gly Lys Leu Phe Leu Lys Ala
 165 170 175
 Ser Val Asn Leu His Ser Asp Ile Leu Asp Glu Pro Asp Phe Trp
 180 185 190
 Asp His Pro Glu Thr Gln Ala Ile Tyr Arg Asp Val Leu Ser Cys Leu
 195 200 205
 Asp Ile Glu Ala Arg Ile Asn Val Leu Ile Val
 210 215
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 <212>PRT
 <213>Chlamydia pneumoniae
 <400>635
 Val Leu Gly Ala Lys Cys Met Ala Phe Lys Arg Lys Thr Arg Trp Leu
 1 5 10 15
 Trp Gln Val Leu Ile Leu Ser Val Gly Leu Asn Met Leu Phe Leu Leu
 20 25 30
 Leu Phe Tyr Ser Ala Ile Phe Arg Lys Asp Ile Tyr Lys Leu His Leu
 35 40 45
 Phe Ser Gly Pro Leu Ile Ala Lys Ser Ser Arg Lys Val Tyr Leu Ser
 50 55 60
 Glu Asp Phe Leu Asn Glu Ile Ser Gln Ala Ser Leu Asp Asp Leu Ile
 65 70 75 80
 Ser Leu Phe Lys Asp Glu Arg Tyr Met Tyr Gly Arg Pro Ile Lys Leu
 85 90 95
 Trp Ala Leu Ser Val Ala Ile Ala Ser His His Ile Asp Ile Thr Pro
 100 105 110
 Val Leu Ser Lys Pro Leu Thr Tyr Thr Glu Leu Lys Gly Ser Ser Val
 115 120 125
 Arg Trp Leu Leu Pro Asn Ile Asp Leu Lys Asp Phe Pro Val Ile Leu
 130 135 140
 Asp Tyr Leu Arg Cys His Lys Tyr Pro Tyr Thr Ser Lys Gly Leu Phe
 145 150 155 160
 Leu Leu Ile Glu Lys Met Val Gln Glu Gly Trp Val Asp Glu Asp Cys
 165 170 175
 Leu Tyr His Phe Cys Ser Thr Pro Glu Phe Leu Tyr Leu Arg Thr Leu
 180 185 190
 Leu Val Gly Ala Asp Val Gln Ala Ser Ser Val Ala Ser Leu Ala Arg
 195 200 205
 Met Val Ile Arg Cys Gly Ser Glu Arg Phe Phe His Phe Cys Asn Glu
 210 215 220
 Glu Ser Arg Thr Ser Met Ile Ser Ala Thr Gln Arg Gln Lys Val Leu
 225 230 235 240
 Lys Ser Tyr Leu Asp Cys Glu Glu Ser Leu Ala Ala Leu Leu Leu Leu
 245 250 255
 Val His Asp Ser Asp Val Val Leu His Glu Phe Cys Asp Glu Asp Leu
 260 265 270
 Glu Lys Val Ile Arg Leu Met Pro Gln Glu Ser Pro Tyr Ser Gln Asn
 275 280 285
 Phe Phe Ser Arg Leu Gln His Ser Pro Arg Arg Glu Leu Ala Cys Met
 290 295 300
 Ser Thr Arg Arg Val Glu Ala Pro Arg Val Gln Glu Asp Gln Asp Glu
 305 310 315 320
 Glu Tyr Val Val Gln Asp Gly Asp Ser Leu Trp Leu Ile Ala Lys Arg
 325 330 335
 Phe Gly Ile Pro Met Asp Lys Ile Ile Gln Lys Asn Gly Leu Asn His
 340 345 350
 His Arg Leu Phe Pro Gly Lys Val Leu Lys Leu Pro Ala Lys Gln Ser
 355 360 365
 <210>636
 <211>797
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>636

Leu	Arg	Leu	Ser	Met	Arg	Ile	Pro	Ile	Thr	Leu	Gln	Xaa	Tyr
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Phe	Ser	Glu	Pro	Leu	Ser	Thr	Lys	Glu	Ile	Leu	Glu	Ala	Cys
			20					25				30	Asp
Ile	Gly	Ile	Glu	Xaa	Glu	Ile	Glu	Asn	Thr	Thr	Leu	Tyr	Ser
			35					40				45	Phe
Ser	Val	Ile	Thr	Ala	Lys	Ile	Leu	His	Thr	Ile	Pro	His	Pro
			50					55			60	Asn	Ala
Asp	Lys	Leu	Arg	Val	Ala	Thr	Leu	Thr	Asp	Gly	Glu	Lys	Glu
				70							75	His	Gln
Val	Val	Cys	Gly	Ala	Pro	Asn	Cys	Glu	Ala	Gly	Leu	Ile	Val
				85							90	Ala	Leu
Ala	Leu	Pro	Gly	Ala	Lys	Leu	Phe	Asp	Ser	Glu	Gly	Gln	Ala
			100					105				110	Tyr
Ile	Lys	Lys	Ser	Lys	Leu	Arg	Gly	Val	Glu	Ser	Gln	Gly	Met
			115					120				125	Cys
Gly	Ala	Asp	Glu	Leu	Gly	Leu	Asp	Glu	Leu	Gln	Ile	Gln	Glu
			130					135				140	Arg
Leu	Leu	Glu	Leu	Pro	Glu	Ala	Thr	Pro	Leu	Gly	Glu	Asp	Leu
				150							155	Ala	Thr
Val	Leu	Gly	Asn	Thr	Ser	Leu	Glu	Ile	Ser	Leu	Thr	Pro	Asn
				165							170	Leu	Gly
His	Cys	Ala	Ser	Phe	Leu	Gly	Leu	Ala	Arg	Glu	Ile	Cys	His
			180					185				190	Val
Gln	Ala	Asn	Leu	Val	Ile	Pro	Lys	Glu	Phe	Ser	Phe	Glu	Asn
			195					200				205	Leu
Thr	Thr	Ala	Leu	Asp	Met	Gly	Asn	Asp	Pro	Asp	Ile	Cys	Pro
			210					215				220	Phe
Ser	Tyr	Val	Val	Ile	Thr	Gly	Ile	Ser	Ala	Gln	Pro	Ser	Pro
				230							235	Ile	Lys
Leu	Gln	Glu	Ser	Leu	Gln	Ala	Leu	Lys	Gln	Lys	Pro	Ile	Asn
				245							250	Ala	Ile
Val	Asp	Ile	Thr	Asn	Tyr	Ile	Met	Leu	Ser	Leu	Gly	Gln	Pro
				260							265	Leu	His
Ala	Tyr	Asp	Ala	Ser	His	Val	Ala	Leu	Asp	Ser	Leu	Arg	Val
			275					280				285	Glu
Leu	Ser	Thr	Pro	Glu	Ser	Leu	Thr	Leu	Leu	Asn	Gly	Glu	Thr
			290					295				300	Val
Leu	Pro	Ser	Gly	Val	Pro	Val	Val	Arg	Asp	Asp	His	Ser	Leu
				310							315	Leu	Gly
Leu	Gly	Gly	Val	Met	Gly	Ala	Lys	Ala	Pro	Ser	Phe	Gln	Glu
				325							330	Thr	Thr
Thr	Thr	Thr	Val	Ile	Lys	Ala	Ala	Tyr	Phe	Leu	Pro	Glu	Ala
				340							345	Leu	Arg
Ala	Ser	Gln	Lys	Leu	Leu	Pro	Ile	Pro	Ser	Glu	Ser	Ala	Tyr
				355							360	Arg	Phe
Thr	Arg	Gly	Ile	Asp	Pro	Gln	Asn	Val	Val	Pro	Ala	Leu	Gln
				370							375	Ala	Ala
Ile	His	Tyr	Ile	Leu	Glu	Ile	Phe	Pro	Glu	Ala	Thr	Ile	Ser
				385							390	Pro	Ile
Tyr	Ser	Ser	Gly	Glu	Ile	Cys	Arg	Glu	Leu	Lys	Glu	Val	Ala
				405							410	Leu	Arg
Pro	Lys	Thr	Leu	Gln	Arg	Ile	Leu	Gly	Lys	Ser	Phe	Ser	Ile
				420							425	Glu	Ile
Leu	Ser	Gln	Lys	Leu	Gln	Ser	Leu	Gly	Phe	Ser	Thr	Thr	Pro
				435							440	Gln	Glu
Thr	Ser	Leu	Leu	Val	Lys	Val	Pro	Ser	Tyr	Arg	His	Asp	Ile
				450							455	Asn	Glu
Glu	Ile	Asp	Leu	Val	Glu	Glu	Ile	Cys	Arg	Thr	Glu	Ser	Trp
				465							470	Asn	Ile
Glu	Thr	Gln	Asn	Pro	Val	Ser	Cys	Tyr	Thr	Pro	Ile	Tyr	Lys
				485							490	Leu	Lys
Arg	Glu	Thr	Ala	Gly	Phe	Leu	Ala	Asn	Ala	Gly	Leu	Gln	Glu
				500							505	Phe	Phe
												510	

Thr Pro Asp Leu Leu Asp Pro Glu Thr Val Ala Leu Thr Arg Lys Glu
 515 520 525
 Lys Glu Glu Ile Ser Leu Gln Gly Ser Lys His Thr Thr Val Leu Arg
 530 535 540
 Ser Ser Leu Leu Pro Gly Leu Leu Lys Ser Ala Ala Thr Asn Leu Asn
 545 550 555 560
 Arg Gln Ala Pro Ser Val Gln Ala Phe Glu Ile Gly Thr Val Tyr Ala
 565 570 575
 Lys His Gly Glu Gln Cys Gln Glu Thr Gln Thr Leu Ala Ile Leu Leu
 580 585 590
 Thr Glu Asp Gly Glu Ser Arg Ser Trp Leu Pro Lys Pro Ser Leu Ser
 595 600 605
 Phe Tyr Ser Leu Lys Gly Trp Val Glu Arg Leu Leu Tyr His His His
 610 615 620
 Leu Ser Ile Asp Ala Leu Thr Leu Glu Ser Ser Ala Leu Cys Glu Phe
 625 630 635 640
 His Pro Tyr Gln Gln Gly Val Leu Arg Ile His Lys Gln Ser Phe Ala
 645 650 655
 Thr Leu Gly Gln Val His Pro Glu Leu Ala Lys Lys Ala Gln Ile Lys
 660 665 670
 His Pro Val Phe Phe Ala Glu Leu Asn Leu Asp Leu Leu Cys Lys Met
 675 680 685
 Leu Lys Lys Thr Thr Lys Leu Tyr Lys Pro Tyr Ala Ile Tyr Pro Ser
 690 695 700
 Ser Phe Arg Asp Leu Thr Leu Thr Val Pro Glu Asp Ile Pro Ala Asn
 705 710 715 720
 Leu Leu Arg Gln Lys Leu Leu His Glu Gly Ser Lys Trp Leu Glu Ser
 725 730 735
 Val Thr Ile Ile Ser Ile Tyr Gln Asp Lys Ser Leu Glu Thr Arg Asn
 740 745 750
 Lys Asn Val Ser Leu Arg Leu Val Phe Gln Asp Tyr Glu Arg Thr Leu
 755 760 765
 Ser Asn Gln Asp Ile Glu Glu Glu Tyr Cys Arg Leu Val Ala Leu Leu
 770 775 780
 Asn Glu Leu Leu Thr Asp Thr Lys Gly Thr Ile Asn Ser
 785 790 795

<310>637

<211>328

<212>PRT

<213>Chlamydia pneumoniae

<400>637

Arg Asp Tyr Gln Phe Met Lys Gln Leu Leu Phe Cys Val Cys Val Phe
 1 5 10 15
 Ala Met Ser Cys Ser Ala Tyr Ala Ser Pro Arg Arg Gln Asp Pro Ser
 20 25 30
 Val Met Lys Glu Thr Phe Arg Asn Asn Tyr Gly Ile Ile Val Ser Gly
 35 40 45
 Gln Glu Trp Val Lys Arg Gly Ser Asp Gly Thr Ile Thr Lys Val Leu
 50 55 60
 Lys Asn Gly Ala Thr Leu His Glu Val Tyr Ser Gly Gly Leu Leu His
 65 70 75 80
 Gly Glu Ile Thr Leu Thr Phe Pro His Thr Thr Ala Leu Asp Val Val
 85 90 95
 Gln Ile Tyr Asp Gln Gly Arg Leu Val Ser Arg Lys Thr Phe Phe Val
 100 105 110
 Asn Gly Leu Pro Ser Gln Glu Glu Leu Phe Asn Glu Asp Gly Thr Phe
 115 120 125
 Val Leu Thr Arg Trp Pro Asp Asn Asn Asp Ser Asp Thr Ile Thr Lys
 130 135 140
 Pro Tyr Phe Ile Glu Thr Thr Tyr Gln Gly His Val Ile Glu Gly Ser
 145 150 155 160
 Tyr Thr Ser Phe Asn Gly Lys Tyr Ser Ser Ile His Asn Gly Glu
 165 170 175
 Gly Val Arg Ser Val Phe Ser Ser Asn Asn Ile Leu Leu Ser Glu Glu

Thr	Phe	Asn	Glu	Gly	Val	Met	Val	Lys	Tyr	Thr	Thr	Phe	Tyr	Pro	Asn	180	185	190
		195					200						205					
Arg	Asp	Pro	Glu	Ser	Ile	Thr	His	Tyr	Gln	Asn	Gly	Gln	Pro	His	Gly	210	215	220
Leu	Arg	Leu	Thr	Tyr	Leu	Gln	Gly	Gly	Ile	Pro	Asn	Thr	Ile	Glu	Glu	225	230	235
Trp	Arg	Tyr	Gly	Phe	Gln	Asp	Gly	Thr	Thr	Ile	Val	Phe	Lys	Asn	Gly	245	250	255
Cys	Lys	Thr	Ser	Glu	Ile	Ala	Tyr	Val	Lys	Gly	Val	Lys	Glu	Gly	Leu	260	265	270
Glu	Leu	Arg	Tyr	Asn	Glu	Gln	Glu	Ile	Val	Ala	Glu	Glu	Val	Ser	Trp	275	280	285
Arg	Asn	Asp	Phe	Leu	His	Gly	Glu	Arg	Lys	Ile	Tyr	Ala	Gly	Gly	Ile	290	295	300
Gln	Lys	His	Glu	Trp	Tyr	Tyr	Arg	Gly	Arg	Ser	Val	Ser	Lys	Ala	Lys	305	310	315
Phe	Glu	Arg	Leu	Asn	Ala	Ala	Gly									325		

<210>638

<211>460

<212>PRT

<213>Chlamydia pneumoniae

<400>638

Trp	Glu	Ser	Ser	Arg	Ser	Arg	Val	Thr	Glu	Asn	Leu	Lys	Lys	Met	Arg	5	10	15
Ala	Glu	Lys	Val	Arg	Glu	Asn	Ile	Ser	Lys	Val	Asn	Ser	Glu	Met	Val	20	25	30
Met	Leu	Leu	Pro	Lys	Asp	Thr	Arg	Thr	Trp	Glu	Met	Glu	Arg	Arg	Tyr	35	40	45
Met	Ser	Thr	Tyr	Glu	Gln	Leu	Gly	Ile	Leu	Ile	Lys	Ala	Lys	Tyr	Arg	50	55	60
Lys	Lys	Gln	Glu	Ala	Ser	Val	Lys	Lys	Tyr	Gln	Val	Ala	Phe	Glu	Glu	65	70	75
Lys	Arg	Gln	Ser	Pro	Met	Pro	Thr	Leu	Arg	His	Leu	Glu	Met	Lys	Asn	85	90	95
Glu	Gly	Ile	Cys	Leu	Lys	Arg	Leu	Gln	Gln	Arg	Val	Asp	Lys	Met	Gln	100	105	110
Arg	Pro	Tyr	Glu	Met	Ala	Gln	Gln	Ala	Trp	Asn	Arg	Ala	Thr	Asp	Asn	115	120	125
Tyr	Arg	Pro	Phe	Leu	Met	Ala	Leu	Thr	Arg	Ile	Glu	His	Glu	Leu	Arg	130	135	140
Leu	Ala	Asp	Tyr	Asn	Asn	Trp	Gly	Gln	Pro	Glu	Asp	Leu	Cys	Ile	Ala	145	150	155
Tyr	Ala	Asn	Val	Glu	Lys	Arg	Ala	Glu	Pro	Tyr	Lys	Lys	Ser	Leu	Leu	165	170	175
Glu	Ile	Arg	Gln	Val	Leu	Glu	Asp	Tyr	Ala	Lys	Leu	Arg	Ser	Ala	Ile	180	185	190
Ser	Phe	Ile	Gln	Asp	Lys	Arg	Leu	Trp	Ile	Glu	Lys	Glu	Ser	Glu	Asp	195	200	205
Leu	Arg	Ile	Leu	Ile	Asn	Pro	Phe	Phe	Ser	Ser	Phe	His	Trp	Glu	Asp	210	215	220
Asp	Ala	Gly	Gly	Ser	Arg	Glu	Met	Asn	Lys	Tyr	Val	Pro	Trp	Trp	Gln	225	230	235
Leu	Ser	Arg	Val	Thr	Arg	Lys	Asp	Leu	Leu	Ala	Ala	Leu	Val	Phe	Gly	245	250	255
Ile	Arg	Ile	Ala	Leu	Val	Val	Ala	Gly	Ile	Gly	Ile	Thr	Ile	Ala	Leu	260	265	270
Ala	Ile	Gly	Ile	Met	Ile	Gly	Leu	Val	Ser	Gly	Tyr	Phe	Gly	Gly	Thr	275	280	285
Val	Asp	Met	Ile	Leu	Ser	Arg	Phe	Thr	Glu	Ile	Trp	Glu	Thr	Met	Pro	290	295	300
Val	Leu	Phe	Ile	Leu	Met	Leu	Val	Ile	Ser	Ile	Thr	Gln	Gln	Lys	Ser	305	310	315

Leu Leu Leu Asn Th 1 Leu Leu Gly Cys Phe Ser Trp Gly Phe
 335 330 335
 Ser Arg Tyr Val Arg Ile Glu Val Leu Lys Gln Arg Asp Arg Gly Tyr
 340 345 350
 Val Leu Ala Ala Thr Asn Leu Gly Tyr Ser His Tyr Tyr Ile Met Val
 355 360 365
 His Gln Ile Leu Pro Asn Ala Ile Val Pro Val Ile Ser Leu Val Pro
 370 375 380
 Phe Ala Met Met Ala Met Ile Ser Cys Glu Ala Gly Leu Thr Phe Leu
 385 390 395 400
 Gly Leu Gly Glu Glu Ser Ser Ala Ser Trp Gly Asn Leu Met Arg Glu
 405 410 415
 Gly Val Thr Gly Phe Pro Ala Glu Ser Ala Val Leu Trp Pro Pro Ala
 420 425 430
 Ile Ile Leu Thr Met Leu Leu Ile Ala Ile Ala Leu Ile Gly Asp Gly
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 Val Arg Asp Ala Leu Asp Pro Arg Leu Gln Asp Ser
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 <213>Chlamydia pneumoniae
 <400>639
 Val Leu Lys Tyr Ile Leu Lys Arg Leu Val Leu Ile Pro Leu Thr Leu
 1 5 10 15
 Phe Ala Ile Val Ser Ile Asn Phe Val Ile Leu Asn Ala Ala Pro Gly
 20 25 30
 Asp Val Leu Glu Glu Lys Ser Arg Asp Ala Leu Gly Glu Ala Gly Lys
 35 40 45
 Ser Asp Lys Met Arg Ser Tyr Lys Gly Pro Asp Arg Tyr Leu Gln Phe
 50 55 60
 Arg Glu His Tyr Gly Leu Thr Leu Pro Ile Phe Phe Asn Thr Arg Pro
 65 70 75 80
 Lys Ile Thr His Lys Lys Ile Gln Thr Ala Leu Gln Glu Leu Ala Asn
 85 90 95
 Ala Asn Asn Thr Thr Pro Ser Ala Lys Asn Ala Ala Lys Ser Leu Val
 100 105 110
 Tyr Trp Gly Asp Cys Ala Lys Phe Val Met Pro Ala Leu Leu Phe Glu
 115 120 125
 Ala Asp Asp Ala Ser Arg Asp Asp Lys Tyr Arg His Ile Ala Ala Asp
 130 135 140
 Leu Phe Ile Arg Gly Gly Val Leu Gln Gly Phe Val Gly Pro Asn Leu
 145 150 155 160
 Ser Pro Glu Gln Arg Ala Gln Asn Lys Glu Ile Ala Glu Ser Asn Ala
 165 170 175
 Phe Leu Val Arg Gln Leu Asn Glu Glu Asp Leu Asp Thr Lys Val Glu
 180 185 190
 Ala Leu Lys Gly Trp Phe Gln Asp His Gly Gly Thr Glu Val Phe Cys
 195 200 205
 Tyr Ser Ser Lys Gln Phe Trp Lys Thr Phe Phe Leu Glu Thr Arg Phe
 210 215 220
 Ala Arg Tyr Met Ser Arg Val Leu Arg Leu Asp Phe Gly Thr Leu Arg
 225 230 235 240
 Asn Asp Ala His Lys Thr Val Ile Ser Glu Val Ile Lys Arg Leu Arg
 245 250 255
 Cys Ser Leu Val Leu Ser Ile Leu Pro Met Ile Val Gly Phe Val Leu
 260 265 270
 Cys Gln Ile Phe Gly Met Ile Met Ala Leu Lys Arg Asn Arg Trp Ile
 275 280 285
 Asp His Ser Leu Asn Phe Ile Phe Leu Ile Leu Phe Ser Ile Pro Val
 290 295 300
 Phe Val Ala Val Pro Trp Ile Leu Asp Asn Phe Val Ile Asn Lys Thr
 305 310 315 320
 Ile Pro Phe Thr Thr Ile Pro Met Pro Tyr Ser Gly Leu Arg Ser Pro

330 335
 Pro² Glu Val Phe Asn Glu Leu Ser Thr Leu Gly Arg Ile Phe Asp Leu
 340 345 350
 Val Ser His Gly Phe Leu Pro Phe Cys Ala Val Ser Tyr Gly Ala Leu
 355 360 365
 Ala Ala Gln Ser Arg Leu Ser Arg Ser Ile Phe Leu Glu Val Leu Ser
 370 375 380
 Gln Asp Phe Ile Cys Ala Ala Lys Ala Arg Gly Leu Arg Trp Phe Asp
 385 390 395 400
 Ile Leu Tyr Lys His Val Gly Lys Asn Ala Ala Val Ser Ile Val Thr
 405 410 415
 Ser Leu Ala Ser Ser Phe Arg Asn Val Thr Trp Arg Gly Val Gly Cys
 420 425 430
 Arg Asn Pro Ile Gln Tyr Arg Trp Leu Trp Glu Leu Leu Leu Ser Gly
 435 440 445
 Asn Phe Lys Ser Arg Ser Gln Cys Ser Ser Ile Phe Cys Ala Cys Arg
 450 455 460
 Ile Gly Ser Ile Phe Ser Gly Ile Phe Ala Arg Arg Tyr Leu Leu Arg
 465 470 475 480
 Thr Leu Arg Ser Ser Ser Ser Ala Arg Gly Lys Glu Asp Ile Asn Ala
 485 490 495
 Glu Ala Ser Phe Leu Leu Ser Thr Phe Ser Ile Cys Leu Leu
 500 505 510

<210>640

<211>713

<212>PRT

<213>Chlamydia pneumoniae

<400>640

Lys Arg Arg Glu Ser Gly His Met Tyr Lys Arg Cys Val Leu Asp Lys
 1 5 10 15
 Ile Leu Lys Gly Ile Val Ala Gly Ser Leu Ile Leu Leu Tyr Trp Ser
 20 25 30
 Ser Asp Leu Leu Glu Arg Asp Ile Lys Ser Ile Lys Gly Asn Val Arg
 35 40 45
 Asp Ile Gln Glu Asp Ile Arg Glu Ile Ser Arg Val Val Lys Gln Gln
 50 55 60
 Gln Thr Ser Gln Ala Ile Pro Ala Ala Pro Gly Val Met Leu Ala Pro
 65 70 75 80
 Lys Leu Val Arg Asp Glu Ala Phe Ala Leu Leu Phe Gly Asp Pro Ser
 85 90 95
 Tyr Pro Asn Leu Leu Ser Leu Asp Pro Tyr Lys Gln Gln Thr Leu Pro
 100 105 110
 Glu Leu Leu Gly Thr Asn Phe His Pro His Gly Ile Leu Arg Thr Ala
 115 120 125
 His Val Gly Lys Pro Glu Xaa Leu Ser Leu Leu Met Ala Leu Ile Cys
 130 135 140
 Arg Gly Leu Leu Arg Ser Leu Tyr Ser Ser Leu Ala Ser Pro His Val
 145 150 155 160
 Gly Lys Tyr Glu Glu Phe Ser Pro Asp Leu Ala Val Lys Ile Glu Glu
 165 170 175
 His Leu Val Glu Asp Gly Ser Gly Asp Lys Glu Phe His Ile Tyr Leu
 180 185 190
 Arg Pro Asn Val Phe Trp Arg Pro Ile Asp Pro Lys Ala Leu Pro Lys
 195 200 205
 His Val Gln Leu Asp Glu Val Phe Gln Arg Pro His Pro Val Thr Ala
 210 215 220
 His Asp Ile Lys Phe Phe Tyr Asp Ala Val Met Asn Pro Tyr Val Ala
 225 230 235 240
 Thr Met Arg Ala Val Ala Leu Arg Ser Cys Tyr Glu Asp Val Val Ser
 245 250 255
 Val Ser Val Glu Asn Asp Leu Lys Leu Val Val Arg Trp Lys Ala His
 260 265 270
 Thr Val Ile Asn Glu Glu Gly Lys Glu Glu Arg Lys Val Leu Tyr Ser
 275 280 285

Ala Phe Ser Asn Thr Ser Leu Gln Pro Leu Pro Arg Val Tyr
 290 295 300
 Gln Tyr Phe Ala Asn Gly Glu Lys Ile Ile Glu Asp Glu Asn Ile Asp
 305 310 315 320
 Thr Tyr Arg Thr Asn Ser Ile Trp Ala Gln Asn Phe Thr Met His Trp
 325 330 335
 Ala Asn Asn Tyr Ile Val Ser Cys Gly Ala Tyr Tyr Phe Ala Gly Met
 340 345 350
 Asp Asp Glu Lys Ile Val Phe Ser Arg Asn Pro Asp Phe Tyr Asp Pro
 355 360 365
 Leu Ala Ala Leu Ile Asp Lys Arg Phe Val Tyr Phe Lys Glu Ser Thr
 370 375 380
 Asp Ser Leu Phe Gln Asp Phe Lys Thr Gly Lys Ile Asp Ile Ser Tyr
 385 390 395 400
 Leu Pro Pro Asn Gln Arg Asp Asn Phe Tyr Ser Phe Met Lys Ser Ser
 405 410 415
 Ala Tyr Asn Lys Gln Val Ala Lys Gly Gly Ala Val Arg Glu Thr Val
 420 425 430
 Ser Ala Asp Arg Ala Tyr Thr Tyr Ile Gly Trp Asn Cys Phe Ser Leu
 435 440 445
 Phe Phe Gln Ser Arg Gln Val Arg Cys Ala Met Asn Met Ala Ile Asp
 450 455 460
 Arg Glu Arg Ile Ile Glu Gln Cys Leu Asp Gly Gln Gly Tyr Thr Ile
 465 470 475 480
 Ser Gly Pro Phe Ala Ser Ser Ser Pro Ser Tyr Asn Lys Gln Ile Glu
 485 490 495
 Gly Trp His Tyr Ser Pro Glu Glu Ala Ala Arg Leu Leu Glu Glu Glu
 500 505 510
 Gly Trp Ile Asp Thr Asp Gly Asp Gly Ile Arg Glu Lys Val Ile Asp
 515 520 525
 Gly Val Ile Val Pro Phe Arg Phe Arg Leu Cys Tyr Tyr Val Lys Ser
 530 535 540
 Val Thr Ala His Thr Ile Ala Asp Tyr Val Ala Thr Ala Cys Lys Glu
 545 550 555 560
 Ile Gly Ile Glu Cys Ser Leu Leu Gly Leu Asp Met Ala Asp Leu Ser
 565 570 575
 Gln Ala Phe Asp Glu Lys Asn Phe Asp Ala Leu Leu Met Gly Trp Cys
 580 585 590
 Leu Gly Ile Pro Pro Glu Asp Pro Arg Ala Leu Trp His Ser Glu Gly
 595 600 605
 Ala Met Glu Lys Gly Ser Ala Asn Val Val Gly Phe His Asn Glu Glu
 610 615 620
 Ala Asp Lys Ile Ile Asp Arg Leu Ser Tyr Glu Tyr Asp Leu Lys Glu
 625 630 635 640
 Arg Asn Arg Leu Tyr His Arg Phe His Glu Ile Ile His Glu Glu Ala
 645 650 655
 Pro Tyr Ala Phe Leu Phe Ser Arg His Cys Ser Leu Leu Tyr Lys Asp
 660 665 670
 Tyr Val Lys Asn Ile Phe Val Pro Thr His Arg Thr Asp Leu Ile Pro
 675 680 685
 Glu Ala Gln Asp Glu Thr Val Asn Val Thr Met Val Trp Leu Glu Lys
 690 695 700
 Lys Glu Asp Pro Cys Leu Ser Thr Ser
 705 710

<210>641

<211>210

<212>PRT

<213>Chlamydia pneumoniae

<400>641

Gln Phe Pro Arg Ile His Ala Asp Asp Ile Ile Asn Ser Met Asp Glu

1

5

10

15

Ile Thr Pro Asn Tyr Pro Leu Leu Arg Gln Asp Ser Leu Trp Asn Arg

20

25

30

Val Arg Val Ser Trp Arg Ala Asp Leu Ser Val Ser Ser Arg Tyr Glu

35
 Ile Ala Ser Ala Ile Ala Ile Leu Gly Leu Leu Val Ala Phe Cys Ala
 50 55 60
 Ser Ala Ala Val Ser Ile Ile Phe Thr Ala Asn Pro Ser Cys Ser Gly
 65 70 75 80
 Ile Tyr Arg Trp Leu Phe Gly Phe Arg Ala Phe Thr Tyr Pro Ile Gly
 85 90 95
 Tyr Arg Ser Thr Asn His Arg Asn Tyr Ser Phe Thr Leu Trp Tyr Leu
 100 105 110
 Leu Val Ser Ser Thr Thr Arg Val Ile Thr Leu Ser Ile Cys Phe Tyr
 115 120 125
 Thr Phe Tyr Leu Gln Ile Ile Phe Leu Phe Leu Tyr Ser Ala Trp Lys
 130 135 140
 Pro Leu Arg Gln Pro Leu Phe Cys His Arg Leu Leu Ile Ile Trp Pro
 145 150 155 160
 Ile Ser Gly Leu Ser Cys Arg Ile Leu Asn Lys Glu Asn Lys Asn Glu
 165 170 175
 Lys Ile Asn Val Ser Pro Ser Phe Ser Ser Cys Ala Ser Cys Cys Arg
 180 185 190
 Phe Cys Phe Trp Ile Arg Ile Leu Phe Ser Thr Thr Arg Arg Ser Ser
 195 200 205
 Arg Phe
 210
 <210>642
 <211>338
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>642
 Asp Ser Gly Phe Met Lys Pro Leu Gly Phe Gln Glu Asn Leu Glu Ala
 1 5 10 15
 Leu Cys Asn Lys Thr Ser Arg Gln Leu Leu Lys Tyr Leu Ile Lys Gln
 20 25 30
 Ile Leu Phe Val Cys Gly Ala Ser Leu Leu Ile Ala Leu Glu Phe Ser
 35 40 45
 Phe Phe Leu Tyr Phe Phe Leu Phe Ser Gly Lys Thr Val Ile Pro Ala
 50 55 60
 Phe Cys Leu Ala Cys Phe Phe Leu Thr Leu Phe Val Cys Leu Val Thr
 65 70 75 80
 Arg Leu Tyr Leu Leu Ser Gly Lys Gly Asp Phe Phe Glu Asp Leu Ala
 85 90 95
 Ser Glu Tyr Leu Gln Gly Ala Val Pro Asn Lys Arg Ser Gln Asn
 100 105 110
 Ile Val Glu Glu Gln Ser His Leu Ala Ala Ala Thr Lys Leu Ser
 115 120 125
 Ile Asn Leu Gln Asn Gln Glu Tyr Ser Leu Leu Ser Glu Ile Phe Lys
 130 135 140
 Phe Leu Pro Lys His Asp Leu Ile Arg Lys Phe Ser Cys Phe Cys Phe
 145 150 155 160
 Trp Lys Asp Tyr Phe Leu Phe Arg Glu Cys Leu Leu Gln Lys Ala Ile
 165 170 175
 Glu Ala Tyr Ile Lys Val Val Gln Ala Ile Pro Val Asp Leu Ser Ala
 180 185 190
 His Val Ser Leu Ala Asp Ala Tyr Val Ala Leu Ser Gly Leu Tyr Ala
 195 200 205
 Asp Pro Arg Lys Tyr Pro Glu Phe Asp Ala Asn Tyr Trp Ile Pro Ser
 210 215 220
 Gly Arg Tyr Ser Ala Glu Ile Gln Glu Lys Phe Phe Ala Thr Ala Arg
 225 230 235 240
 Arg Ala Ile Glu Glu Phe Gln Ile Leu Asn Glu Tyr Ala Pro Gly Asn
 245 250 255
 Ala Trp Val His Ala Gln Leu Ala Tyr Ser Tyr His Asp Leu Gln Met
 260 265 270
 Pro Met Glu Glu Ile Gln Glu Tyr Glu Ile Val Leu Lys Leu Lys Pro
 275 280 285

Asn Asp Val Glu Thr Met Ser Lys Leu Gly Ile Leu Tyr Gln Gln
 290 295 300
 Gly Met Asn Ala Lys Gly Leu Arg Ile Tyr Glu Glu Ile Lys Lys Arg
 305 310 315 320
 Asp Tyr Lys Lys Ser Gln Lys Leu Ile Lys Phe Tyr Gly Val Glu Tyr
 325 330 335
 Lys Tyr

<310>643

<211>350

<212>PRT

<213>Chlamydia pneumoniae

<400>643

Trp Lys Ile Met Arg Leu Ile Val Leu Met Gln Cys Leu Val Ser Leu
 1 5 10 15
 Phe Leu Ala Lys Lys Val Thr Val Thr Thr Pro Ala Tyr Leu Leu Ala
 20 25 30
 Asn Phe Gly Gly Pro Arg His Ala Lys Asp Leu Gln Glu Phe Leu Ile
 35 40 45
 Ser Leu Leu Thr Asp Arg Asp Val Thr Gly Thr Phe Leu Pro Arg Val
 50 55 60
 Leu His Arg His Leu Phe Thr Phe Ile Ala Lys Lys Arg Val Pro Lys
 65 70 75 80
 Val Leu Pro Gln Tyr Gln Ser Leu Gln Asn Trp Ser Pro Ile Tyr Phe
 85 90 95
 Asp Thr Glu Thr Leu Ala Lys Thr Leu Ser Glu Ile Leu Arg Ala Pro
 100 105 110
 Val Ile Pro Phe His Arg Tyr Leu Pro Ser Thr His Glu Lys Thr Leu
 115 120 125
 Leu Ala Leu Arg Thr Leu His Thr Arg His Val Ile Gly Ile Pro Leu
 130 135 140
 Phe Pro His Phe Thr Tyr Ser Val Thr Gly Ser Ile Val Arg Phe Phe
 145 150 155 160
 Met Lys His Val Pro Glu Ile Pro Ile Ser Trp Ile Pro Gln Phe Gly
 165 170 175
 Ser Asp Ser Lys Phe Val Ser Leu Ile Thr Cys His Ile Arg Asp Phe
 180 185 190
 Leu Gln Lys Leu Gly Ile Leu Glu Lys Glu Cys Cys Phe Leu Phe Ser
 195 200 205
 Val His Gly Leu Pro Val Arg Tyr Ile Ser Gln Gly Asp Pro Tyr Ser
 210 215 220
 Lys Gln Cys Tyr Glu Ser Phe Ser Ala Ile Thr Thr Asn Phe Lys Gln
 225 230 235 240
 Ser Glu Asn Phe Leu Cys Phe Gln Ser Lys Phe Gly Pro Gly Lys Trp
 245 250 255
 Leu Ser Pro Ser Thr Ala Gln Leu Cys Gln Asn Ile Asp Thr Asp Lys
 260 265 270
 Pro Asn Val Ile Val Val Pro Phe Gly Phe Ile Ser Asp His Leu Glu
 275 280 285
 Thr Leu Tyr Glu Ile Glu Arg Asp Tyr Leu Pro Leu Leu Arg Ser Arg
 290 295 300
 Gly Tyr Arg Ala Leu Arg Ile Pro Ala Ile Tyr Ser Ser Pro Leu Trp
 305 310 315 320
 Val Ser Thr Leu Val Asp Ile Val Lys Glu Asn Ser Thr Val Val Ala
 325 330 335
 Glu Glu Leu Ile Lys Ser Gly Lys Lys His Thr Gly Ile Arg
 340 345 350

<210>644

<211>257

<212>PRT

<213>Chlamydia pneumoniae

<400>644

Asn Ser Glu Ala Gln Leu Asn Val Lys Ile Lys Phe Ser Trp Lys Val
 1 5 10 15

Asn Phe Leu Ile Lys Leu Leu Ala Val Gly Leu Ile Phe Gly Cys
 20 25 30
 Ser Arg Val Lys Arg Glu Val Leu Val Gly Arg Asp Ala Thr Trp Phe
 35 40 45
 Pro Lys Gln Phe Gly Ile Tyr Thr Ser Asp Thr Asn Ala Phe Leu Asn
 50 55 60
 Asp Leu Val Ser Glu Ile Asn Tyr Lys Glu Asn Leu Asn Ile Asn Ile
 65 70 75 80
 Val Asn Gln Asp Trp Val His Leu Phe Glu Asn Leu Asp Asp Lys Lys
 85 90 95
 Thr Gln Gly Ala Phe Thr Ser Val Leu Pro Thr Leu Glu Met Leu Glu
 100 105 110
 His Tyr Gln Phe Ser Asp Pro Ile Leu Leu Thr Gly Pro Val Leu Val
 115 120 125
 Val Ala Gln Asp Ser Pro Tyr Gln Ser Ile Glu Asp Leu Lys Gly Arg
 130 135 140
 Leu Ile Gly Val Tyr Lys Phe Asp Ser Ser Val Leu Val Ala Gln Asn
 145 150 155 160
 Ile Pro Asp Ala Val Ile Ser Leu Tyr Gln His Val Pro Ile Ala Leu
 165 170 175
 Glu Ala Leu Thr Ser Asn Cys Tyr Asp Ala Leu Leu Ala Pro Val Ile
 180 185 190
 Glu Val Thr Ala Leu Ile Glu Thr Ala Tyr Lys Gly Arg Leu Lys Ile
 195 200 205
 Ile Ser Lys Pro Leu Asn Ala Asp Gly Leu Arg Leu Ala Ile Leu Lys
 210 215 220
 Gly Thr Asn Gly Asp Leu Leu Glu Gly Phe Asn Ala Gly Leu Val Lys
 225 230 235 240
 Thr Arg Arg Ser Gly Lys Tyr Asp Ala Ile Lys Gln Arg Tyr Arg Leu
 245 250 255
 Pro

<210>645

<211>196

<212>PRT

<213>Chlamydia pneumoniae

<400>645

Leu Arg Lys Leu Cys Ser Ser Arg Gly Asp Val Arg Ile Leu Ala Gly
 1 5 10 15
 Lys Tyr Lys Gly Lys Ser Leu Lys Thr Phe Ser Asn Pro His Ile Arg
 20 25 30
 Pro Thr Ser Gly Leu Val Lys Glu Ala Phe Phe Ser Ile Cys Arg Glu
 35 40 45
 Asp Ile Glu Gly Ala Ala Phe Leu Asp Leu Phe Ala Gly Met Gly Ala
 50 55 60
 Ile Gly Phe Glu Ala Leu Ser Arg Gly Ala Ala Ser Val Val Phe Val
 65 70 75 80
 Asp Ile Ser Ile Lys Ala Ile Gln Leu Ile His Thr Asn Ser Ala Leu
 85 90 95
 Leu Gly Glu Gln Leu Pro Val Val Ile Phe Arg Gln Asp Ala Gln Ser
 100 105 110
 Ala Ile Gln Arg Leu Ile Lys Gln Lys Arg Ser Phe Asp Leu Ile Tyr
 115 120 125
 Ile Asp Pro Pro Tyr Glu Leu Cys Asn Cys Tyr Val Glu Thr Leu Leu
 130 135 140
 Gln Lys Ile Val Ser Gly Asn Ile Leu Asn Pro Glu Gly Thr Leu Phe
 145 150 155 160
 Leu Glu Asn Ala Ser Asp Glu Glu Ile Ala Cys Glu Gly Leu Thr Leu
 165 170 175
 Arg Arg Arg Arg Lys Leu Gly Lys Thr Tyr Leu Ala Glu Tyr Ile Val
 180 185 190
 Glu Lys Asp Pro
 195

<210>646

<211>262

<212>PRT

<213>Chlamydia pneumoniae

<400>646

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Ser Ser Tyr Ser Arg Arg Gln Leu Arg Phe Tyr Thr Gly Ser Leu Gln
1      5      10      15
Met His Ile Tyr Gly Leu Ala Asp Leu His Leu Ala Leu Gly Val Pro
20      25      30
Glu Lys Thr Met Glu Val Phe Gly Asp Pro Trp Ile Gly Tyr His Gln
35      40      45
Lys Ile Cys Ser Glu Trp Gln Ala Val Val His Pro Glu Asp Ile Val
50      55      60
Leu Leu Pro Gly Asp Ile Ser Trp Ala Met Asn Leu Ser Glu Ala His
65      70      75      80
Lys Asp Phe Ala Phe Ile Gly Asp Leu Pro Gly Thr Lys Tyr Met Ile
85      90      95
Arg Gly Asn His Asp Tyr Trp Ser Ser Ala Ser Thr Ser Lys Ile Leu
100      105      110
Gln Ala Leu Pro Pro Ser Leu Tyr Tyr Leu Asn Gln Gly Phe Ala Leu
115      120      125
Leu Thr Pro His Leu Ala Val Val Gly Val Arg Leu Trp Asp Ser Pro
130      135      140
Thr Ile Cys Val Lys Lys Glu Asn Phe Leu Thr Pro Ser Thr Gln Glu
145      150      155      160
Gln Ser Tyr Thr Glu Gln Asp Glu Lys Ile Phe Leu Arg Glu Leu Gly
165      170      175
Arg Leu Lys Arg Ala Phe Ala Ala Leu Pro Lys Glu Val Thr Glu Val
180      185      190
Ile Val Met Thr His Tyr Pro Pro Ile Ser Ser Asp Gly Thr Pro Gly
195      200      205
Pro Ile Ser Glu Phe Leu Glu Ala Asp Gly Arg Val Ser Leu Cys Leu
210      215      220
Phe Gly His Ile His Lys Val Gln Arg Pro Ile Asp Gly Phe Gly Asn
225      230      235      240
Ile Arg Gly Ile His Tyr Ile Leu Val Ala Ala Asp Tyr Val Asn Phe
245      250      255
Val Pro Gln Glu Val Met
260

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<210>647

<211>330

<212>PRT

<213>Chlamydia pneumoniae

<400>647

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Pro Asn Leu Val Ser Gly Tyr Ala Asp Ala Ile Arg Lys Asn Leu Leu
1      5      10      15
Tyr Phe Glu Asp Thr Glu Ile Glu Tyr Phe Leu Ile Leu Ser Gly Asp
20      25      30
Gln Leu Tyr Asn Met Asp Phe Arg Ser Ile Val Asp Thr Ala Ile Arg
35      40      45
Thr His Val Asp Met Val Leu Val Ala Gln Pro Ile Pro Glu Lys Asp
50      55      60
Ala Tyr Arg Met Gly Val Leu Asp Ile Asp Ser Glu Gly Lys Leu Ile
65      70      75      80
Asp Phe Tyr Glu Lys Pro Gln Glu Lys Glu Val Leu Lys Arg Phe Gln
85      90      95
Leu Ser Ser Glu Asp Arg Arg Ile His Lys Leu Thr Glu Asp Ser Gly
100      105      110
Asp Phe Leu Gly Ser Met Gly Ile Tyr Leu Phe Arg Arg Asp Ser Leu
115      120      125
Phe Ser Leu Leu Arg Glu Glu Glu Gly Asn Asp Phe Gly Lys His Leu
130      135      140
Ile Gln Ala Gln Met Lys Arg Gly Gln Val Gln Thr Leu Leu Tyr Asn
145      150      155      160
Gly Tyr Trp Ala Asp Ile Gly Thr Ile Glu Ser Tyr Tyr Glu Ala Asn

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 325
 330

<210>648

<211>225

<212>PRT

<213>Chlamydia pneumoniae

<400>648

Val Ser Phe Leu Tyr Phe Val Lys Asn Gly Arg Arg Leu Trp Arg Met
 1 5 10 15
 Met Asn Tyr Glu Asp Ala Lys Leu Arg Gly Gln Ala Val Ala Ile Leu
 20 25 30
 Tyr Gln Ile Gly Ala Ile Lys Phe Gly Lys His Ile Leu Ala Ser Gly
 35 40 45
 Glu Glu Thr Pro Leu Tyr Val Asp Met Arg Leu Val Ile Ser Ser Pro
 50 55 60
 Glu Val Leu Gln Thr Val Ala Thr Leu Ile Trp Arg Leu Arg Pro Ser
 65 70 75 80
 Phe Asn Ser Ser Leu Leu Cys Gly Val Pro Tyr Thr Ala Leu Thr Leu
 85 90 95
 Ala Thr Ser Ile Ser Leu Lys Tyr Asn Ile Pro Met Val Leu Arg Arg
 100 105 110
 Lys Glu Leu Gln Asn Val Asp Pro Ser Asp Ala Ile Lys Val Glu Gly
 115 120 125
 Leu Phe Thr Pro Gly Gln Thr Cys Leu Val Ile Asn Asp Met Val Ser
 130 135 140
 Ser Gly Lys Ser Ile Ile Glu Thr Ala Val Ala Leu Glu Glu Asn Gly
 145 150 155 160
 Leu Val Val Arg Glu Ala Leu Val Phe Leu Asp Arg Arg Lys Glu Ala
 165 170 175
 Cys Gln Pro Leu Gly Pro Gln Gly Ile Lys Val Ser Ser Val Phe Thr
 180 185 190
 Val Pro Thr Leu Ile Lys Ala Leu Ile Ala Tyr Gly Lys Leu Ser Ser
 195 200 205
 Gly Asp Leu Thr Leu Ala Asn Lys Ile Ser Glu Ile Leu Glu Ile Glu
 210 215 220

Ser

225

<210>649

<211>464

<212>PRT

<213>Chlamydia pneumoniae

<400>649

Met Lys Glu Glu Arg Ser Ser Glu Ile Leu Pro Arg Val Lys Glu Thr
 1 5 10 15
 Lys Lys His Ala Tyr Val Ser Met Gln Glu Lys Ser Cys Val Gly Glu

20 25
 Cys Ala Val Val Ala Ser Glu Ser Glu Glu Ala Glu Ser Val Thr Val
 35 40 45
 Thr Lys Ile Ala Lys Leu Gln Arg Met Gly Ile Glu Glu Leu Asn Ile
 50 55 60
 Leu Ala Arg Gln Tyr Gly Val Lys Asn Ile Gly Ser Leu Thr Lys Ser
 65 70 75 80
 Gln Val Val Phe Glu Ile Val Lys Ala Lys Ser Glu Arg Pro Asp Glu
 85 90 95
 Leu Leu Ile Gly Glu Gly Val Leu Glu Val Leu Pro Asp Gly Phe Gly
 100 105 110
 Phe Leu Arg Ser Pro Thr Tyr Asn Tyr Leu Pro Ser Ala Glu Asp Ile
 115 120 125
 Tyr Val Ser Pro Ala Gln Ile Arg Arg Phe Asp Leu Lys Lys Gly Asp
 130 135 140
 Thr Ile Ile Gly Thr Ile Arg Ser Pro Lys Glu Lys Glu Lys Tyr Phe
 145 150 155 160
 Ala Leu Leu Lys Val Asp Lys Ile Asn Gly Ser Thr Pro Asp Lys Ala
 165 170 175
 Lys Glu Arg Val Leu Phe Glu Asn Leu Thr Pro Leu Tyr Pro Asn Gln
 180 185 190
 Arg Ile Val Met Glu Met Gly Lys Asp His Leu Ala Glu Arg Val Leu
 195 200 205
 Asp Leu Thr Ala Pro Ile Gly Lys Gly Gln Arg Gly Leu Ile Val Ala
 210 215 220
 Pro Pro Arg Ser Gly Lys Thr Val Ile Leu Gln Ser Ile Ala His Ala
 225 230 235 240
 Ile Ala Val Asn Asn Pro Asp Ile Val Leu Ile Val Leu Leu Ile Asp
 245 250 255
 Glu Arg Pro Glu Glu Val Thr Asp Met Ile Arg Gln Val Arg Gly Glu
 260 265 270
 Val Val Ala Ser Thr Phe Asp Glu Gln Pro Glu Arg His Ile Gln Val
 275 280 285
 Ala Glu Met Val Ile Glu Lys Ala Arg Arg Leu Val Glu His Gly Asn
 290 295 300
 Asp Val Val Ile Leu Leu Asp Ser Ile Thr Arg Leu Ala Arg Ala Tyr
 305 310 315 320
 Asn Thr Val Gln Pro His Ser Gly Lys Ile Leu Thr Gly Gly Val Asp
 325 330 335
 Ala Ser Ala Leu His Lys Pro Lys Arg Phe Phe Gly Ala Ala Arg Asn
 340 345 350
 Ile Glu Gly Gly Gly Ser Leu Thr Ile Leu Ala Thr Ala Leu Ile Asp
 355 360 365
 Thr Gly Ser Arg Met Asp Glu Val Ile Phe Glu Glu Phe Lys Gly Thr
 370 375 380
 Gly Asn Met Glu Leu Val Leu Asp Arg Arg Leu Ser Asp Arg Arg Thr
 385 390 395 400
 Tyr Pro Ala Ile Asp Leu Ile Lys Ser Gly Thr Arg Lys Glu Glu Leu
 405 410 415
 Leu Tyr His Pro Ser Glu Leu Glu Arg Val Tyr Leu Phe Arg Gln Ala
 420 425 430
 Ile Ala Asp Leu Thr Thr Ile Asp Ala Met His Leu Leu Leu Gly Arg
 435 440 445
 Leu Lys Lys Thr Asn Ser Asn Ala Glu Phe Leu Leu Ser Leu Lys Glu
 450 455 460
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 <212>PRT
 <213>Chlamydia pneumoniae
 <400>650
 Arg Arg Asn Arg Arg Asp Ala Lys Thr Ser Glu Arg Glu Asp Gly Il
 1 5 10 15
 Ser Tyr Asp Phe Ile Arg Ser Tyr Ser Cys Glu Tyr Leu Asn Trp Lys
 20 25 30

Lys Leu Gly Arg Met Leu Lys Leu Leu Lys Val Ser Ile Thr Gly Asp
 35 40 45
 Leu Ser Ser Gly Lys Thr Glu Ala Cys Gln Val Phe Gln Glu Leu Gly
 50 55 60
 Ala Tyr Val Val Ser Ala Asp Glu Ile Ser His Ser Phe Leu Ile Pro
 65 70 75 80
 His Thr Arg Ile Gly Arg Arg Val Ile Asp Leu Leu Gly Ser Asp Val
 85 90 95
 Val Val Asp Gly Ala Phe Asp Ala Gln Ala Ile Ala Ala Lys Val Phe
 100 105 110
 Tyr Asn Ser Val Leu Leu Gln Gly Leu Glu Ala Ile Leu His Pro Glu
 115 120 125
 Val Cys Arg Ile Ile Glu Glu Gln Tyr His Gln Ser Ile Gln Asp Gly
 130 135 140
 Asn Tyr Pro Phe Phe Val Ala Glu Val Pro Leu Leu Tyr Glu Ile His
 145 150 155 160
 Tyr Ala Lys Trp Phe Asp Ser Val Ile Leu Val Met Ala Asn Glu Asp
 165 170 175
 Ile Arg Arg Glu Arg Phe Met Lys Lys Thr Gly Arg Ser Ser Glu Asp
 180 185 190
 Phe Asp Gln Arg Cys Ser Arg Phe Leu Asn Val Glu Glu Lys Leu Ala
 195 200 205
 Gln Ala Asp Val Val Val Glu Asn Asn Gly Thr Lys Lys Glu Leu His
 210 215 220
 Gln Lys Ile Glu Glu Tyr Phe Tyr Ala Leu Lys Gly Ala Leu
 225 230 235
 <210>651
 <311>870
 <312>PRT
 <213>Chlamydia pneumoniae
 <400>651
 Met Lys Lys Leu Phe Val Leu Asp Ala Ser Gly Phe Ile Phe Arg Ala
 1 5 10 15
 Tyr Phe Ala Leu Pro Glu Met Lys Asn His Gln Gly Gln Ala Thr Gln
 20 25 30
 Ala Val Phe Gly Phe Ile Arg Ser Leu Asn Lys Leu Ile Lys Glu Phe
 35 40 45
 Ser Pro Glu Tyr Met Ile Ser Val Phe Asp Gly Pro Asn Asn Lys Gln
 50 55 60
 Ser Arg Gln Ala Ile Tyr Ala Asp Tyr Lys Ser Asn Arg Gln Lys Lys
 65 70 75 80
 Phe Glu Asp Ile Pro Pro Gln Ile Ala Leu Val Lys Glu Tyr Cys Ser
 85 90 95
 Leu Ile Gly Leu Ala Tyr Leu Glu Lys Glu Ser Val Glu Ala Asp Asp
 100 105 110
 Val Ile Ala Ser Ile Ala Lys Lys Ala Arg Glu Glu Asn Tyr Lys Val
 115 120 125
 Tyr Val Cys Thr Ala Asp Lys Asp Leu Leu Gln Leu Val Asn Asp His
 130 135 140
 Val Val Ala Trp Asn Pro Trp Ala Asp Gln Gly Val Val Gly Ile Ser
 145 150 155 160
 Glu Val Ile Glu Arg Tyr Gly Ile Pro Pro Gly Asn Ile Pro Asp Tyr
 165 170 175
 Leu Ala Leu Val Gly Asp Ser Ser Asp Asn Ile Pro Gly Leu Pro Gly
 180 185 190
 Cys Gly Pro Lys Lys Ala Ala Ala Leu Leu Lys Gln Phe Gly Ser Val
 195 200 205
 Glu Gly Leu Leu Glu Asn Leu Asp Ala Val Lys Gly Leu Ser Gln Thr
 210 215 220
 Met Leu Ser Glu Arg Gln Glu Thr Leu Lys Leu Ser Lys Arg Leu Ala
 225 230 235 240
 Leu Leu Asp Ser Asn Ile Pro Ile Pro Val Pro Ile Glu Ser Leu Thr
 245 250 255
 Phe Pro Gln His Pro Val Asp Glu Glu Lys Leu Ile His Phe Tyr Ile

260 265
 Gln Gln Gly Phe Lys Thr Leu Val Pro Ser Lys Gln Thr Glu Ala Ala
 275 280 285
 Thr Val Asp Val Gln Ile Ile Lys Asp Ala Glu Ser Leu Thr Asn Ile
 290 295 300
 Leu Asn Leu Val Gln Gly Gly Asp Ile Ala Phe Ala Val Ala Tyr Thr
 305 310 315 320
 Gly Asn His Leu Leu Ser Leu Lys Leu Glu Gly Leu Ala Leu Thr Gln
 325 330 335
 Gly Ser Gly Val Phe Phe Ile Ala Leu Glu Glu Glu Gly Thr Lys Ile
 340 345 350
 Leu Pro Ile Leu Lys Asp Phe Phe Leu Arg Glu Asp Leu Thr Phe Tyr
 355 360 365
 Gly Tyr Asn Leu Lys Arg Asp Cys His Ala Leu Leu Asn Ala Gly Ile
 370 375 380
 Val Ile Arg Glu Ile Ser Tyr Asp Leu Ala Leu Ala Glu His Leu Thr
 385 390 395 400
 Asn Gly Gly Gly Lys Ile Ser Phe Gln Ser Leu Leu Val Asn His Gly
 405 410 415
 Phe Thr Glu Thr Ala His Arg Phe Ala Lys Glu Trp Gly Asn Ser Gly
 420 425 430
 Leu Pro Ile Gly Arg Leu Pro Glu Gln Pro Glu Gln Tyr Phe Gly Glu
 435 440 445
 Phe Val Ala Tyr Leu Pro Ile Ile Lys Asp Ala Ile Leu Glu Glu Ile
 450 455 460
 Asn Arg Lys Asn Leu Asn His Ile Leu Ser Asp Ile Glu Met Pro Leu
 465 470 475 480
 Glu Lys Val Leu Phe Ser Met Glu Arg Ala Gly Val Pro Leu Asp Val
 485 490 495
 Glu Glu Leu Ala Ile Leu Glu Ala Leu Phe Glu Thr Glu Leu Ala Val
 500 505 510
 Leu Thr Glu Glu Ile Tyr Asp Leu Ser Gly Arg Pro Phe Asn Ile Lys
 515 520 525
 Ser Pro Lys Gln Leu Ser Asp Ile Leu Tyr Asn Glu Leu Gly Leu Arg
 530 535 540
 Pro Ile Asp Lys Ala Lys Ser Thr Arg Ala Glu Val Leu Glu Ala Leu
 545 550 555 560
 Arg Ser Glu His Pro Ile Ile Glu Lys Leu Leu Ala Phe Arg Thr Ile
 565 570 575
 Glu Lys Leu Leu Ser Thr Tyr Val Lys Ala Leu Pro Lys Gln Val Asp
 580 585 590
 Ser His Thr Gln Arg Ile His Pro Ser Phe Asp Gln Thr Gly Ala Val
 595 600 605
 Thr Gly Arg Leu Ala Cys Arg Asp Pro Asn Leu Gln Asn Ile Pro Ile
 610 615 620
 Arg Ser Glu Arg Gly Ile Leu Leu Arg Lys Ala Phe Arg Leu Ser Glu
 625 630 635 640
 Lys Asn Ser Tyr Phe Leu Ser Ala Asp Tyr Ser Gln Ile Glu Leu Arg
 645 650 655
 Phe Leu Ala His Leu Ser Gln Asp Lys Ser Leu Lys Phe Ala Phe Glu
 660 665 670
 Ser Gly Glu Asp Ile His Ala Phe Thr Ala Ser Gln Val Phe His Val
 675 680 685
 Pro Leu Glu Gln Val Ser Lys Glu Gln Arg Met Gln Ala Lys Thr Val
 690 695 700
 Asn Phe Gly Ile Val Tyr Gly Gln Gln Ala Phe Gly Leu Ala Lys Val
 705 710 715 720
 Leu Lys Ile Ser Ile Gly Glu Val Gln Glu Leu Ile Gln Ala Tyr Phe
 725 730 735
 Ser Arg Tyr Pro Glu Ile Ala His Phe Val Glu Glu Thr Ile Gln Gln
 740 745 750
 Ala Ala Lys Asp Leu Arg Val Thr Thr Met Leu Gly Arg Glu Arg Ile
 755 760 765
 Ile Asp Ser Trp Asn Glu Phe Pro Gly Ser Arg Ala Ala Ser Gly Arg

770	775	780
Phe Ala Val Asn Thr Arg Ile Gln Gly Ser Ala Ala Glu Leu Ile Lys		
785	790	795
Leu Ala Met Leu Asp Ile Ser Gln Ala Ile Lys Gln Gln Gln Met Lys		800
	805	810
Ser Arg Met Leu Leu Gln Ile His Asp Glu Leu Leu Phe Glu Val Pro		815
	820	825
Glu Glu Glu Ile Glu Glu Met Gln Arg Leu Val Arg Glu Lys Met Glu		830
	835	840
Ser Ala Met Thr Leu Ser Val Pro Ile Val Val Asn Ile Leu Ile Gly		845
	850	855
Lys Asn Trp Ala Glu Cys		860
865	870	

<210>652

<211>333

<212>PRT

<213>Chlamydia pneumoniae

<400>652

Met Lys Thr Leu Trp His Phe Val Ser Lys Ala Phe Leu Ser Ile Val		
1	5	10
Gly Leu Cys Cys Gly Val Val Leu Ala Phe Val Val Ile Phe Ala Leu		15
	20	25
Ile Ala Ser Ser Leu Gly Asn Gly Asp Ala Thr Phe Val Ser Leu Pro		30
	35	40
Asp Ala Gln Gly Glu Val Lys Asp Leu Gly Lys Thr Ala Pro Ile Ile		45
	50	55
Ala Val Ile Glu Met Lys Asp Val Ile Ala Ser Ser Lys Asn Thr Ala		60
	65	70
Lys Thr Ile Gln Asn Ile Leu Glu Gly Phe Glu Lys Ala Pro Leu Lys		75
	85	90
Asp Arg Val Lys Gly Ile Val Ile Asp Met Asp Cys Pro Gly Gly Glu		95
	100	105
Val Phe Glu Ile Asp Arg Ile Tyr Ser Met Leu Arg Phe Trp Lys Glu		110
	115	120
Arg Lys Gly Phe Pro Ile Tyr Ile Tyr Val Asn Gly Leu Cys Ala Ser		125
	130	135
Gly Gly Tyr Tyr Val Ser Cys Ala Ala Thr Lys Ile Tyr Ala Thr Ser		140
	145	150
Ser Ser Leu Ile Gly Ser Ile Gly Val Arg Ser Gly Pro Phe Phe Asn		155
	165	170
Val Lys Glu Gly Leu Asn Arg Tyr Gly Val Glu Ser Asp Leu Leu Thr		175
	180	185
Ala Gly Lys Asp Lys Ala Pro Met Asn Pro Tyr Thr Pro Trp Thr Ser		190
	195	200
His Asp Arg Glu Glu Arg Gln Ala Thr Leu Asp Phe Leu Tyr Gly Gln		205
	210	215
Phe Val Asp Ile Val Thr Gln Asn Arg Pro Leu Leu Thr Lys Glu Lys		220
	225	230
Leu Val His Thr Leu Gly Ala Arg Ile Phe Ser Pro Glu Lys Ala Lys		235
	245	250
Gln Glu Gly Tyr Ile Asp Val Val Gly Ala Thr Lys Glu Gln Val Leu		255
	260	265
Gln Asp Ile Val Ala Val Cys Lys Ile Glu Asp Asn Tyr Arg Val Ile		270
	275	280
Gly Ser Gly Gly Asp Gly Trp Trp Lys Arg Val Ala Ser Ala Ala Ala		285
	290	295
Ser Ser Pro Leu Val Thr Gly Met Ile Lys His Asp Ile Leu Pro Leu		300
	305	310
Ser His Asp Ala Ala Tyr Ile Pro Pro Tyr Leu Ala Leu		315
	325	330

<210>653

<211>551

<212>PRT

<213>Chlamydia pneumoniae

<400>653

Val Phe Ile Arg His Lys Val Gly Lys Glu Phe Met Cln Ser Ser Glu
 1 5 10 15
 Val Lys Pro Phe Ser Arg Leu Arg Ala Tyr Leu Cys Pro Ile Tyr Lys
 20 25 30
 Ser Glu Phe Ser Lys Phe Val Pro Leu Phe Leu Leu Ala Phe Phe Val
 35 40 45
 Gly Phe Asn Tyr Cys Leu Leu Lys Asn Met Lys Asp Thr Leu Val Ile
 50 55 60
 Val Gly Ser Asp Ala Gly Ala Glu Val Ile Pro Phe Leu Lys Val Trp
 65 70 75 80
 Gly Ile Val Pro Gly Ala Val Ile Val Thr Met Val Tyr Gly Trp Leu
 85 90 95
 Gly Ser Arg Tyr Pro Arg Asp Thr Val Phe Tyr Cys Phe Met Ala Ala
 100 105 110
 Phe Leu Gly Phe Phe Phe Leu Phe Ala Val Ile Ile Tyr Pro Val Gly
 115 120 125
 Asp Ser Leu His Leu Asn Ser Leu Ala Asp Lys Leu Gln Glu Leu Leu
 130 135 140
 Pro Gln Gly Leu Arg Gly Phe Ile Val Met Val Arg Tyr Trp Ser Tyr
 145 150 155 160
 Ser Ile Tyr Tyr Val Met Ser Glu Leu Trp Ser Ser Val Val Leu Ser
 165 170 175
 Met Leu Phe Trp Gly Leu Ala Asn Gln Ile Thr Thr Ile Thr Glu Ala
 180 185 190
 Gly Arg Phe Tyr Ala Leu Ile Asn Thr Gly Leu Asn Leu Ser Ser Ile
 195 200 205
 Cys Ala Gly Glu Ile Ser Tyr Trp Met Gly Lys Gln Thr Phe Val Ala
 210 215 220
 Tyr Ser Phe Ala Cys Asp Ser Trp His Ser Val Met Leu Asn Leu Thr
 225 230 235 240
 Met Leu Ile Thr Cys Ser Gly Leu Ile Met Ile Trp Leu Tyr Arg Arg
 245 250 255
 Ile His His Leu Thr Ile Asp Thr Ser Ile Pro Pro Ser Arg Arg Val
 260 265 270
 Leu Ala Glu Gly Ala Ala Thr Ala Asn Leu Lys Glu Lys Lys Lys
 275 280 285
 Pro Lys Ala Lys Ala Arg Asn Leu Phe Leu His Leu Ile Gln Ser Arg
 290 295 300
 Tyr Leu Leu Gly Leu Ala Ile Ile Val Leu Ser Tyr Asn Leu Val Ile
 305 310 315 320
 His Leu Phe Glu Val Val Trp Lys Asp Gln Val Ser Gln Ile Tyr Ser
 325 330 335
 Ser His Val Glu Phe Asn Gly Tyr Met Ser Arg Ile Thr Thr Leu Ile
 340 345 350
 Gly Val Val Ser Val Leu Ala Ala Val Leu Leu Thr Gly Gln Cys Ile
 355 360 365
 Arg Lys Trp Gly Trp Thr Val Gly Ala Leu Val Thr Pro Leu Val Met
 370 375 380
 Leu Val Ser Gly Leu Leu Phe Phe Gly Thr Ile Phe Ala Ala Lys Arg
 385 390 395 400
 Asp Ile Ser Ile Phe Gly Gly Val Leu Gly Met Thr Pro Leu Ala Leu
 405 410 415
 Ala Ala Trp Thr Gly Gly Met Gln Asn Val Leu Ser Arg Gly Thr Lys
 420 425 430
 Phe Thr Phe Phe Asp Gln Thr Lys Glu Met Ala Phe Ile Pro Leu Ser
 435 440 445
 Pro Glu Asp Lys Asn His Gly Lys Ala Ala Ile Asp Gly Val Val Ser
 450 455 460
 Arg Ile Gly Lys Ser Gly Gly Ser Leu Ile Tyr Gln Gly Leu Leu Val
 465 470 475 480
 Ile Phe Ser Ser Val Ala Ala Ser Leu Asn Val Ile Ala Leu Val Leu
 485 490 495
 Leu Ile Ile Met Val Val Trp Ile Ala Val Val Ala Tyr Ile Gly Lys

500 505 510
 Glu Tyr Tyr Ser Arg Ala Ala Asp Ala Val Ala Thr Leu Lys Gln Pro
 515 520 525
 Lys Glu Pro Ser Ser Ser Ile Val Arg Glu Ala Gln Glu Ser Val Glu
 530 535 540
 Gln Glu Glu Met Ala Val Leu
 545 550
 <210>654
 <211>377
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>654
 Ile Thr Leu Ala Glu Phe Ala Gly Thr Xaa Ala Tyr Leu Glu Glu Tyr
 1 5 10 15
 Val Asp Ile Ile Arg Ser Lys Ser Ile Leu Arg Lys Met Ile Ser Thr
 20 25 30
 Ala Lys Glu Ile Glu Lys Arg Ala Leu Glu Gln Pro Lys Asn Val Ala
 35 40 45
 Glu Ala Leu Asp Glu Ala Gln Asn Ser Phe Phe Lys Ile Ser Gln Ser
 50 55 60
 Thr Ser Val Ser Gln Tyr Thr Leu Val Ala Asp Lys Leu Arg Gly Leu
 65 70 75 80
 Thr Thr Thr Thr Asp Lys Pro Tyr Leu Val Gln Leu Gln Glu Arg Gln
 85 90 95
 Glu Leu Phe Leu Gln Asn Ala Gln Gly Asp Asn Lys Ser Phe Phe Thr
 100 105 110
 Gly Ile Pro Thr His Phe Ile Asp Leu Asp Gln Leu Ile His Gly Phe
 115 120 125
 Ser Pro Ser Asn Leu Met Ile Leu Ala Ala Arg Pro Ala Met Gly Lys
 130 135 140
 Thr Ala Leu Ala Leu Asn Ile Ala Glu Asn Leu Cys Phe Gln Asn Arg
 145 150 155 160
 Leu Pro Ile Gly Ile Phe Ser Leu Glu Met Thr Val Asp Gln Leu Ile
 165 170 175
 His Arg Met Ile Cys Ser Arg Ser Glu Val Asp Ser Lys Lys Ile Ser
 180 185 190
 Ile Gly Asp Leu Ser Gly His Asp Phe Gln Arg Ile Val Ser Val Ile
 195 200 205
 Asn Glu Met Gln Glu His Thr Leu Leu Ile Asp Asp Gln Pro Gly Leu
 210 215 220
 Lys Val Ser Asp Leu Arg Ala Arg Ala Arg Met Lys Glu Ser Tyr
 225 230 235 240
 Asp Ile Gln Phe Leu Ile Ile Asp Tyr Leu Gln Leu Leu Ser Gly Ser
 245 250 255
 Gly Thr Leu Arg Ala Thr Glu Ser Arg Gln Thr Glu Ile Ser Glu Ile
 260 265 270
 Ser Arg Met Leu Lys Thr Leu Ala Arg Glu Leu Asn Ile Pro Ile Leu
 275 280 285
 Cys Leu Ser Gln Leu Ser Arg Lys Val Glu Asp Arg Ala Asn His Arg
 290 295 300
 Pro Met Met Ser Asp Leu Arg Glu Ser Gly Ser Ile Glu Gln Asp Ser
 305 310 315 320
 Asp Leu Val Met Phe Leu Leu Arg Arg Glu Tyr Tyr Asp Pro Asn Asp
 325 330 335
 Lys Pro Gly Thr Ala Glu Leu Ile Ile Ala Lys Asn Arg His Gly Ser
 340 345 350
 Ile Gly Ser Val Pro Leu Val Phe Glu Lys Glu Leu Ala Arg Phe Arg
 355 360 365
 Asn Tyr Ser Ala Phe Glu Cys Ile Ser
 370 375
 <210>655
 <211>611
 <212>PRT
 <213>Chlamydia pneumoniae

<400>655

Met Trp Thr His Pro Ile Ala Tyr Asp Val Ile Val Val Gly Ala Gly
 1 5 10 15
 His Ala Gly Cys Glu Ala Ala Tyr Cys Ser Ala Lys Met Gly Val Ser
 20 25 30
 Val Leu Met Leu Thr Ser Asn Leu Asp Thr Ile Ala Lys Leu Ser Cys
 35 40 45
 Asn Pro Ala Val Gly Gly Ile Gly Lys Gly His Ile Val Arg Glu Ile
 50 55 60
 Asp Ala Leu Gly Gly Ile Met Ala Glu Val Thr Asp Gln Ser Gly Ile
 65 70 75 80
 Gln Phe Arg Ile Leu Asn Gln Thr Lys Gly Pro Ala Val Arg Ala Pro
 85 90 95
 Arg Ala Gln Val Asp Lys Gln Leu Tyr His Ile His Met Lys Arg Leu
 100 105 110
 Leu Glu Asn Thr Pro Gly Leu His Ile Met Gln Ala Thr Val Glu Ser
 115 120 125
 Leu Leu Asp Lys Glu Gly Val Ile Ser Gly Val Thr Thr Lys Glu Gly
 130 135 140
 Trp Met Phe Ser Gly Lys Thr Val Val Leu Ser Ser Gly Thr Phe Met
 145 150 155 160
 Arg Gly Leu Ile His Ile Gly Asp Arg Asn Phe Ser Gly Gly Arg Leu
 165 170 175
 Gly Asp Pro Ser Ser Gln Gly Leu Ser Glu Asp Leu Lys Lys Arg Gly
 180 185 190
 Phe Pro Ile Ser Arg Leu Lys Thr Gly Thr Pro Pro Arg Leu Leu Ala
 195 200 205
 Ser Ser Ile Asn Phe Ser Cys Met Glu Glu Gln Pro Gly Asp Leu Gly
 210 215 220
 Val Gly Phe Val His Arg Thr Glu Pro Phe Gln Pro Pro Leu Pro Gln
 225 230 235 240
 Leu Ser Cys Phe Ile Thr His Thr Met Glu Lys Thr Lys Ala Ile Ile
 245 250 255
 Ser Ala Asn Leu His Arg Ser Ala Leu Tyr Gly Gly Cys Ile Glu Gly
 260 265 270
 Val Gly Pro Arg Tyr Cys Pro Ser Ile Glu Asp Lys Ile Val Lys Phe
 275 280 285
 Ser Asp Lys Glu Arg His His Val Phe Leu Glu Pro Glu Gly Leu His
 290 295 300
 Thr Gln Glu Ile Tyr Ala Asn Gly Leu Ser Thr Ser Met Pro Phe Asp
 305 310 315 320
 Val Gln Tyr Asp Met Ile Arg Ser Val Leu Gly Leu Glu Asn Ala Ile
 325 330 335
 Ile Thr Arg Pro Ala Tyr Ala Ile Glu Tyr Asp Tyr Ile His Gly Asn
 340 345 350
 Val Ile His Pro Thr Leu Glu Ser Lys Leu Ile Glu Gly Leu Phe Leu
 355 360 365
 Cys Gly Gln Ile Asn Gly Thr Gly Tyr Glu Glu Ala Ala Ala Gln
 370 375 380
 Gly Leu Ile Ala Gly Ile Asn Ala Val Asn Lys Val Phe Asn Arg Pro
 385 390 395 400
 Pro Phe Ile Pro Ser Arg Gln Glu Ser Tyr Ile Gly Val Met Leu Asp
 405 410 415
 Asp Leu Thr Thr Gln Ile Leu Asp Glu Pro Tyr Arg Met Phe Thr Gly
 420 425 430
 Arg Ala Glu His Arg Leu Leu Leu Arg Gln Asp Asn Ala Cys Ala Arg
 435 440 445
 Leu Ser His Tyr Gly Tyr Glu Leu Gly Leu Leu Ser Glu Glu Arg Tyr
 450 455 460
 Glu Leu Val Lys Lys Gln Asn Gln Leu Leu Glu Glu Glu Lys Val Arg
 465 470 475 480
 Leu Gln Lys Thr Phe Arg Gln Tyr Gly Gln Ser Val Val Ser Leu Ala
 485 490 495
 Lys Ala Leu Ser Arg Pro Glu Val Ser Tyr Asp Met Leu Arg Glu Ala

500 505 510
 Phe Pro Asn Asp Ile Arg Asp Leu Gly Ala Val Leu Asn Ala Ser Leu
 515 520 525
 Glu Met Glu Ile Lys Tyr Ser Gly Tyr Ile Asp Arg Gln Lys Ile Leu
 530 535 540
 Ile Gln Ser Leu Glu Lys Ala Glu Ser Leu Leu Ile Pro Glu Asp Leu
 545 550 555 560
 Asp Tyr Lys Gln Ile Thr Ala Leu Ser Leu Glu Ala Gln Glu Lys Leu
 565 570 575
 Ala Lys Phe Thr Pro Arg Thr Leu Gly Ser Ala Ser Arg Ile Ser Gly
 580 585 590
 Ile Ala Ser Ala Asp Ile Gln Val Leu Met Ile Ala Leu Lys Lys His
 595 600 605
 Ala His His
 610

<210>656

<211>217

<212>PRT

<213>Chlamydia pneumoniae

<400>656

Lys Asn Met Pro Thr Thr Asn Cys Ile Phe Leu Asp Leu Arg Gly His
 1 5 10 15
 Ser Ile Leu His Gln Leu Gln Ile Glu Glu Ala Leu Leu Arg Val Ala
 20 25 30
 Asn Gln Asn Phe Cys Ile Ile Asn Ser Gly Ala Lys Asp Ser Ile Val
 35 40 45
 Leu Gly Ile Ser Arg Asn Leu Asn Gln Asp Val His Ile Ser Arg Ala
 50 55 60
 Gln Ala Asp His Ile Pro Ile Ile Arg Arg Tyr Ser Gly Gly Gly Thr
 65 70 75 80
 Val Phe Ile Asp Ser Asn Thr Leu Met Val Ser Trp Ile Met Asn Ser
 85 90 95
 Ser Glu Ala Ser Ala Gln Pro Gln Glu Leu Leu Ala Trp Thr Tyr Gly
 100 105 110
 Ile Tyr Ser Pro Leu Leu Pro Asn Thr Phe Ser Ile Arg Glu Asn Asp
 115 120 125
 Tyr Val Leu Gly His Lys Lys Ile Gly Gly Asn Ala Gln Tyr Ile Gln
 130 135 140
 Arg His Arg Trp Val His His Thr Thr Phe Leu Trp Asp Ile Asp Leu
 145 150 155 160
 Asp Lys Leu Ser Tyr Tyr Leu Pro Ile Pro Gln Gln Gln Pro Thr Tyr
 165 170 175
 Arg Asn Gln Arg Ser His Glu Glu Phe Leu Thr Thr Leu Arg Pro Trp
 180 185 190
 Phe Pro Ser Arg Asp Asp Phe Leu Glu Arg Ile Lys Ala Ser Gly Ser
 195 200 205
 Leu Leu Phe Tyr Leu Gly Arg Ile Ser
 210 215

<210>657

<211>144

<212>PRT

<213>Chlamydia pneumoniae

<400>657

Met Glu Gln Thr Leu Ser Ile Ile Lys Pro Asp Ser Val Ser Lys Ala
 1 5 10 15
 His Ile Gly Glu Ile Leu Ser Ile Phe Glu Gln Ser Gly Leu Arg Ile
 20 25 30
 Ala Ala Met Lys Met Met His Leu Ser Gln Thr Glu Ala Glu Gly Phe
 35 40 45
 Tyr Phe Val His Arg Glu Arg Pro Phe Phe Gln Glu Leu Val Asp Phe
 50 55 60
 Met Val Ser Gly Pro Val Val Val Leu Val Leu Glu Gly Ala Asn Ala
 65 70 75 80
 Val Ser Arg Asn Arg Glu Leu Met Gly Ala Thr Asn Pro Ala Glu Ala

85 90 95
 Ala Ser Gly Thr Ile Arg Ala Lys Phe Gly Glu Ser Ile Gly Val Asn
 100 105 110
 Ala Val His Gly Ser Asp Thr Leu Glu Asn Ala Ala Val Glu Ile Ala
 115 120 125
 Tyr Phe Phe Ser Lys Ile Glu Val Val Asn Ala Ser Lys Pro Leu Val
 130 135 140
 <210>658
 <211>207
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>658
 Met Tyr Asp Tyr Ile Arg Gly Thr Leu Thr Tyr Val His Thr Gly Ala
 1 5 10 15
 Ile Val Ile Glu Cys Gln Gly Ile Gly Tyr His Ile Ala Ile Thr Glu
 20 25 30
 Arg Trp Ala Ile Glu Cys Ile Arg Ala Leu His Gln Asp Phe Leu Val
 35 40 45
 Phe Thr His Val Ile Phe Arg Glu Thr Glu His Leu Leu Tyr Gly Phe
 50 55 60
 His Ser Arg Glu Glu Arg Glu Cys Phe Arg Ile Leu Ile Ser Phe Ser
 65 70 75 80
 Gly Ile Gly Pro Lys Leu Ala Leu Ala Ile Leu Asn Ala Leu Pro Leu
 85 90 95
 Lys Val Leu Cys Ser Val Val Arg Ser Glu Asp Ile Arg Ala Leu Ala
 100 105 110
 Ser Val Ser Gly Ile Gly Lys Lys Thr Ala Glu Lys Leu Met Val Glu
 115 120 125
 Leu Lys Gln Lys Leu Pro Asp Leu Leu Pro Leu Asp Ser Arg Val Glu
 130 135 140
 Thr Ser Gln Thr His Thr Thr Ser Ser Cys Leu Glu Glu Gly Ile Gln
 145 150 155 160
 Ala Leu Ala Ala Leu Gly Tyr Ser Lys Ile Ala Ala Glu Arg Met Ile
 165 170 175
 Ala Glu Ala Ile Lys Asp Leu Pro Glu Gly Ser Ser Leu Thr Asp Ile
 180 185 190
 Leu Pro Ile Ala Leu Lys Lys Asn Phe Ser Gly Val Asn Lys Asp
 195 200 205
 <210>659
 <211>168
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>659
 Val Ser Glu Leu Ile Ile Gly Val Asp Pro Gly Thr Ile Val Ala Gly
 1 5 10 15
 Tyr Ala Ile Ile Ala Val Glu Gln Arg Tyr Gln Leu Arg Pro Tyr Ser
 20 25 30
 Tyr Gly Ala Ile Arg Leu Ser Ser Asp Met Pro Leu Pro Met Arg Tyr
 35 40 45
 Lys Thr Leu Phe Glu Gln Leu Ser Gly Val Leu Asp Asp Thr Gln Pro
 50 55 60
 Asn Ala Met Val Leu Glu Thr Gln Phe Val Asn Lys Asn Pro Gln Ser
 65 70 75 80
 Thr Met Lys Leu Ala Met Ala Arg Gly Ile Val Leu Leu Ala Ala Ala
 85 90 95
 Gln Arg Asp Ile Leu Ile Phe Glu Tyr Ala Pro Asn Val Ala Lys Lys
 100 105 110
 Ala Val Val Gly Lys Gly His Ala Ser Lys Arg Gln Val Gln Val Met
 115 120 125
 Val Ser Lys Ile Leu Asn Val Pro Glu Val Leu His Pro Ser A n Glu
 130 135 140
 Asp Ile Ala Asp Ala Phe Ala Leu Ala Ile Cys His Thr His Val Ala
 145 150 155 160
 Arg Ser Pro Leu Cys Gly Val Arg

<210>660

<211>323

<212>PRT

<213>Chlamydia pneumoniae

<400>660

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Arg Tyr Ser Val Arg Leu Leu Ser Ile Leu Lys Leu His Leu Phe Ser
 1          5          10          15
Leu Arg Ser Ser Ser Ser Leu Ser Pro His Tyr Tyr His Ser Cys Ser
          20          25          30
Arg Ser Met Leu His Leu Leu Cys Arg Trp Lys Asp Ala Asp Ile Met
          35          40          45
Gln Trp Gln Gln Ile Cys Asn Ile Leu Ser Gly Val Cys Ser Arg Met
          50          55          60
Ser Gly Lys Leu Val Ser Leu Gln Lys Glu Thr Gln Asp Ser Cys His
          65          70          75          80
Gln Glu His Glu Arg Ile His Leu Gln Tyr Arg Glu Gln Leu Ser Ala
          85          90          95
Leu Glu Glu Glu Tyr Arg Arg Arg Glu Glu Ala Lys Asn Gln Asp Leu
          100          105          110
Glu Lys Leu Gln Gln Glu Asn Thr Trp Leu Gln Asn Arg Leu Ala Glu
          115          120          125
Lys Leu Gln Gln Ile Arg His Gln Ser Asp Ile Ile Asp Glu Ile Lys
          130          135          140
Lys Glu Leu Leu Gln Ser Val Gln Arg Thr Glu Ile Ser Glu Gly Arg
          145          150          155          160
Arg Leu Cys Tyr Glu His Lys Ile Lys Gln Leu Glu Glu Gln Leu Gln
          165          170          175
Arg Tyr Val Ser Gln His Gly Ala Pro Ser Ile Glu Ile Glu Glu Asp
          180          185          190
Lys Ser Ser Ala Ala Tyr Ala Glu Ile Asn Arg Leu Lys Lys Ser Leu
          195          200          205
Ile Asp Leu Gln Gln Glu Lys Asp Ile Tyr Ile Lys Thr Tyr His Ser
          210          215          220
Gln Ile Ala Lys Leu Arg Glu Lys Leu Gln Arg Gln Glu Gly Ala Gln
          225          230          235          240
Thr Ser Ser Glu Val Cys Ser Ile Glu Lys Leu Thr Glu Val Gln Thr
          245          250          255
Asp Leu Ala Glu Lys Lys Lys Ala Ile Ala Leu Leu Gln Asp Ile Val
          260          265          270
Glu Asp Gln Tyr Cys Gln Leu Arg Asp Leu His Lys Glu Lys Gly Met
          275          280          285
Ala Met Pro Ser Asn Thr Lys Leu Asp His Leu Lys Gly Leu Leu Gly
          290          295          300
Lys Glu Pro Glu Ser Glu Val Asp Val Val Phe Ser Glu Ser Lys Ser
          305          310          315          320
Leu Gly Ser

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<210>661

<211>282

<212>PRT

<213>Chlamydia pneumoniae

<400>661

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Lys Gly Tyr Asn Tyr Val Tyr Phe Thr Arg Asp Pro Val Ile Glu Thr
 1          5          10          15
Val Ile Thr Ser Arg Glu Gly Tyr Lys Leu Ser Val Arg Asn Thr Lys
          20          25          30
His Phe Ser Gln Asp Pro Phe Met Val Glu Ala Ile Glu Val Ile Ser
          35          40          45
Leu Gly Asn Ile Cys Phe Phe Arg Asn Cys Asp His Ser Lys Pro Phe
          50          55          60
Leu Val Pro Ala Gly Asp Tyr Glu Val Met Glu Val Arg Asp Thr Lys
          65          70          75          80
Ile Asn Leu Lys Ala Val Gly Leu Asp Arg Gly Val Lys Ile Ala Gly

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85 90 95
 Gly Arg Glu Ala Leu Ile Lys Leu Thr Lys Ser Thr Pro Leu Pro Val
 100 105 110
 Ile Asp Glu Lys Pro Leu Ala Asp Ser Pro Glu Glu Gly Thr Glu Pro
 115 120 125
 Thr Ser Pro Ser Lys Lys Glu Lys Lys Glu Ala Arg Lys Asp Ser Phe
 130 135 140
 Lys Gly Glu Lys Trp Lys Glu Lys Lys Lys Leu Ser Arg Arg Arg Asn
 145 150 155 160
 His Lys Glu Ile Ala Glu Val Thr Gly Ala Ser Gln Glu Ile Leu Asp
 165 170 175
 Thr Val Lys Glu Glu Leu Trp Glu Glu Ser Gln Glu Asn Glu Ile Val
 180 185 190
 Glu Gln Lys Lys Phe Ser Leu Leu Pro Pro Pro Ala Lys Leu Ile Ser
 195 200 205
 Glu Val Ile Ser Gln Thr Val Val Asp Pro Val Val Thr Ser Ala Asp
 210 215 220
 Leu Asn Glu Ser Leu Gln Ala Leu Val Arg Glu Ser Ser Asp Leu Ile
 225 230 235 240
 Asn Ala Leu Leu Ser Ala Asp Asp Ala Ile His Phe Pro Glu Thr Glu
 245 250 255
 Glu Glu Pro Thr Ser Ala Ser Phe Glu Glu Ser Ser Ala Met Phe Phe
 260 265 270
 Pro Glu Thr Ser Ser Ala Thr Glu Glu Glu
 275 280
 <210>662
 <211>336
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>662
 Ala Met Lys Val Val Ile Asn Gly Phe Gly Arg Ile Gly Arg Leu Val
 1 5 10 15
 Phe Arg Gln Ile Leu Lys Arg Asn Ser Ser Val Glu Val Leu Ala Ile
 20 25 30
 Asn Asp Leu Val Pro Gly Asp Ala Leu Thr Tyr Leu Phe Lys Phe Asp
 35 40 45
 Ser Thr His Gly Arg Phe Pro Glu Asp Val Arg Cys Glu Ala Asp His
 50 55 60
 Leu Ile Val Gly Lys Arg Lys Ile Gln Phe Leu Ser Glu Arg Asn Val
 65 70 75 80
 Gln Asn Leu Pro Trp Lys Asp Leu Gly Val Asp Leu Val Ile Glu Cys
 85 90 95
 Thr Gly Leu Phe Thr Lys Lys Glu Asp Ala Glu Lys His Ile Gln Ala
 100 105 110
 Gly Ala Lys Arg Val Leu Ile Ser Ala Pro Gly Lys Gly Asp Ile Pro
 115 120 125
 Thr Phe Val Met Gly Val Asn His Lys Thr Phe Asn Pro Glu Lys Asp
 130 135 140
 Phe Val Ile Ser Asn Ala Ser Cys Thr Thr Asn Cys Leu Ala Pro Ile
 145 150 155 160
 Ala Lys Val Leu Leu Asp Asn Phe Gly Ile Thr Glu Gly Leu Met Thr
 165 170 175
 Thr Val His Ala Ala Thr Ala Thr Gln Leu Val Val Asp Gly Pro Ser
 180 185 190
 Lys Lys Asp Trp Arg Gly Gly Arg Gly Cys Leu Gln Asn Ile Ile Pro
 195 200 205
 Ala Ser Thr Gly Ala Ala Lys Ala Val Thr Leu Cys Leu Pro Glu Leu
 210 215 220
 Lys Gly Lys Leu Thr Gly Met Ala Phe Arg Val Pro Ile Glu Asp Val
 225 230 235 240
 Ser Val Val Asp Leu Thr Val Arg Leu Asp Lys Ser Thr Thr Tyr Asp
 245 250 255
 Asp Ile Cys Lys Ala Met Lys Gln Ala Ser Glu Thr Asp Leu Lys Gly
 260 265 270

Ile Leu Asp Tyr Thr Asp Glu Gln Val Val Ser Ser Asp Phe Ile Gly
 275 280 385
 Ser Glu Tyr Ser Ser Ile Phe Asp Ala Leu Ala Gly Ile Ala Leu Asn
 290 295 300
 Asp Arg Phe Phe Lys Leu Val Ala Trp Tyr Asp Asn Glu Thr Gly Tyr
 305 310 315 320
 Ala Thr Arg Ile Val Asp Leu Leu Glu Tyr Val Glu Lys Asn Ser Lys
 325 330 335

<210>663

<211>129

<212>PRT

<213>Chlamydia pneumoniae

<400>663

Met Gln His Ala Arg Lys Lys Phe Arg Val Gly Arg Thr Ser Ser His
 1 5 10 15
 Asn Arg Cys Met Leu Ala Asn Met Leu Lys Ser Leu Ile His Tyr Glu
 20 25 30
 Arg Ile Glu Thr Thr Leu Pro Lys Ala Lys Glu Leu Arg Arg His Ala
 35 40 45
 Asp Lys Met Ile Thr Leu Ala Lys Lys Asn Ser Leu Ala Ala Arg Arg
 50 55 60
 Ile Ala Ile Gly Arg Leu Met Val Arg Tyr Asn Lys Leu Thr Ser Lys
 65 70 75 80
 Glu Ala Arg Gln Ala Lys Gly Gly Asp Thr Ser Val Tyr Asn Val Asp
 85 90 95
 Arg Leu Val Val Asn Lys Leu Phe Asp Glu Leu Gly Asn Arg Phe Val
 100 105 110
 Glu Arg Lys Gly Gly Tyr Thr Arg Ile Leu Lys Leu Gln Asn Arg Thr
 115 120 125

Trp

<210>664

<211>337

<212>PRT

<213>Chlamydia pneumoniae

<400>664

Ala Ser Arg Lys Arg Asn Gly Pro His Phe Arg Lys Cys Ser Lys Thr
 1 5 10 15
 Cys Phe Ala Tyr Trp Phe Arg Ser Ser Arg Tyr Leu Ile Ser Phe Ala
 20 25 30
 Met Thr Gly Val Leu His Gln Tyr Met Ala Ile Glu Gly Val Ile Glu
 35 40 45
 Asp Val Thr Asn Ile Ile Leu Asn Leu Lys Gly Ala Leu Leu Lys Lys
 50 55 60
 Tyr Pro Met Gln Asp Ser Ser Leu Gly Arg Thr Thr Gln Val Leu Lys
 65 70 75 80
 Ala Ser Ile Ser Ile Asp Ala Ser Asp Leu Ala Ala Ala Asn Gly Gln
 85 90 95
 Lys Glu Val Thr Leu Gln Asp Leu Leu Gln Glu Gly Asp Phe Glu Ala
 100 105 110
 Val Asn Pro Asp Gln Val Ile Phe Thr Val Thr Gln Pro Ile Gln Leu
 115 120 125
 Glu Val Asp Leu Arg Ile Ala Phe Gly Arg Gly Tyr Thr Pro Ser Glu
 130 135 140
 Arg Ile Val Leu Glu Asp Lys Gly Val Tyr Glu Ile Val Leu Asp Ala
 145 150 155 160
 Ala Phe Ser Pro Val Thr Leu Val Asn Tyr Phe Val Glu Asp Thr Arg
 165 170 175
 Val Gly Gln Asp Thr Asp Phe Asp Arg Leu Val Leu Ile Val Glu Thr
 180 185 190
 Asp Gly Arg Val Thr Pro Lys Glu Ala Leu Ala Phe Ser Thr Gln Ile
 195 200 205
 Leu Thr Lys His Phe Ser Ile Phe Glu Asn Met Asp Glu Lys Lys Ile
 210 215 220

Val Phe Glu Glu Ala Leu Ser Ile Glu Lys Glu Asn Lys Asp Ile
 225 230 235 240
 Leu His Lys Leu Ile Leu Gly Ile Asn Glu Ile Glu Leu Ser Val Arg
 245 250 255
 Ser Thr Asn Cys Leu Ser Asn Ala Asn Ile Glu Thr Ile Gly Glu Leu
 260 265 270
 Val Ile Met Pro Glu Pro Arg Leu Leu Gln Phe Arg Asn Phe Gly Lys
 275 280 285
 Lys Ser Leu Cys Glu Ile Lys Asn Lys Leu Lys Glu Met Lys Leu Glu
 290 295 300
 Leu Gly Met Asp Leu Thr Gln Phe Gly Val Gly Leu Asp Asn Val Lys
 305 310 315 320
 Glu Lys Met Lys Trp Tyr Ala Glu Lys Ile Arg Ala Lys Asn Ile Lys
 325 330 335
 Gly

<210>665

<211>82

<212>PRT

<213>Chlamydia pneumoniae

<400>665

Leu Pro Ala Lys Lys Lys Ala Gln Ser Val Val Leu Gly Lys Glu Lys
 1 5 10 15
 Gly Met Ser Asp Asn Ala His Asn Leu Leu Tyr Asp Lys Phe Glu Leu
 20 25 30
 Pro Glu Ala Val Lys Met Leu Pro Val Glu Gly Leu Pro Ile Asp Lys
 35 40 45
 His Ala Arg Phe Ile Ala Glu Pro Leu Glu Arg Gly Met Gly His Thr
 50 55 60
 Leu Gly Asn Ala Leu Arg Arg Ala Leu Leu Ile Gly Leu Glu Ala Pro
 65 70 75 80
 Gly Ile

<210>666

<211>133

<212>PRT

<213>Chlamydia pneumoniae

<400>666

Leu Val Lys Asn Gln Ala Gln Ala Lys Lys Ser Val Lys Arg Lys Gln
 1 5 10 15
 Leu Lys Asn Ile Pro Ser Gly Val Val His Val Lys Ala Thr Phe Asn
 20 25 30
 Asn Thr Ile Val Ser Ile Thr Asp Pro Ala Gly Asn Val Ile Ser Trp
 35 40 45
 Ala Ser Ala Gly Lys Val Gly Tyr Ser Gly Ser Xaa Lys Ser Ser Ala
 50 55 60
 Phe Ala Ala Thr Val Ala Ala Gln Asp Ala Ala Lys Thr Ala Met Asn
 65 70 75 80
 Ser Gly Leu Lys Glu Xaa Xaa Val Cys Leu Lys Gly Thr Gly Ala Gly
 85 90 95
 Arg Glu Ser Ala Val Arg Ala Leu Ile Ser Ala Gly Leu Val Val Ser
 100 105 110
 Val Ile Arg Asp Glu Thr Pro Val Pro His Asn Gly Cys Arg Pro Arg
 115 120 125
 Lys Arg Arg Arg Val
 130

<210>667

<211>122

<212>PRT

<213>Chlamydia pneumoniae

<400>667

Met Pro Arg Ile Ile Gly Ile Asp Ile Pro Ala Lys Lys Lys Leu Lys
 1 5 10 15
 Ile Ser Leu Thr Tyr Ile Tyr Gly Ile Gly Ser Ala Arg Ser Asp Glu

20 25 30
 Ile Ile Lys Lys Leu Lys Leu Asp Pro Glu Ala Arg Ala Ser Glu Leu
 35 40 45
 Thr Glu Glu Val Gly Arg Leu Asn Ser Leu Leu Gln Ser Glu Tyr
 50 55 60
 Thr Val Glu Gly Asp Leu Arg Arg Arg Val Gln Ser Asp Ile Lys Arg
 65 70 75 80
 Leu Ile Ala Ile His Ser Tyr Arg Gly Gln Arg His Arg Leu Ser Leu
 85 90 95
 Pro Val Arg Gly Gln Arg Thr Lys Thr Asn Ser Arg Thr Arg Lys Gly
 100 105 110
 Lys Arg Lys Thr Val Ala Gly Lys Lys Lys
 115 120

<210>668

<211>462

<212>PRT

<213>Chlamydia pneumoniae

<400>668

Leu Phe Arg Pro Tyr Met Thr Thr Leu Arg Gln Phe Phe Leu Ile Thr
 1 5 10 15
 Glu Leu Arg Gln Lys Leu Phe Tyr Thr Phe Ala Leu Leu Thr Ala Cys
 20 25 30
 Arg Val Gly Val Phe Ile Pro Val Pro Gly Ile Asn Gly Glu Leu Ala
 35 40 45
 Val Ala Tyr Phe Lys Gln Leu Leu Gly Ser Gly Gln Asn Leu Phe Gln
 50 55 60
 Leu Ala Asp Ile Phe Ser Gly Gly Ala Phe Ala Gln Met Thr Val Ile
 65 70 75 80
 Ala Leu Gly Val Val Pro Tyr Ile Ser Ala Ser Ile Ile Val Gln Leu
 85 90 95
 Phe Leu Val Phe Met Pro Ala Leu Gln Arg Glu Met Arg Glu Ser Ser
 100 105 110
 Asp Gln Gly Lys Arg Arg Ile Gly Arg Leu Thr Arg Leu Phe Thr Val
 115 120 125
 Ala Leu Ala Val Ile Gln Ser Leu Leu Phe Ala Lys Phe Ala Leu Arg
 130 135 140
 Met Asn Leu Thr Ile Pro Gly Ile Val Leu Pro Thr Leu Leu Ser Ser
 145 150 155 160
 Lys Leu Phe Gly Val Pro Trp Ile Phe Tyr Ile Thr Thr Val Val Val
 165 170 175
 Met Thr Thr Gly Thr Leu Leu Leu Met Trp Ile Gly Glu Gln Ile Ser
 180 185 190
 Asp Lys Gly Ile Gly Asn Gly Ile Ser Leu Ile Ile Ala Leu Gly Ile
 195 200 205
 Leu Ser Ser Phe Pro Ser Val Leu Gly Ser Ile Val Asn Lys Leu Asn
 210 215 220
 Leu Gly Ser Gln Asp Ser Ser Asp Leu Gly Leu Ile Ser Ile Leu Ile
 225 230 235 240
 Leu Ala Leu Val Phe Val Phe Val Leu Ile Thr Thr Ile Leu Ile Ile
 245 250 255
 Glu Gly Val Arg Lys Ile Pro Val Gln Tyr Ala Arg Arg Val Ile Gly
 260 265 270
 Arg Arg Glu Val Pro Gly Gly Gly Ser Tyr Leu Pro Leu Lys Val Asn
 275 280 285
 Tyr Ala Gly Val Ile Pro Val Ile Phe Ala Ser Ser Leu Leu Met Phe
 290 295 300
 Pro Ala Thr Ile Gly Gln Phe Ile Ala Ser Glu Ser Ser Trp Met Lys
 305 310 315 320
 Arg Ile Ala Ala Leu Ala Pro Gly Ser Leu Val Tyr Ser Ile Cys
 325 330 335
 Tyr Val Leu Leu Ile Ile Phe Phe Thr Tyr Phe Trp Thr Ala Thr Gln
 340 345 350
 Phe His Pro Glu Gln Ile Ala Ser Glu Met Lys Lys Asn Asn Ala Phe
 355 360 365

Ile Pro Gly Ile Arg An Gly Lys Pro Thr Gln His Tyr Glu Tyr
 370 375 380
 Thr Met Asn Arg Val Thr Leu Leu Gly Ala Leu Phe Leu Ala Ala Ile
 385 390 395 400
 Ala Ile Leu Pro Ser Leu Leu Gly Cys Leu Leu Arg Val Asp Ser Asn
 405 410 415
 Val Ser Tyr Phe Leu Gly Gly Thr Ala Met Leu Ile Val Val Gly Val
 420 425 430
 Val Leu Asp Thr Met Lys Gln Val Asp Ala Phe Leu Leu Met Arg Arg
 435 440 445
 Tyr Asp Ser Val Leu Lys Thr Asp Arg Thr Lys Gly Arg His
 450 455 460

<210>669

<211>144

<212>PRT

<213>Chlamydia pneumoniae

<400>669

Met Ile Lys Leu Glu Ser Leu Phe Asp Ile Ser Glu Arg Lys Arg Arg
 1 5 10 15
 Lys Lys Leu Leu Gly Arg Gly Pro Ser Ser Gly His Gly Lys Thr Ser
 20 25 30
 Gly Arg Gly His Lys Gly Asp Gly Ser Arg Ser Gly Tyr Lys Arg Arg
 35 40 45
 Phe Gly Tyr Glu Gly Gly Gly Val Pro Leu Tyr Arg Arg Val Pro Thr
 50 55 60
 Arg Gly Phe Ser His Lys Arg Phe Asp Lys Cys Val Glu Glu Ile Thr
 65 70 75 80
 Thr Gly Arg Leu Ala Glu Leu Phe Gln Glu Gly Glu Ala Ile Thr Leu
 85 90 95
 Asp Ala Leu Lys Ala Lys Lys Ala Ile Ala Arg Gln Ala Val Arg Val
 100 105 110
 Lys Val Ile Leu Lys Gly Asp Leu Glu Lys Thr Phe Val Trp Gln Asp
 115 120 125
 Thr Ala Val Val Leu Ser Gln Gly Val Gln Asn Leu Leu Gly Ile Thr
 130 135 140

<210>670

<211>168

<212>PRT

<213>Chlamydia pneumoniae

<400>670

Met Ser Leu Ser Lys Asn Ser His Lys Glu Asp Gln Leu Glu Glu Lys
 1 5 10 15
 Val Leu Val Val Asn Arg Cys Ser Lys Val Val Lys Gly Gly Arg Lys
 20 25 30
 Phe Ser Phe Ser Ala Leu Ile Leu Val Gly Asp Gly Lys Gly Arg Leu
 35 40 45
 Gly Tyr Gly Phe Ala Lys Ala Asn Glu Leu Thr Asp Ala Ile Arg Lys
 50 55 60
 Gly Gly Glu Ala Ala Lys Lys Asn Leu Met Lys Ile Glu Ala Leu Glu
 65 70 75 80
 Asp Gly Ser Ile Pro His Glu Val Leu Val His His Asp Gly Ala Gln
 85 90 95
 Leu Leu Leu Lys Pro Ala Lys Pro Gly Thr Gly Ile Val Ala Gly Ser
 100 105 110
 Arg Ile Arg Leu Ile Leu Glu Met Ala Gly Ile Lys Asp Ile Val Ala
 115 120 125
 Lys Ser Phe Gly Ser Asn Asn Pro Met Asn Gln Val Lys Ala Ala Phe
 130 135 140
 Lys Ala Leu Thr Gly Leu Ser Pro Arg Lys Asp Leu Leu Arg Arg Gly
 145 150 155 160
 Ala Ala Ile Asn Asp
 165

<210>671

<211>93

<212>PRT

<213>Chlamydia pneumoniae

<400>671

Leu Glu Trp Val Ser Glu Pro Leu Phe Lys Val His Phe Trp Ile Ser
 1 5 10 15
 Pro Leu Gly Phe Leu Thr Leu Gln Lys Phe Pro Ile Pro Ser Thr Leu
 20 25 30
 Gln Val Ser Val Glu Lys Asn Thr Leu Ile Ser Val Lys Gly Leu Asp
 35 40 45
 Lys Gln Leu Val Gly Glu Phe Ala Ala Ser Ile Arg Ala Lys Arg Pro
 50 55 60
 Pro Glu Pro Tyr Lys Gly Lys Gly Ile Arg Tyr Glu Asn Glu Tyr Val
 65 70 75 80
 Arg Arg Lys Ala Gly Lys Ala Ala Lys Thr Gly Lys Lys
 85 90

<310>672

<311>126

<312>PRT

<213>Chlamydia pneumoniae

<400>672

Met Ser Arg Lys Ala Arg Glu Pro Ile Leu Leu Pro Gln Gly Val Glu
 1 5 10 15
 Val Ser Ile Gln Asp Asp Lys Ile Ile Val Lys Gly Pro Lys Gly Ser
 20 25 30
 Leu Thr Gln Lys Ser Val Lys Glu Val Glu Ile Thr Leu Lys Asp Asn
 35 40 45
 Ser Ile Phe Val His Ala Ala Pro His Val Val Asp Arg Pro Ser Cys
 50 55 60
 Met Gln Gly Leu Tyr Trp Ala Leu Ile Ser Asn Met Val Gln Gly Val
 65 70 75 80
 His Leu Gly Phe Glu Lys Arg Leu Glu Met Ile Gly Val Gly Phe Arg
 85 90 95
 Ala Ser Val Gln Gly Ala Phe Leu Asp Leu Ser Ile Gly Val Ser His
 100 105 110
 Pro Thr Lys Ile Ser Tyr Pro Ile Tyr Ser Ser Gly Ile Ser
 115 120 125

<310>673

<311>133

<312>PRT

<213>Chlamydia pneumoniae

<400>673

Met Gly Met Thr Ser Asp Ser Ile Ala Asp Leu Leu Thr Arg Ile Arg
 1 5 10 15
 Asn Ala Leu Met Ala Glu His Leu Tyr Val Asp Val Glu His Ser Lys
 20 25 30
 Met Arg Glu Ala Ile Val Lys Ile Leu Lys His Lys Gly Phe Val Ala
 35 40 45
 His Tyr Leu Val Xaa Glu Xaa Asn Xaa Lys Arg Ala Met Arg Val Phe
 50 55 60
 Leu Gln Tyr Ser Asp Asp Arg Lys Pro Val Ile His Gln Leu Lys Arg
 65 70 75 80
 Val Ser Lys Pro Ser Arg Arg Val Tyr Val Ser Ala Ala Lys Ile Pro
 85 90 95
 Tyr Val Phe Gly Asn Met Gly Ile Ser Val Leu Ser Thr Ser Gln Gly
 100 105 110
 Val Met Glu Gly Ser Leu Ala Arg Ser Lys Asn Ile Gly Gly Glu Leu
 115 120 125
 Leu Cys Leu Val Trp
 130

<210>674

<211>180

<212>PRT

<213>Chlamydia pneumoniae

<400>674

Met Ser Arg Leu Lys Lys Phe Tyr Thr Glu Glu Ile Arg Lys Ser Leu
 1 5 10 15
 Phe Glu Lys Phe Gly Tyr Ala Asn Lys Met Gln Ile Pro Val Leu Lys
 20 25 30
 Lys Ile Val Leu Ser Met Gly Leu Ala Glu Ala Ala Lys Asp Lys Asn
 35 40 45
 Leu Phe Gln Ala His Leu Glu Glu Leu Thr Met Ile Ser Gly Gln Lys
 50 55 60
 Pro Leu Val Thr Lys Ala Arg Asn Ser Ile Ala Gly Phe Lys Leu Arg
 65 70 75 80
 Glu Gly Gln Gly Ile Gly Ala Lys Val Thr Leu Arg Gly Ile Arg Met
 85 90 95
 Tyr Asp Phe Met Asp Arg Phe Cys Asn Ile Val Ser Pro Arg Ile Arg
 100 105 110
 Asp Phe Arg Gly Phe Ser Asn Lys Gly Asp Gly Arg Gly Cys Tyr Ser
 115 120 125
 Val Gly Leu Asp Asp Gln Gln Ile Phe Pro Glu Ile Asn Leu Asp Arg
 130 135 140
 Val Lys Arg Thr Gln Gly Leu Asn Ile Thr Trp Val Thr Thr Ala Gln
 145 150 155 160
 Thr Asp Asp Glu Cys Thr Thr Leu Leu Glu Leu Met Gly Leu Arg Phe
 165 170 175
 Lys Lys Ala Gln
 180

<210>675

<211>111

<212>PRT

<213>Chlamydia pneumoniae

<400>675

Met Lys Lys Gln Asn Ile Arg Val Gly Asp Lys Val Phe Ile Leu Ala
 1 5 10 15
 Gly Asn Asp Lys Gly Lys Glu Gly Lys Val Leu Ser Leu Thr Glu Asp
 20 25 30
 Lys Val Val Val Glu Gly Val Asn Val Arg Ile Lys Asn Ile Lys Arg
 35 40 45
 Ser Gln Gln Asn Pro Lys Gly Lys Arg Ile Ser Ile Glu Ala Pro Ile
 50 55 60
 His Ile Ser Asn Val Arg Leu Thr Ile Ala Gly Glu Pro Ala Lys Leu
 65 70 75 80
 Ser Val Lys Val Thr Glu Gln Gly Arg Glu Leu Trp Gln Arg Arg Pro
 85 90 95
 Asp Gly Thr Ser Gln Leu Tyr Arg Leu Val Arg Gly Lys Lys Gly
 100 105 110

<210>676

<211>79

<212>PRT

<213>Chlamydia pneumoniae

<400>676

Met Ile Gln Gln Glu Ser Gln Leu Lys Val Ala Asp Asn Thr Gly Ala
 1 5 10 15
 Lys Lys Val Lys Cys Phe Lys Val Leu Gly Gly Ser Arg Arg Arg Tyr
 20 25 30
 Ala Thr Val Gly Asp Val Ile Val Cys Ser Val Arg Asp Val Glu Pro
 35 40 45
 Asn Ser Ser Ile Lys Lys Gly Arg Arg Tyr Gln Ser Cys Asp Arg Ala
 50 55 60
 His Thr Ser Ala Tyr Tyr Lys Lys Arg Trp Val Tyr Phe Lys Ile
 65 70 75

<210>677

<211>86

<212>PRT

<213>Chlamydia pneumonia

<400>677

Met Ala Ser Glu Pro Arg Gly Ser Arg Lys Val Lys Ile Gly Val Val

1	5	10	15
Val Ser Ala Lys Met Glu Lys Thr Val Val Val Arg Val Glu Arg Ile			
20	25	30	
Phe Ser His Pro Gln Tyr Leu Lys Val Val Arg Ser Ser Lys Lys Tyr			
35	40	45	
Tyr Ala His Thr Glu Leu Lys Val Ser Glu Gly Asp Lys Val Lys Ile			
50	55	60	
Gln Glu Thr Arg Pro Leu Ser Lys Leu Lys Arg Trp Arg Val Ile Glu			
65	70	75	80
His Val Gly Val Val Ser			

85

<210>678

<211>138

<212>PRT

<213>Chlamydia pneumoniae

<400>678

Met Leu Met Pro Lys Arg Thr Lys Phe Arg Lys Gln Gln Xaa Gly Gln			
1	5	10	15
Phe Ala Gly Leu Ser Lys Gly Ala Thr Phe Val Asp Phe Gly Glu Tyr			
20	25	30	
Ala Met Gln Thr Leu Glu Arg Gly Leu Val Thr Ser Arg Lys Ile Glu			
35	40	45	
Ala Cys Arg Val Ala Ile Asn Arg Tyr Leu Lys Arg Arg Gly Lys Val			
50	55	60	
Trp Ile Arg Ile Phe Pro Asp Lys Ser Val Thr Lys Lys Pro Ala Glu			
65	70	75	80
Thr Arg Met Gly Lys Gly Lys Gly Ala Pro Asp His Trp Val Ala Val			
85	90	95	
Val Arg Pro Gly Arg Ile Leu Phe Glu Val Ala Asn Val Ser Lys Glu			
100	105	110	
Asp Ala Gln Asp Ala Leu Arg Arg Ala Ala Ala Lys Leu Gly Ile Lys			
115	120	125	
Thr Arg Phe Val Lys Arg Val Glu Arg Val			
130	135		

<210>679

<211>223

<212>PRT

<213>Chlamydia pneumoniae

<400>679

Met Gly Gln Lys Gly Cys Pro Ile Gly Phe Arg Thr Gly Val Thr Lys			
1	5	10	15
Lys Trp Arg Ser Leu Trp Tyr Gly Asn Lys Gln Glu Phe Gly Lys Phe			
20	25	30	
Leu Ile Glu Asp Val Arg Ile Arg Gln Phe Leu Arg Lys Lys Pro Ser			
35	40	45	
Cys Gln Gly Ala Ala Gly Phe Val Val Arg Arg Met Ser Gly Lys Ile			
50	55	60	
Glu Val Thr Ile Gln Thr Ala Arg Pro Gly Leu Val Ile Gly Lys Lys			
65	70	75	80
Gly Ala Glu Val Asp Leu Leu Lys Glu Glu Leu Arg Ala Leu Thr Gly			
85	90	95	
Lys Glu Val Trp Leu Glu Ile Ala Glu Ile Lys Arg Pro Glu Leu Asn			
100	105	110	
Ala Lys Leu Val Ala Asp Asn Ile Ala Arg Gln Ile Glu Arg Arg Val			
115	120	125	
Ser Phe Arg Arg Ala Met Lys Lys Ala Met Gln Ser Val Met Asp Ala			
130	135	140	
Gly Ala Val Gly Val Lys Ile Gln Val Ser Gly Arg Leu Ala Gly Ala			
145	150	155	160
Glu Ile Ala Arg Ser Glu Trp Tyr Lys Asn Gly Arg Val Pro Leu His			
165	170	175	
Thr Leu Arg Ala Asp Ile Asp Tyr Ala Thr Ala Cys Ala Glu Thr Thr			
180	185	190	
Tyr Gly Ile Ile Gly Ile Lys Val Trp Ile Asn Leu Gly Glu Asn Ser			

195 200 205

Ser Ser Thr Thr Pro Asn Asn Pro Ala Ala Pro Ser Ala Ala Ala
210 215 220

<210>680
<211>115
<212>PRT
<213>Chlamydia pneumoniae
<400>680

Arg Arg His Ser Met Phe Lys Ala Thr Ala Arg Tyr Ile Arg Val Gln
1 5 10 15
Pro Arg Lys Ala Arg Leu Ala Ala Gly Leu Met Arg Asn Leu Ser Val
20 25 30
Gln Glu Ala Glu Glu Gln Leu Gly Phe Ser Gln Leu Lys Ala Gly Arg
35 40 45
Cys Leu Lys Lys Val Leu Asn Ser Ala Val Ala Asn Ala Glu Leu His
50 55 60
Glu Asn Ile Lys Arg Glu Asn Leu Ser Val Thr Glu Val Arg Val Asp
65 70 75 80
Ala Gly Pro Val Tyr Lys Arg Ser Lys Ser Lys Ser Arg Gly Gly Arg
85 90 95
Ser Pro Ile Leu Lys Arg Thr Ser His Leu Thr Val Ile Val Gly Glu
100 105 110
Lys Glu Arg
115

<210>681
<211>284
<212>PRT
<213>Chlamydia pneumoniae
<400>681

Met Phe Lys Lys Phe Lys Pro Val Thr Pro Gly Thr Arg Gln Leu Val
1 5 10 15
Leu Pro Ala Phe Asp Glu Leu Thr Thr Arg Gly Glu Leu Arg Gly Thr
20 25 30
Lys Ser Lys Arg Ser Leu Arg Pro Asn Lys Lys Leu Ser Phe Phe Lys
35 40 45
Lys Ser Ser Gly Gly Arg Asp Asn Leu Gly His Ile Ser Cys Arg His
50 55 60
Arg Gly Gly Gly Ala Lys Gln Leu Tyr Arg Val Val Asp Phe Lys Arg
65 70 75 80
Asn Lys Asp Gly Ile Thr Ala Lys Val Val Thr Val Glu Tyr Asp Pro
85 90 95
Asn Arg Ser Ala Tyr Ile Ala Leu Leu Ser Tyr Glu Asp Gly Glu Lys
100 105 110
Arg Tyr Ile Leu Ala Pro Lys Gly Ile Gln Arg Gly Asp Val Val Val
115 120 125
Ser Gly Glu Gly Ser Pro Phe Lys Pro Gly Cys Cys Met Thr Leu Lys
130 135 140
Ser Ile Pro Leu Gly Leu Ser Val His Asn Ile Glu Met Arg Pro Ser
145 150 155 160
Ser Gly Gly Lys Leu Val Arg Ser Ala Gly Leu Ala Ala Gln Val Ile
165 170 175
Ala Lys Ser Pro Gly Tyr Val Thr Leu Lys Met Pro Ser Gly Glu Phe
180 185 190
Arg Met Leu Asn Glu Gly Cys Arg Ala Thr Ile Gly Glu Val Ser Asn
195 200 205
Ala Asp His Asn Leu Arg Val Asp Gly Lys Ala Gly Arg Arg Arg Trp
210 215 220
Met Gly Val Arg Pro Thr Val Arg Gly Thr Ala Met Asn Pro Val Asp
225 230 235 240
His Pro His Gly Gly Glu Gly Arg His Asn Gly Tyr Ile Pro Arg
245 250 255
Thr Pro Trp Gly Lys Val Thr Lys Gly Leu Lys Thr Arg Asp Lys Asn
260 265 270
Lys Ser Asn Lys Trp Ile Val Lys Asp Arg Arg Lys

<210>682

<211>112

<212>PRT

<213>Chlamydia pneumoniae

<400>682

Asp Met Lys Asp Pro Tyr Asp Val Ile Lys Arg His Tyr Val Thr Glu
 1 5 10 15
 Lys Ala Lys Met Leu Glu His Leu Ser Ala Gly Thr Gly Glu Gly Lys
 20 25 30
 Lys Lys Gly Ser Phe Cys Lys Asp Pro Lys Phe Val Phe Ile Val Ser
 35 40 45
 His Asp Ala Thr Lys Pro Leu Ile Ala Gln Ala Leu Glu Ala Ile Tyr
 50 55 60
 Val Asp Lys Asn Val Lys Val Lys Ser Val Asn Thr Ile Asn Val Lys
 65 70 75 80
 Pro Gln Pro Ala Arg Met Phe Arg Gly Arg Arg Lys Gly Lys Thr Ser
 85 90 95
 Gly Phe Lys Lys Ala Ile Val Thr Phe Tyr Gln Gly His Ser Val Gly
 100 105 110

<210>683

<211>224

<212>PRT

<213>Chlamydia pneumoniae

<400>683

Trp Phe Tyr Tyr Gln Asn Leu Asp Phe Ser Gly Asn Lys Ile Gly Glu
 1 5 10 15
 Val Glu Val Ala Asp Ser Leu Phe Ala Asp Glu Gly Asp Gly Leu Gln
 20 25 30
 Leu Ile Lys Asp Tyr Ile Val Ala Ile Arg Ala Asn Lys Arg Gln Trp
 35 40 45
 Ser Ala Cys Thr Arg Asn Arg Ser Glu Val Ser His Ser Thr Lys Lys
 50 55 60
 Pro Phe Lys Gln Lys Gly Thr Gly Asn Ser Arg Gln Gly Cys Leu Ala
 65 70 75 80
 Ser Pro Gln Phe Arg Gly Gly Gly Ile Val Phe Gly Pro Lys Pro Lys
 85 90 95
 Phe Asn Gln His Val Arg Ile Asn Arg Lys Glu Arg Lys Ala Ala Ile
 100 105 110
 Arg Leu Leu Leu Ala Gln Lys Ile Gln Thr Asn Lys Leu Thr Val Val
 115 120 125
 Asp Asp Thr Val Phe Val Asp Ala Leu Thr Ala Pro Lys Thr Gln Ser
 130 135 140
 Ala Leu Arg Phe Leu Lys Asp Cys Asn Val Glu Cys Arg Ser Ile Leu
 145 150 155 160
 Phe Ile Asp His Leu Asp His Val Glu Lys Asn Glu Asn Leu Arg Leu
 165 170 175
 Ser Leu Arg Asn Leu Thr Ala Val Lys Gly Phe Val Tyr Gly Ile Asn
 180 185 190
 Ile Asn Gly Tyr Asp Leu Ala Ser Ala His Asn Ile Val Ile Ser Lys
 195 200 205
 Lys Ala Leu Gln Glu Leu Val Glu Arg Leu Val Ser Glu Thr Lys Asp
 210 215 220

<210>684

<211>235

<212>PRT

<213>Chlamydia pneumoniae

<400>684

Leu Phe Leu Gln Glu Glu Ser Lys Ser Leu Leu Leu Met Asp Lys Phe
 1 5 10 15
 Met Arg Ser His Ile Ser Val Met Gly Lys Lys Glu Gly Met Ile His
 20 25 30
 Ile Phe Asp Lys Asp Gly Ser Leu Val Ala Cys Ser Val Ile Arg Val
 35 40 45

Glu Pro Asn Val Val Thr Gln Ile Lys Thr Lys Glu Ser Asp Gly Tyr
 50 55 60
 Phe Ser Leu Gln Ile Gly Ala Glu Glu Met Asn Ala Pro Ala His Thr
 65 70 75 80
 Ile Thr Lys Arg Val Ser Lys Pro Lys Leu Gly His Leu Arg Lys Ala
 85 90 95
 Gly Gly Arg Val Phe Arg Phe Leu Lys Glu Val Arg Gly Ser Glu Glu
 100 105 110
 Ala Leu Asn Gly Val Ser Leu Gly Asp Ala Phe Gly Leu Glu Val Phe
 115 120 125
 Glu Asp Val Ser Ser Val Asp Val Arg Gly Ile Ser Lys Gly Lys Gly
 130 135 140
 Phe Gln Gly Val Met Lys Lys Phe Gly Phe Arg Gly Gly Pro Gly Ser
 145 150 155 160
 His Gly Ser Gly Phe His Arg His Ala Gly Ser Ile Gly Met Arg Ser
 165 170 175
 Thr Pro Gly Arg Cys Phe Pro Gly Ser Lys Arg Pro Ser His Met Gly
 180 185 190
 Ala Glu Asn Val Thr Val Lys Asn Leu Glu Val Ile Lys Val Asp Leu
 195 200 205
 Glu Lys Lys Val Leu Leu Val Lys Gly Ala Ile Pro Gly Ala Arg Gly
 210 215 220
 Ser Ile Val Ile Val Lys His Ser Ser Arg Thr
 225 230 235

<210>685

<211>100

<212>PRT

<213>Chlamydia pneumoniae

<400>685

Lys Val Ala Ser Lys Lys Phe Phe Arg Ser Asp Phe Phe Lys Ile Lys
 1 5 10 15
 Ile Lys Leu Ala Tyr Leu Pro Asp Phe Val Phe Cys His Met Leu Tyr
 20 25 30
 Lys Pro Ile Pro Ala Asp Ala Ala Val Lys Ala Pro Glu Ile Ala Ala
 35 40 45
 Glu Gln Ala Thr Val Ile Gly Lys Gly Met Ser Leu Thr Pro Ser Thr
 50 55 60
 Thr Asn Ser Lys Ala Phe Ser Arg Arg Val Lys Thr Phe Leu Phe Arg
 65 70 75 80
 Val Ala Thr Cys Ser Leu Arg Asn Ala Leu Ser Ala Leu Arg Ile Thr
 85 90 95
 Ser Pro Leu Asn
 100

<210>686

<211>134

<212>PRT

<213>Chlamydia pneumoniae

<400>686

Lys Trp Arg Leu Thr Gln Leu Asp Arg Gln Glu Val Gln Gln Val Arg
 1 5 10 15
 Cys Cys Cys Gln Leu Pro Lys Asn Gln Arg Leu Ser Ala Pro Leu Leu
 20 25 30
 Arg Lys Gly Phe Ile Val Phe Asn Asn Phe Phe Thr Asn Pro Gly Asn
 35 40 45
 Lys Leu Ala Lys Phe Val Gly Ala Thr Lys Ser Leu Asp Lys Cys Phe
 50 55 60
 Lys Leu Ser Lys Ala Val Ser Asp Cys Val Val Gly Ser Leu Glu Glu
 65 70 75 80
 Ala Gly Cys Thr Gly Asp Ala Leu Thr Ser Ala Arg Asn Ala Gln Gly
 85 90 95
 Met Leu Lys Thr Thr Arg Glu Val Val Ala Leu Ala Asn Val Leu Asn
 100 105 110
 Gly Ala Val Pro Ser Ile Val Asn Ser Thr Gln Arg Cys Tyr Gln Tyr
 115 120 125

Thr Arg Gln Ala Phe Glu Leu Gly Ser Lys Thr Lys Glu Arg Lys Thr
 130 135 140
 Pro Gly Glu Tyr Ser Lys Met Leu Leu Thr Arg Gly Asp Tyr Leu Leu
 145 150 155 160
 Ala Ala Ser Arg Glu Ala Cys Thr Ala Val Gly Ala Thr Thr Tyr Ser
 165 170 175
 Ala Thr Phe Gly Val Leu Arg Pro Leu Met Leu Ile Asn Lys Leu Thr
 180 185 190
 Ala Lys Pro Phe Leu Asp Lys Ala Thr Val Gly Asn Phe Gly Thr Ala
 195 200 205
 Val Ala Gly Ile Met Thr Ile Asn His Met Ala Gly Val Ala Gly Ala
 210 215 220
 Val Gly Gly Ile Ala Leu Glu Gln Lys Leu Phe Lys Arg Ala Lys Glu
 225 230 235 240
 Ser Leu Tyr Asn Glu Arg Cys Ala Leu Glu Asn Gln Gln Ser Gln Leu
 245 250 255
 Ser Gly Asp Val Ile Leu Ser Ala Glu Arg Ala Leu Arg Lys Glu His
 260 265 270
 Val Ala Thr Leu Lys Arg Asn Val Leu Thr Leu Leu Glu Lys Ala Leu
 275 280 285
 Glu Leu Val Val Asp Gly Val Lys Leu Ile Pro Leu Pro Ile Thr Val
 290 295 300
 Ala Cys Ser Ala Ala Ile Ser Gly Ala Leu Thr Ala Ala Ser Ala Gly
 305 310 315 320
 Ile Gly Leu Tyr Ser Ile Trp Gln Lys Thr Lys Ser Gly Lys
 325 330

<210>687

<211>321

<212>PRT

<213>Chlamydia pneumoniae

<400>687

Leu Asn Leu Lys Val Val Tyr Phe Gly Thr Pro Thr Phe Ala Ala Thr
 1 5 10 15
 Val Leu Gln Asp Leu Leu His His Lys Ile Gln Ile Thr Ala Val Val
 20 25 30
 Thr Arg Val Asp Lys Pro Gln Lys Arg Ser Ala Gln Leu Ile Pro Ser
 35 40 45
 Pro Val Lys Thr Ile Ala Leu Thr His Gly Leu Pro Leu Leu Gln Pro
 50 55 60
 Ser Lys Ala Ser Asp Pro Gln Phe Ile Glu Glu Leu Arg Ala Phe Asn
 65 70 75 80
 Ala Asp Val Phe Ile Val Val Ala Tyr Gly Ala Ile Leu Arg Gln Ile
 85 90 95
 Val Leu Asp Ile Pro Arg Tyr Gly Cys Tyr Asn Leu His Ala Gly Leu
 100 105 110
 Leu Pro Ala Tyr Arg Gly Ala Ala Pro Ile Gln Arg Cys Ile Met Glu
 115 120 125
 Gly Ala Thr Glu Ser Gly Asn Thr Val Ile Arg Met Asp Ala Gly Met
 130 135 140
 Asp Thr Gly Asp Met Ala Asn Ile Thr Arg Val Pro Ile Gly Pro Asp
 145 150 155 160
 Met Thr Ser Gly Glu Leu Ala Asp Ala Leu Ala Ser Gln Gly Ala Glu
 165 170 175
 Val Leu Ile Lys Thr Leu Gln Gln Ile Glu Ser Gly Gln Leu Gln Leu
 180 185 190
 Val Ser Gln Asp Ala Ala Leu Ala Thr Ile Ala Pro Lys Leu Ser Lys
 195 200 205
 Glu Glu Gly Gln Val Pro Trp Asp Lys Pro Ala Lys Glu Ala Tyr Ala
 210 215 220
 His Ile Arg Gly Val Thr Pro Ala Pro Gly Ala Trp Thr Leu Phe Ser
 225 230 235 240
 Phe Ser Glu Lys Ala Pro Lys Arg Leu Met Ile Arg Lys Ala Ser Leu
 245 250 255
 Leu Ala Glu Ala Gly Arg Tyr Gly Ala Pro Gly Thr Val Val Thr

260 265 270
 Asp Arg Gln Glu Leu Ala Ile Ala Cys Ser Glu Gly Ala Ile Cys Leu
 275 280 285
 His Glu Val Gln Val Glu Gly Lys Gly Ser Thr Asn Ser Lys Ser Phe
 290 295 300
 Leu Asn Gly Tyr Pro Ala Lys Lys Leu Lys Ile Val Phe Thr Leu Asn
 305 310 315 320
 Asn

<210>688

<211>279

<212>PRT

<213>Chlamydia pneumoniae

<400>688

Met Ala Ser Ile His Pro Thr Ala Ile Ile Glu Pro Gly Ala Lys Ile
 1 5 10 15
 Gly Lys Asp Val Val Ile Glu Pro Tyr Val Val Ile Lys Ala Thr Val
 20 25 30
 Thr Leu Cys Asp Asn Val Val Val Lys Ser Tyr Ala Tyr Ile Asp Gly
 35 40 45
 Asn Thr Thr Ile Gly Lys Gly Thr Thr Ile Trp Pro Ser Ala Met Ile
 50 55 60
 Gly Asn Lys Pro Gln Asp Leu Lys Tyr Gln Gly Glu Lys Thr Tyr Val
 65 70 75 80
 Thr Ile Gly Glu Asn Cys Glu Ile Arg Glu Phe Ala Ile Ile Thr Ser
 85 90 95
 Ser Thr Phe Glu Gly Thr Thr Val Ser Ile Gly Asn Asn Cys Leu Ile
 100 105 110
 Met Pro Trp Ala His Val Ala His Asn Cys Thr Ile Gly Asn Asn Val
 115 120 125
 Val Leu Ser Asn His Ala Gln Leu Ala Gly His Val Gln Val Gly Asp
 130 135 140
 Tyr Ala Ile Leu Gly Gly Met Val Gly Val His Gln Phe Val Arg Ile
 145 150 155 160
 Gly Ala His Ala Met Val Gly Ala Leu Ser Gly Ile Arg Arg Asp Val
 165 170 175
 Pro Pro Tyr Thr Ile Gly Ser Gly Asn Pro Tyr Gln Leu Ala Gly Ile
 180 185 190
 Asn Lys Val Gly Leu Gln Arg Arg Gln Val Pro Phe Ala Thr Arg Leu
 195 200 205
 Ala Leu Ile Lys Ala Phe Lys Lys Ile Tyr Arg Ala Asp Gly Cys Phe
 210 215 220
 Phe Glu Ser Leu Glu Glu Thr Leu Glu Glu Tyr Gly Asp Ile Pro Glu
 225 230 235 240
 Val Lys Asn Phe Ile Glu Phe Cys Gln Ser Pro Ser Lys Arg Gly Ile
 245 250 255
 Glu Arg Ser Ile Asp Lys Gln Ala Leu Glu Glu Glu Ser Ala Asp Lys
 260 265 270
 Glu Gly Val Leu Ile Glu Ser
 275

<210>689

<211>153

<212>PRT

<213>Chlamydia pneumoniae

<400>689

Met Asn Gln Pro Ser Val Il Lys Leu Arg Glu Leu Leu Asp Leu Leu
 1 5 10 15
 Pro His Arg Tyr Pro Phe Leu Leu Val Asp Lys Val Leu Ser Tyr Asp
 20 25 30
 Ile Glu Ala Arg Ser Ile Thr Ala Gln Lys Asn Val Thr Ile Asn Glu
 35 40 45
 Pro Phe Phe Met Gly His Phe Pro Asn Ala Pro Ile Met Pro Gly Val
 50 55 60
 Leu Ile Leu Glu Ala Leu Ala Gln Ala Ala Gly Val Leu Ile Gly Leu

65 70 75 80
 Val Leu Glu Asn Asp Arg Asn Lys Arg Ile Ala Leu Phe Leu Gly Ile
 85 90 95
 Gln Lys Ala Lys Phe Arg Gln Ala Val Arg Pro Gly Asp Val Leu Thr
 100 105 110
 Leu Gln Ala Asp Phe Ser Leu Ile Ser Ser Lys Gly Gly Lys Ala Trp
 115 120 125
 Ala Gln Ala Arg Val Asp Ser Gln Leu Val Thr Glu Ala Glu Leu Ser
 130 135 140
 Phe Ala Leu Val Asp Lys Glu Ser Ile
 145 150

<210>690

<211>166

<212>PRT

<213>Chlamydia pneumoniae

<400>690

Ser Ile Lys Gln Val Phe Val Asn Lys Lys Ile Xaa Val Ser Ile Ala
 1 5 10 15
 Arg Leu Thr Arg Pro Val Tyr Tyr Gln His Gln Asp Ile Phe Leu Ala
 20 25 30
 Ala Phe Pro Ser Asp Glu Leu Lys Ile Ser Tyr Thr Leu His Tyr Pro
 35 40 45
 Gln Ser Ser Thr Ile Gly Thr Gln Tyr Lys Ser Leu Val Ile Asn Glu
 50 55 60
 Glu Ser Phe Arg Gln Glu Ile Ala Pro Cys Arg Thr Phe Ala Leu Tyr
 65 70 75 80
 Asn Glu Leu Cys Phe Leu Met Glu Lys Gly Leu Ile Gly Gly Gly Cys
 85 90 95
 Leu Asp Asn Ala Val Val Phe Lys Asp Asp Gly Ile Ile Ser Arg Gly
 100 105 110
 Gln Leu Arg Phe Ala Asp Glu Pro Val Arg His Lys Ile Leu Asp Leu
 115 120 125
 Ile Gly Asp Leu Ser Leu Val Gly Arg Pro Phe Val Ala His Val Leu
 130 135 140
 Ala Val Gly Ser Gly His Ser Ser Asn Ile Ala Phe Gly Lys Lys Ile
 145 150 155 160
 Leu Glu Ala Leu Glu Leu
 165

<210>691

<211>152

<212>PRT

<213>Chlamydia pneumoniae

<400>691

Met Leu Glu Arg Thr Gln Arg Thr Leu Lys Arg Glu Val Arg Tyr Ser
 1 5 10 15
 Gly Val Gly Ile His Leu Gly Lys Ser Ser Thr Leu His Leu Gln Pro
 20 25 30
 Ala Gln Thr Asn Thr Gly Ile Val Phe Gln Arg Gln Ser Ala Ser Gly
 35 40 45
 Asn Tyr Glu Asn Val Pro Ala Leu Leu Asp His Val Tyr Thr Thr Gly
 50 55 60
 Arg Ser Thr Thr Leu Ser Arg Gly Ser Ala Val Ile Ala Thr Val Glu
 65 70 75 80
 His Leu Met Ala Ala Leu Arg Ser Asp Asn Ile Asp Asn Leu Ile Ile
 85 90 95
 Gln Cys Ser Gly Glu Glu Ile Pro Ile Gly Asp Gly Ser Ser Asn Val
 100 105 110
 Phe Val Glu Leu Ile Asp Gln Ala Gly Ile Cys Glu Gln Glu Asp Xaa
 115 120 125
 Gly Phe His Cys Glu Thr Asn Thr Ser Cys Ile Leu Ser Thr Ser Gly
 130 135 140
 His Ph Phe Ser Ser Phe Ser Leu
 145 150

<210>692

<211>541

<312>PRT

<313>Chlamydia pneumoniae

<400>692

Val Leu Arg Ile Phe Cys Phe Val Ile Ser Trp Cys Leu Ile Ala Phe
 1 5 10 15
 Ala Gln Pro Asp Leu Ser Gly Phe Val Ser Ile Leu Gly Ala Ala Cys
 20 25 30
 Gly Tyr Gly Phe Phe Trp Tyr Ser Leu Glu Pro Leu Lys Lys Pro Ser
 35 40 45
 Leu Pro Leu Arg Thr Leu Phe Val Ser Cys Phe Phe Trp Ile Phe Thr
 50 55 60
 Ile Glu Gly Ile His Phe Ser Trp Met Leu Ser Asp Gln Tyr Ile Gly
 65 70 75 80
 Lys Leu Ile Tyr Leu Val Trp Leu Thr Leu Ile Thr Ile Leu Ser Val
 85 90 95
 Leu Phe Ser Gly Phe Ser Cys Leu Leu Val Ala Ile Val Arg Gln Lys
 100 105 110
 Arg Thr Ala Phe Leu Trp Ser Leu Pro Gly Val Trp Val Ala Ile Glu
 115 120 125
 Met Leu Arg Phe Tyr Gly Ile Phe Ser Gly Met Ser Phe Asp Tyr Leu
 130 135 140
 Gly Trp Pro Met Thr Ala Ser Ala Tyr Gly Arg Gln Phe Gly Gly Phe
 145 150 155 160
 Leu Gly Trp Ala Gly Gln Ser Phe Ala Val Ile Ala Val Asn Met Ser
 165 170 175
 Phe Tyr Cys Leu Leu Leu Lys Lys Pro His Ala Lys Met Leu Trp Val
 180 185 190
 Leu Thr Leu Leu Leu Pro Tyr Thr Phe Gly Ala Ile His Tyr Glu Tyr
 195 200 205
 Leu Lys His Ala Phe Gln Gln Asp Lys Arg Ala Leu Arg Val Ala Val
 210 215 220
 Val Gln Pro Ala His Pro Pro Ile Arg Pro Lys Leu Lys Ser Pro Ile
 225 230 235 240
 Val Val Trp Glu Gln Leu Leu Gln Leu Val Ser Pro Ile Gln Gln Pro
 245 250 255
 Ile Asp Leu Leu Ile Phe Pro Glu Val Val Val Pro Phe Gly Lys His
 260 265 270
 Arg Gln Val Tyr Pro Tyr Glu Ser Cys Ala His Leu Leu Ser Ser Phe
 275 280 285
 Ala Pro Leu Pro Glu Gly Lys Ala Phe Leu Ser Asn Ser Asp Cys Ala
 290 295 300
 Thr Ala Leu Ser Gln His Phe Gln Cys Pro Val Ile Ile Gly Leu Glu
 305 310 315 320
 Arg Trp Val Lys Lys Glu Asn Val Leu Tyr Trp Tyr Asn Ser Ala Glu
 325 330 335
 Val Ile Ser His Lys Gly Ile Ser Val Gly Tyr Asp Lys Arg Ile Leu
 340 345 350
 Val Pro Gly Gly Glu Tyr Ile Pro Gly Gly Lys Phe Gly Ser Leu Ile
 355 360 365
 Cys Arg Gln Leu Phe Pro Lys Tyr Ala Leu Gly Cys Lys Arg Leu Pro
 370 375 380
 Gly Arg Arg Ser Gly Val Val Gln Val Arg Gly Leu Pro Arg Ile Gly
 385 390 395 400
 Ile Thr Ile Cys Tyr Glu Glu Thr Phe Gly Tyr Arg Leu Gln Ser Tyr
 405 410 415
 Lys Arg Gln Gly Ala Glu Leu Leu Val Asn Leu Thr Asn Asp Gly Trp
 420 425 430
 Tyr Pro Glu Ser Arg Leu Pro Lys Val His Phe Leu His Gly Met Leu
 435 440 445
 Arg Asn Gln Glu Phe Gly Met Pro Cys Val Arg Ala Cys Gln Thr Gly
 450 455 460
 Val Thr Ala Thr Val Asp Ser Leu Gly Arg Ile Leu Lys Ile Leu Pro
 465 470 475 480

Pro Leu Ala Tyr Leu Gln Trp Ala Ser Lys Met Asp Phe Asp Ser Asp
 210 215 220
 Leu Leu Phe Ser Ile Arg His Glu Ile Lys His Arg Gln Lys Gly Thr
 225 230 235 240
 Gly Phe Ser Gln Val Asn Asn Pro Phe Met Glu Leu
 245 250

<210>695

<211>142

<212>PRT

<213>Chlamydia pneumoniae

<400>695

Pro Met Gly Arg Tyr Arg Arg Val Ser His Ser Ser Gln Glu Thr Leu
 1 5 10 15
 Leu Leu Gly Thr Glu Leu Gly Gln Val Leu Val Pro Gly Ala Val Leu
 20 25 30
 Leu Leu Phe Gly Asp Tyr Gly Ala Gly Lys Thr Glu Phe Val Arg Gly
 35 40 45
 Ile Val Ser Gly Tyr Leu Gly Asp Thr Ile Ala Glu Glu Val Ala Ser
 50 55 60
 Pro Ser Phe Ser Ile Leu His Val Tyr Gly Asn Glu Pro Lys Arg Leu
 65 70 75 80
 Cys His Tyr Asp Leu Tyr Arg Ile Asp Gln Lys Asn Gln Glu Tyr Ile
 85 90 95
 Phe Gln Asp Ala Glu Glu Asp Asp Val Leu Cys Ile Glu Trp Ala Asp
 100 105 110
 Arg Leu Pro Lys Pro Arg Phe Cys Asp Thr Ile Asn Ile Tyr Ile Thr
 115 120 125
 Met Gln Thr Asn Met Glu Arg Glu Ile Ile Ile Glu Lys Arg
 130 135 140

<210>696

<211>191

<212>PRT

<213>Chlamydia pneumoniae

<400>696

Phe Ser Lys Leu Asa Glu Asp Ala Val Arg Ile Leu Glu Gln Asp Lys
 1 5 10 15
 Lys Ile Trp Arg Glu Thr Glu Ile Gln Ile Ser Ser Glu Lys Pro Gln
 20 25 30
 Val Asn Glu Asn Thr Lys Arg Ile Tyr Ile Cys Pro Phe Thr Gly Lys
 35 40 45
 Val Phe Ala Asp Asn Val Tyr Ala Asn Pro Gln Asp Ala Ile Tyr Asp
 50 55 60
 Trp Leu Ser Ser Cys Pro Gln Asn Met Glu Lys Gln Gly Gly Val Arg
 65 70 75 80
 Ile Lys Arg Phe Leu Val Ser Glu Asp Pro Asp Val Ile Lys Glu Tyr
 85 90 95
 Ala Val Pro Pro Lys Glu Pro Ile Ile Lys Thr Val Phe Ala Ser Ala
 100 105 110
 Ile Thr Gly Lys Leu Phe His Ser Leu Pro Pro Leu Leu Glu Asp Phe
 115 120 125
 Ile Ser Ser Tyr Leu Arg Pro Met Thr Leu Glu Glu Val Gln Asn Gln
 130 135 140
 Thr Lys Phe Gln Leu Glu Ser Ser Phe Leu Ser Leu Leu Gln Asp Ala
 145 150 155 160
 Leu Val Glu Asp Lys Ile Ala Ala Phe Ile Glu Ser Leu Ala Asp Asp
 165 170 175
 Thr Ala Phe His Val Tyr Ile Ser Gln Trp Val Asp Thr Glu Glu
 180 185 190

<210>697

<211>102

<212>PRT

<213>Chlamydia pneumoniae

<400>697

Met Val Lys Ile Ile Ser Ser Glu Asn Phe Asp Ser Phe Ile Ala Ser

1	5	10	15
Gly Leu Val Leu Val Asp Phe Phe Ala Glu Trp Cys Gly Pro Cys Arg			
20	25	30	
Met Leu Thr Pro Ile Leu Glu Asn Leu Ala Ala Glu Leu Pro His Val			
35	40	45	
Thr Ile Gly Lys Ile Asn Ile Asp Glu Asn Ser Lys Pro Ala Glu Thr			
50	55	60	
Tyr Glu Val Ser Ser Ile Pro Thr Leu Ile Leu Phe Lys Asp Gly Asn			
65	70	75	80
Glu Val Ala Arg Val Val Gly Leu Lys Asp Lys Glu Phe Leu Thr Asn			
85	90	95	
Leu Ile Asn Lys His Ala			
100			

<210>698

<211>156

<212>PRT

<213>Chlamydia pneumoniae

<400>698

Met Arg Val Val Leu His Cys Pro Asp Ile Pro Gln Asn Thr Gly Asn			
1	5	10	15
Ile Gly Arg Thr Cys Val Ala Leu Gly Ala Glu Leu Ile Leu Val Arg			
20	25	30	
Pro Leu Gly Phe Ser Leu Ala Asp Lys Phe Val Lys Arg Ala Gly Met			
35	40	45	
Asp Tyr Trp Asp Lys Leu Gln Leu Thr Val Val Asp Ser Ile Glu Glu			
50	55	60	
Ala Leu His Asp Val Pro Glu Asp Gln Ile Phe Cys Leu Cys Thr Lys			
65	70	75	80
Gly Ser Ala Ser Tyr Thr Glu Phe Ser Leu Pro Ser Ser Gly Thr Tyr			
85	90	95	
Val Phe Gly Ser Glu Ser Lys Gly Leu Pro Lys Glu Ile Leu Lys Lys			
100	105	110	
Tyr Tyr Lys Asn Cys Leu Arg Ile Pro Met Gln Gln Asp Ile Arg Ser			
115	120	125	
Leu Asn Leu Ala Thr Ser Val Gly Ile Val Leu Tyr Glu Val Val Arg			
130	135	140	
Gln Lys Thr Val Ala Leu Gln Lys Asn Pro Thr Val			
145	150	155	

<210>699

<211>258

<212>PRT

<213>Chlamydia pneumoniae

<400>699

Met Asn Arg Arg Trp Asn Leu Val Leu Ala Thr Val Ala Leu Ala Leu			
1	5	10	15
Ser Val Ala Ser Cys Asp Val Arg Ser Lys Asp Lys Asp Lys Asp Gln			
20	25	30	
Gly Ser Leu Val Glu Tyr Lys Asp Asn Lys Asp Thr Asn Asp Ile Glu			
35	40	45	
Leu Ser Asp Asn Gln Lys Leu Ser Arg Thr Phe Gly His Leu Leu Ala			
50	55	60	
Arg Gln Leu Arg Lys Ser Glu Asp Met Phe Phe Asp Ile Ala Glu Val			
65	70	75	80
Ala Lys Gly Leu Gln Ala Glu Leu Val Cys Lys Ser Ala Pro Leu Thr			
85	90	95	
Glu Thr Glu Tyr Glu Glu Lys Met Ala Glu Val Gln Lys Leu Val Phe			
100	105	110	
Glu Lys Lys Ser Lys Glu Asn Leu Ser Leu Ala Glu Lys Phe Leu Lys			
115	120	125	
Glu Asn Ser Lys Asn Ala Gly Val Val Glu Val Gln Pro Ser Lys Leu			
130	135	140	
Gln Tyr Lys Ile Ile Lys Glu Gly Ala Gly Lys Ala Ile Ser Gly Lys			
145	150	155	160
Pro Ser Ala Leu Leu His Tyr Lys Gly Ser Phe Ile Asn Gly Gln Val			

165 170 175
 Phe Ser Ser Ser Glu Gly Asn Asn Glu Pro Ile Leu Leu Pro Leu Gly
 180 185 190
 Gln Thr Ile Pro Gly Phe Ala Leu Gly Met Gln Gly Met Lys Glu Gly
 195 200 205
 Glu Thr Arg Val Leu Tyr Ile His Pro Asp Leu Ala Tyr Gly Thr Ala
 210 215 220
 Gly Gln Leu Pro Pro Asn Ser Leu Leu Ile Phe Glu Ile Asn Leu Ile
 225 230 235 240
 Gln Ala Ser Ala Asp Glu Val Ala Ala Val Pro Gln Glu Gly Asn Gln
 245 250 255
 Gly Glu

<210>700

<211>584

<212>PRT

<213>Chlamydia pneumoniae

<400>700

Met Lys Tyr Arg Thr His Arg Cys Asn Glu Leu Thr Ser Asn His Ile
 1 5 10 15
 Gly Glu Asn Val Gln Leu Ala Gly Trp Val His Arg Tyr Arg Asn His
 20 25 30
 Gly Gly Val Val Phe Ile Xaa Leu Arg Asp Arg Phe Gly Ile Thr Gln
 35 40 45
 Ile Val Cys Arg Glu Asp Glu Gln Pro Glu Leu His Gln Arg Leu Asp
 50 55 60
 Ala Val Arg Ser Glu Trp Val Leu Ser Val Arg Gly Lys Val Cys Pro
 65 70 75 80
 Arg Leu Ala Gly Met Glu Asn Pro Asn Leu Ala Thr Gly His Ile Glu
 85 90 95
 Val Glu Val Ala Ser Phe Glu Val Leu Ser Lys Ser Gln Asn Leu Pro
 100 105 110
 Phe Ser Ile Ala Asp Asp His Ile Asn Val Asn Glu Glu Leu Arg Leu
 115 120 125
 Glu Tyr Arg Tyr Leu Asp Met Arg Arg Gly Asp Ile Ile Glu Lys Leu
 130 135 140
 Leu Cys Arg His Gln Val Met Leu Ala Cys Arg Asn Phe Met Asp Ala
 145 150 155 160
 Gln Gly Phe Thr Glu Ile Val Thr Pro Val Leu Gly Lys Ser Thr Pro
 165 170 175
 Glu Gly Ala Arg Asp Tyr Leu Val Pro Ser Arg Ile Tyr Pro Gly Lys
 180 185 190
 Phe Tyr Ala Leu Pro Gln Ser Pro Gln Leu Phe Lys Gln Leu Leu Met
 195 200 205
 Val Gly Gly Leu Asp Arg Tyr Phe Gln Ile Ala Thr Cys Phe Arg Asp
 210 215 220
 Glu Asp Leu Arg Ala Asp Arg Gln Pro Glu Phe Ala Gln Ile Asp Ile
 225 230 235 240
 Glu Met Ser Phe Gly Asp Thr Gln Asp Leu Leu Pro Ile Ile Glu Gln
 245 250 255
 Leu Val Ala Thr Leu Phe Ala Thr Gln Gly Ile Glu Ile Pro Leu Pro
 260 265 270
 Leu Ala Lys Met Thr Tyr Gln Glu Ala Lys Asp Ser Tyr Gly Thr Asp
 275 280 285
 Lys Pro Asp Leu Arg Phe Asp Leu Lys Leu Lys Asp Cys Arg Asp Tyr
 290 295 300
 Ala Lys Arg Ser Ser Phe Ser Ile Phe Leu Asp Gln Leu Ala His Gly
 305 310 315 320
 Gly Thr Ile Lys Gly Phe Cys Val Pro Gly Gly Ala Thr Met Ser Arg
 325 330 335
 Lys Gln Leu Asp Gly Tyr Thr Glu Phe Val Lys Arg Tyr Gly Ala Met
 340 345 350
 Gly Leu Val Trp Ile Lys Asn Gln Glu Gly Lys Val Ala Ser Asn Ile
 355 360 365

Ala Lys Phe Met Asp Glu Glu Val Phe His Glu Leu Phe Ala Tyr Phe
 370 375 380
 Asp Ala Lys Asp Gln Asp Ile Leu Leu Leu Ile Ala Ala Pro Glu Ser
 385 390 395 400
 Val Ala Asn Gln Ser Leu Asp His Leu Arg Arg Leu Ile Ala Lys Glu
 405 410 415
 Arg Glu Leu Tyr Ser Asp Asn Gln Tyr Asn Phe Val Trp Ile Thr Asp
 420 425 430
 Phe Pro Leu Phe Ser Leu Glu Asp Gly Lys Ile Val Ala Glu His His
 435 440 445
 Pro Phe Thr Ala Pro Leu Glu Glu Asp Ile Pro Leu Leu Glu Thr Asp
 450 455 460
 Pro Leu Ala Val Arg Ser Ser Ser Tyr Asp Leu Val Leu Asn Gly Tyr
 465 470 475 480
 Glu Ile Ala Ser Gly Ser Gln Arg Ile His Asn Pro Asp Leu Gln Ser
 485 490 495
 Gln Ile Phe Thr Ile Leu Lys Ile Ser Pro Glu Ser Ile Gln Glu Lys
 500 505 510
 Phe Gly Phe Phe Ile Lys Ala Leu Ser Phe Gly Thr Pro Pro His Leu
 515 520 525
 Gly Ile Ala Leu Gly Leu Asp Arg Leu Val Met Val Leu Thr Ala Ala
 530 535 540
 Glu Ser Ile Arg Glu Val Ile Ala Phe Pro Lys Thr Gln Lys Ala Ser
 545 550 555 560
 Asp Leu Met Met Asn Ala Pro Ser Glu Ile Met Ser Ser Gln Leu Lys
 565 570 575
 Glu Leu Ser Ile Lys Val Ala Phe
 580

<210>701

<211>430

<212>PRT

<213>Chlamydia pneumoniae

<400>701

Val Thr Val Thr Leu Pro Lys Gly Val Phe Asp Ile Phe Pro Tyr Leu
 1 5 10 15
 Ala Asp Ala Lys Gln Leu Trp Arg His Thr Ser Leu Trp His Ser Val
 20 25 30
 Glu Lys Ala Ile His Thr Val Cys Met Leu Tyr Gly Phe Cys Glu Ile
 35 40 45
 Arg Thr Pro Ile Phe Glu Lys Ser Glu Val Phe Leu His Val Gly Glu
 50 55 60
 Glu Ser Asp Val Val Lys Lys Glu Val Tyr Ser Phe Leu Asp Arg Lys
 65 70 75 80
 Gly Arg Ser Met Thr Leu Arg Pro Glu Gly Thr Ala Ala Val Val Arg
 85 90 95
 Ser Phe Leu Glu His Gly Ala Ser His Arg Ser Asp Asn Lys Phe Tyr
 100 105 110
 Tyr Ile Leu Pro Met Phe Arg Tyr Glu Arg Gln Gln Ala Gly Arg Tyr
 115 120 125
 Arg Gln His His Gln Phe Gly Val Glu Ala Ile Gly Val Arg His Pro
 130 135 140
 Leu Arg Asp Ala Glu Val Leu Ala Leu Leu Trp Asp Phe Tyr Ser Arg
 145 150 155 160
 Val Gly Leu Gln His Met Gln Ile Gln Leu Asn Phe Leu Gly Gly Ser
 165 170 175
 Glu Thr Arg Phe Arg Tyr Asp Lys Val Leu Arg Ala Tyr Leu Lys Glu
 180 185 190
 Ser Met Gly Glu Leu Ser Ala Leu Ser Gln Gln Arg Phe Ser Thr Asn
 195 200 205
 Val Leu Arg Ile Leu Asp Ser Lys Glu Pro Glu Asp Gln Glu Ile Ile
 210 215 220
 Arg Gln Ala Pro Pro Ile Leu Asp Tyr Val Ser Asp Glu Asp Leu Lys
 225 230 235 240
 Tyr Phe Asn Glu Ile Leu Asp Ala Leu Arg Val Leu Glu Ile Pro Tyr

245 250 255
 Ala Ile Asn Pro Arg Leu Val Arg Gly Leu Asp Tyr Tyr Ser Asp Leu
 260 265 270
 Val Phe Glu Ala Thr Thr Thr Phe Gln Glu Val Ser Tyr Ala Leu Gly
 275 280 285
 Gly Gly Gly Arg Tyr Asp Gly Leu Ile Ser Ala Phe Gly Gly Ala Ser
 290 295 300
 Leu Pro Ala Cys Gly Phe Gly Val Gly Leu Glu Arg Ala Ile Gln Thr
 305 310 315 320
 Leu Leu Ala Gln Lys Arg Ile Glu Pro Gln Phe Pro His Lys Leu Arg
 325 330 335
 Leu Ile Pro Met Glu Pro Asp Ala Asp Gln Phe Cys Leu Glu Trp Ser
 340 345 350
 Gln His Leu Arg Arg Leu Gly Ile Pro Thr Glu Val Asp Trp Ser His
 355 360 365
 Lys Lys Val Lys Gly Ala Leu Lys Ala Ala Ser Thr Glu Gln Val Ser
 370 375 380
 Phe Val Cys Leu Ile Gly Glu Arg Glu Leu Ile Ser Gln Gln Leu Val
 385 390 395 400
 Ile Lys Asn Met Ser Leu Arg Lys Glu Phe Phe Gly Thr Lys Glu Glu
 405 410 415
 Val Glu Gln Arg Leu Leu Tyr Glu Ile Gln Asn Thr Pro Leu
 420 425 430

<210>702

<211>352

<212>PRT

<213>Chlamydia pneumoniae

<400>702

Met Asn Val Trp Thr Lys Phe Phe Gln Pro Pro Lys His Ile Lys Glu
 1 5 10 15
 Ile Glu Asp Gln Glu Val Val Lys Lys Tyr Lys Tyr Trp Arg Ile
 20 25 30
 Arg Ile Phe Tyr Ser Met Phe Ile Gly Tyr Ile Phe Tyr Tyr Phe Thr
 35 40 45
 Arg Lys Ser Phe Thr Phe Ala Met Pro Thr Leu Ile Ala Asp Leu Gly
 50 55 60
 Phe Asp Lys Ala Gln Leu Gly Ile Ile Gly Ser Thr Leu Tyr Phe Ser
 65 70 75 80
 Tyr Gly Ile Ser Lys Phe Val Ser Gly Val Met Ser Asp Gln Ser Asn
 85 90 95
 Pro Arg Tyr Phe Met Ala Ile Gly Leu Met Ile Thr Gly Leu Thr Asn
 100 105 110
 Ile Phe Phe Gly Met Ser Ser Ser Ile Val Leu Phe Ala Leu Trp Trp
 115 120 125
 Gly Leu Asn Gly Trp Phe Gln Gly Trp Gly Trp Pro Pro Cys Ala Arg
 130 135 140
 Leu Leu Thr His Trp Tyr Ala Lys Ser Glu Arg Gly Thr Trp Trp Ser
 145 150 155 160
 Val Trp Ser Thr Ser His Asn Ile Gly Gly Ala Leu Ile Pro Ile Leu
 165 170 175
 Thr Gly Phe Ile Ile Asp Tyr Ser Gly Trp Arg Gly Ala Met Tyr Val
 180 185 190
 Pro Gly Ile Leu Cys Ile Gly Met Gly Leu Val Leu Ile Asn Arg Leu
 195 200 205
 Arg Asp Thr Pro Gln Ser Leu Gly Leu Pro Pro Ile Glu Lys Tyr Lys
 210 215 220
 Arg Asp Pro His His Ala His His Glu Gly Lys Ser Ala Ser Glu Gly
 225 230 235 240
 Thr Glu Glu Ile Glu Arg Gly Leu Ser Thr Arg Glu Ile Leu Phe Thr
 245 250 255
 Tyr Val Leu Thr Asn Gln Trp Leu Trp Phe Leu Ala Ala Ala Ser Phe
 260 265 270
 Ph Ile Tyr Ile Val Arg Met Ala Val Asn Asp Trp Ser Ala Leu Phe
 275 280 285

Leu Ile Glu Thr Lys His Tyr Ala Ala Val Lys Ala Asn Phe Cys Val
 290 295 300
 Ser Leu Phe Glu Ile Gly Gly Leu Phe Gly Met Leu Val Ala Gly Trp
 305 310 315 320
 Leu Ser Asp Lys Ile Ser Lys Gly Asn Arg Gly Pro Met Lys Arg Pro
 325 330 335
 Leu Leu Phe Arg Phe Ala Val Cys Tyr Phe Arg His Val Val Phe Thr
 340 345 350

<210>703

<211>122

<212>PRT

<213>Chlamydia pneumoniae

<400>703

Asn Val Leu Phe Ser Leu Gly Leu Leu Phe Ala Ile Leu Gly Met Trp
 1 5 10 15
 Phe Ser Arg Ser His Asn Glu Trp Trp Val Asp Gly Thr Leu Leu Phe
 20 25 30
 Val Ile Gly Phe Phe Leu Tyr Gly Pro Gln Met Met Ile Gly Leu Ala
 35 40 45
 Ala Ala Glu Leu Ser His Lys Lys Ala Ala Gly Thr Ala Ser Gly Phe
 50 55 60
 Thr Gly Trp Phe Ala Tyr Phe Gly Ala Thr Phe Ala Gly Tyr Pro Leu
 65 70 75 80
 Gly Lys Val Thr Asp Val Trp Gly Trp Lys Gly Phe Phe Ile Ala Leu
 85 90 95
 Leu Ala Cys Ala Ser Ile Ala Leu Leu Phe Leu Pro Thr Trp Asn
 100 105 110
 Ala Thr Glu Lys Asn Thr Arg Ser Lys Ala
 115 120

<210>704

<211>1243

<212>PRT

<213>Chlamydia pneumoniae

<400>704

Gly Phe Phe Leu Thr Trp Ile Pro Leu His Cys His Ser Gln Tyr Ser
 1 5 10 15
 Val Leu Asp Ala Met Ser Ser Ile Lys Asp Phe Val Ala Lys Gly Gln
 20 25 30
 Glu Phe Gly Ile Pro Ala Leu Ala Leu Thr Asp His Gly Asn Leu Tyr
 35 40 45
 Gly Ala Val Asp Phe Tyr Lys Glu Cys Thr Gln Lys Gly Ile Gln Pro
 50 55 60
 Ile Ile Gly Cys Glu Cys Tyr Ile Ala Pro Gly Ser Arg Phe Asp Lys
 65 70 75 80
 Lys Lys Glu Lys Arg Ser Arg Ala Ala His His Leu Ile Leu Leu Cys
 85 90 95
 Lys Asn Glu Gln Gly Tyr Arg Asn Leu Cys Ile Leu Thr Ser Leu Ala
 100 105 110
 Phe Thr Glu Gly Phe Tyr Tyr Phe Pro Arg Ile Asp Lys Asp Leu Leu
 115 120 125
 Arg Gln Tyr Ser Glu Gly Leu Ile Cys Leu Ser Gly Cys Leu Ser Ser
 130 135 140
 Ser Val Ser Asp Ala Ala Leu Lys Ser Pro Glu Ala Leu Leu Leu Glu
 145 150 155 160
 Leu Gln Trp Phe Gln Asp Leu Phe Lys Asp Asp Tyr Phe Thr Glu Val
 165 170 175
 Gln Leu His Lys Met Ser Glu Glu Ser Ile Ala Gly Phe Lys Glu Glu
 180 185 190
 Trp Leu Lys Gln Glu Tyr Tyr Ser Leu Ile Glu Lys Gln Ile Lys Val
 195 200 205
 Asn Thr Ala Val Leu Glu Ala Ser Lys Arg Leu Gly Ile Pro Thr Val
 210 215 220
 Ala Thr Asn Asp Ile His Tyr Ile Asn Ala Asn Asp Trp Gln Ala His
 225 230 235 240

Glu Ile Leu Leu Asn Val Gln Ser Gly Glu Thr Val Arg Ile Ala Lys
 245 250 255
 Gln Asn Thr His Ile Pro Asn Pro Lys Arg Lys Val Tyr Arg Ser Arg
 260 265 270
 Glu Tyr Tyr Phe Lys Ser Pro Ala Gln Met Ala Glu Leu Phe Lys Asp
 275 280 285
 Ile Pro Glu Val Ile Ser Asn Thr Leu Glu Val Ala Lys Arg Cys Asp
 290 295 300
 Phe Thr Phe Asp Phe Ser Lys Lys His Tyr Pro Ile Tyr Val Pro Glu
 305 310 315 320
 Ser Leu Lys Thr Leu Asn Ser Tyr Thr Glu Glu Asp Arg Tyr Gln Ala
 325 330 335
 Ser Ala Val Phe Leu Lys Gln Leu Ala Glu Glu Ala Leu Pro Lys Lys
 340 345 350
 Tyr Ser Ser Glu Val Leu Ala His Ile Ala Lys Lys Phe Pro His Arg
 355 360 365
 Asp Pro Ile Asp Ile Val Lys Glu Arg Met Asp Met Glu Met Ala Ile
 370 375 380
 Ile Ile Pro Lys Gly Met Cys Asp Tyr Leu Leu Ile Val Trp Asp Ile
 385 390 395 400
 Ile His Trp Ala Lys Ala Asn Gly Ile Pro Val Gly Pro Gly Arg Gly
 405 410 415
 Ser Gly Ala Gly Ser Val Leu Leu Phe Leu Leu Gly Ile Thr Glu Ile
 420 425 430
 Glu Pro Ile Arg Phe Asp Leu Phe Phe Glu Arg Phe Ile Asn Pro Glu
 435 440 445
 Arg Leu Ser Tyr Pro Asp Ile Asp Ile Asp Ile Cys Met Ala Gly Arg
 450 455 460
 Glu Arg Val Ile Asn Tyr Ala Ile Glu Arg His Gly Lys Asp Asn Val
 465 470 475 480
 Ala Gln Ile Ile Thr Phe Gly Thr Met Lys Ala Lys Met Ala Val Lys
 485 490 495
 Asp Val Gly Arg Thr Leu Asp Met Ala Leu Ser Lys Val Asn His Ile
 500 505 510
 Ala Lys His Ile Pro Asp Leu Asn Thr Thr Leu Ser Lys Ala Leu Glu
 515 520 525
 Thr Asp Pro Asp Leu His Gln Leu Tyr Ile Asn Asp Ala Glu Ser Ala
 530 535 540
 Gln Val Ile Asp Met Ala Leu Cys Leu Glu Gly Ser Ile Arg Asn Thr
 545 550 555 560
 Gly Val His Ala Ala Gly Val Ile Ile Cys Gly Asp Gln Leu Thr Asn
 565 570 575
 His Ile Pro Ile Cys Ile Ser Lys Asp Ser Thr Met Ile Thr Thr Gln
 580 585 590
 Tyr Ser Met Lys Pro Val Glu Ser Val Gly Met Leu Lys Val Asp Leu
 595 600 605
 Leu Gly Leu Lys Thr Leu Thr Ser Ile Asn Ile Ala Met Ser Ala Ile
 610 615 620
 Glu Lys Lys Thr Gly Gln Ser Leu Ala Met Ala Thr Leu Pro Leu Asp
 625 630 635 640
 Asp Ala Thr Thr Phe Ser Leu Leu His Gln Gly Lys Thr Met Gly Ile
 645 650 655
 Phe Gln Met Glu Ser Lys Gly Met Gln Glu Leu Ala Lys Asn Leu Arg
 660 665 670
 Pro Asp Leu Phe Glu Glu Ile Ile Ala Met Gly Ala Leu Tyr Arg Pro
 675 680 685
 Gly Pro Met Asp Met Ile Pro Ser Phe Ile Asn Arg Lys His Gly Lys
 690 695 700
 Glu Ile Ile Glu Tyr Asp His Pro Leu Met Glu Ser Ile Leu Lys Glu
 705 710 715 720
 Thr Tyr Gly Ile Met Val Tyr Gln Glu Gln Val Met Gln Ile Ala Gly
 725 730 735
 Ala Leu Ala Ser Tyr Ser Leu Gly Glu Gly Asp Val Leu Arg Arg Ala
 740 745 750

Met Gly Lys Lys Asp Phe Gln Gln Met Glu Gln Glu Arg Glu Lys Phe	755	760	765
Cys Lys Arg Ala Cys Asn Asn Gly Ile Asp Pro Glu Leu Ala Thr Val	770	775	780
Ile Phe Asp Lys Met Glu Lys Phe Ala Ala Tyr Gly Phe Asn Lys Ser	785	790	795
His Ala Ala Ala Tyr Gly Leu Ile Thr Tyr Thr Thr Ala Tyr Leu Lys	805	810	815
Ala Asn Tyr Pro Lys Glu Trp Leu Ala Ala Leu Leu Thr Cys Asp Ser	820	825	830
Asp Asp Ile Glu Lys Ile Gly Lys Leu Ile Arg Glu Ala Gln Ser Met	835	840	845
Gly Ile Pro Ile Leu Pro Pro His Ile Asn Val Ser Ser Asn His Phe	850	855	860
Val Ala Thr Asp Glu Gly Ile Arg Phe Ala Met Gly Ala Ile Lys Gly	865	870	875
Ile Gly Arg Gly Leu Ile Glu Ser Ile Val Glu Glu Arg Asp His His	885	890	895
Gly Pro Tyr Glu Ser Ile Arg Asp Phe Ile Gln Arg Ser Asp Leu Lys	900	905	910
Lys Val Ser Lys Lys Ser Ile Glu Ser Leu Ile Asp Ala Gly Cys Phe	915	920	925
Asp Cys Phe Asp Ser Asn Arg Asp Leu Leu Leu Ala Ser Val Glu Pro	930	935	940
Leu Tyr Glu Ala Ile Ala Lys Asp Lys Lys Glu Ala Ala Ser Gly Val	945	950	955
Met Thr Phe Phe Thr Leu Gly Ala Met Asp Arg Lys Asn Glu Val Pro	965	970	975
Ile Cys Leu Pro Lys Asp Ile Pro Thr Arg Ser Lys Lys Glu Leu Leu	980	985	990
Lys Lys Glu Lys Glu Leu Leu Gly Ile Tyr Leu Thr Glu His Pro Met	995	1000	1005
Asp Thr Val Arg Asp His Leu Ser Arg Leu Ser Val Val Leu Ala Gly	1010	1015	1020
Glu Phe Glu Asn Leu Pro His Gly Ser Val Val Arg Thr Val Phe Ile	1025	1030	1035
Ile Asp Lys Val Thr Thr Lys Ile Ser Ser Lys Ala Gln Lys Lys Phe	1045	1050	1055
Ala Val Leu Arg Val Ser Asp Gly Ile Asp Ser Tyr Glu Leu Pro Ile	1060	1065	1070
Trp Pro Asp Met Tyr Glu Glu Gln Gln Glu Leu Leu Glu Glu Asp Arg	1075	1080	1085
Leu Ile Tyr Ala Ile Leu Val Leu Asp Lys Arg Ser Asp Ser Leu Arg	1090	1095	1100
Ile Ser Cys Arg Trp Met Lys Asp Leu Ser Ile Val Asn Glu Asn Ile	1105	1110	1115
Ile Tyr Glu Cys Asp Gln Ala Phe Asp Arg Ile Lys Asn Gln Val Gln	1125	1130	1135
Lys Met Ser Phe Thr Met Ser Thr Ser Gly Lys Glu Thr Lys Ala Lys	1140	1145	1150
Gly Asn Lys Pro Asn Glu Asn Gly His Thr Gln Ala Leu Ala Pro Val	1155	1160	1165
Thr Leu Ser Leu Asp Leu Asn Glu Leu Arg His Ser His Leu Cys Ile	1170	1175	1180
Leu Lys Lys Ile Val Gln Lys His Pro Gly Ser Arg Thr Leu Val Leu	1185	1190	1195
Val Phe Thr Gln Asp Asn Glu Arg Val Ala Ser Met Ser Pro Asp Asp	1205	1210	1215
Ala Tyr Phe Val Cys Glu Asp Ile Glu Glu Leu Arg Gln Glu Leu Val	1220	1225	1230
Thr Ala Asp Leu Pro Val Arg Val Ile Thr Val	1235	1240	

<210>705
<211>307

<212>PRT

<213>Chlamydia pneumoniae

<400>705

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Asn Ile Ser Leu Leu Cys Lys Ile Gln Lys Arg Tyr Phe Met Lys Lys
 1           5           10           15
Leu Ile Leu Tyr Phe Ala Ala Phe Val Ala Ser Leu Phe Cys Gly Val
           20           25           30
Phe Leu Trp Asp Arg Val Pro Cys Ala Gln Lys Ile Met Arg Leu Ala
           35           40           45
Ala Asp His Ser Ser Glu Val Phe Ser Lys Ser Cys Arg Phe Val Arg
           50           55           60
Lys Ile Ser Gly Phe Glu Glu Leu Gln Val Phe Glu Arg His Val Ser
           65           70           75           80
Pro Glu Gln Ala Leu Ala Leu Phe Pro Glu Tyr Arg Asp Gly Lys Ser
           85           90           95
Phe Val Glu Leu Ala Phe Ile Pro His Thr Leu Met His Val Arg Phe
           100          105          130
Ser Lys Glu Glu Pro Val Lys Lys His Ile Ile Ser Gln Glu Gly Glu
           115          120          125
Ile Leu Trp Ser Leu Val Asn Gly Glu Met Val Leu His Thr Gly Thr
           130          135          140
Trp Thr Cys Ser Lys Gly Phe Arg Glu Cys Leu Leu Leu His Ala Gly
           145          150          155          160
Lys Gln Asp Met Arg Val Ile Gln Thr Leu Ala Thr Leu Gly Gly Thr
           165          170          175
Thr Ser Arg Glu Ser Leu Ala Gln Ala Leu Ala Leu Lys Asn Ile Arg
           180          185          190
Ala Glu Arg Val Ile Lys Glu Cys Gln Lys Lys Lys Leu Ile Phe Ala
           195          200          205
Ser Gly Asn Gln Ile Gly Thr His Phe Gln Gln Phe Gln Pro Ile Arg
           210          215          220
Gly Cys Thr Thr Thr Leu Asn Asn Asn Pro Val Trp Leu Gln Lys Pro
           225          230          235          240
Arg His Ala Ala Val Phe Pro Ala Gln Tyr Ser Glu Asp Arg Val Arg
           245          250          255
His Leu Val Lys Met Ile Phe Gly Asp Asn Phe Leu Ile Val Arg Ser
           260          265          270
Ser Met Val Tyr Val Pro Val Tyr Lys Ile Ser Leu Val Ser Ala Asp
           275          280          285
Asn Ser Val Arg Val Glu Tyr Ile Asn Ala Val Thr Gly Lys Ser Phe
           290          295          300
Gln Asp Leu
           305

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<210>706

<211>171

<212>PRT

<213>Chlamydia pneumoniae

<400>706

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Trp Arg Phe Val Val Val Ser Pro Arg Leu Ile Met Lys Phe Leu Leu
 1           5           10           15
Tyr Val Pro Leu Leu Leu Val Leu Val Ser Thr Gly Cys Asp Ala Lys
           20           25           30
Pro Val Ser Phe Glu Pro Phe Ser Gly Lys Leu Ser Thr Gln Arg Phe
           35           40           45
Glu Pro Gln His Ser Ala Glu Glu Tyr Phe Ser Gln Gly Gln Glu Phe
           50           55           60
Leu Lys Lys Gly Asn Phe Arg Lys Ala L u Leu Cys Phe Gly Ile Ile
           65           70           75           80
Thr His His Phe Pro Arg Asp Ile Leu Arg Asn Gln Ala Gln Tyr Leu
           85           90           95
Ile Gly Val Cys Tyr Phe Thr Gln Asp His Pro Asp Leu Ala Asp Lys
           100          105          110
Ala Phe Ala Ser Tyr Leu Gln Leu Pro Asp Ala Glu Tyr Ser Glu Glu
           115          120          125

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Leu Phe Gln Met Lys Tyr Ala Ile Ala Gln Arg Phe Ala Gln Gly Lys
 130 135 140
 Arg Lys Arg Ile Cys Arg Leu Glu Gly Phe Pro Lys Leu Met Asn Ala
 145 150 155 160
 Asp Glu Asp Ala Tyr Ala Phe Met Thr Arg Phe
 165 170

<210>707

<211>167

<212>PRT

<213>Chlamydia pneumoniae

<400>707

Arg Cys Val Arg Ile Tyr Asp Glu Ile Leu Thr Ala Phe Pro Ser Lys
 1 5 10 15
 Asp Leu Gly Ala Gln Ala Leu Tyr Ser Lys Ala Ala Leu Leu Ile Val
 20 25 30
 Lys Asn Asp Leu Thr Glu Ala Thr Lys Thr Leu Lys Lys Leu Thr Leu
 35 40 45
 Gln Phe Pro Leu His Ile Leu Ser Ser Glu Ala Phe Val Arg Leu Ser
 50 55 60
 Glu Ile Tyr Leu Gln Gln Ala Lys Lys Glu Pro His Asn Leu Gln Tyr
 65 70 75 80
 Leu His Phe Ala Lys Leu Asn Glu Glu Ala Met Lys Lys Gln His Pro
 85 90 95
 Asn His Pro Leu Asn Glu Val Val Ser Ala Asn Val Gly Ala Met Arg
 100 105 110
 Glu His Tyr Ala Arg Gly Leu Tyr Ala Thr Gly Arg Phe Tyr Glu Lys
 115 120 125
 Lys Lys Lys Ala Glu Ala Ala Asn Ile Tyr Tyr Arg Thr Ala Ile Thr
 130 135 140
 Asn Tyr Pro Asp Thr Leu Leu Val Ala Lys Cys Gln Lys Arg Leu Asp
 145 150 155 160
 Arg Ile Ser Lys His Thr Ser
 165

<210>708

<211>212

<212>PRT

<213>Chlamydia pneumoniae

<400>708

Ile Glu Tyr Leu Ser Ile Leu Pro Lys Ile Glu Ile Asn Met Arg Leu
 1 5 10 15
 Phe Ser Leu Gly Thr Ile Tyr Leu Phe Phe Ser Leu Ala Leu Ser Ser
 20 25 30
 Cys Cys Gly Tyr Ser Ile Leu Asn Ser Pro Tyr His Leu Ser Ser Leu
 35 40 45
 Gly Lys Ser Leu Leu Gln Glu Arg Ile Phe Ile Ala Pro Ile Lys Glu
 50 55 60
 Asp Pro His Gly Gln Leu Cys Ser Ala Leu Thr Tyr Glu Leu Ser Lys
 65 70 75 80
 Arg Ser Phe Ala Ile Ser Gly Arg Ser Ser Cys Ala Gly Tyr Thr Leu
 85 90 95
 Lys Val Glu Leu Leu Asn Gly Ile Asp Lys Asn Ile Gly Phe Thr Tyr
 100 105 110
 Ala Pro Asn Lys Leu Gly Asp Lys Thr His Arg His Phe Ile Val Ser
 115 120 125
 Asn Glu Gly Arg Leu Ser Leu Ser Ala Lys Val Gln Leu Ile Asn Asn
 130 135 140
 Asp Thr Gln Glu Val Leu Ile Asp Gln Cys Val Ala Arg Glu Ser Val
 145 150 155 160
 Asp Phe Asp Phe Glu Pro Asp Leu Gly Thr Ala Asn Ala His Glu Phe
 165 170 175
 Ala Leu Gly Gln Phe Glu Met His Ser Glu Ala Ile Lys Ser Ala Arg
 180 185 190
 Arg Ile Leu Ser Ile Arg Leu Ala Glu Thr Ile Ala Gln Gln Val Tyr
 195 200 205

Tyr Asp Leu Phe

210

<210>709

<211>150

<212>PRT

<213>Chlamydia pneumoniae

<400>709

Leu Leu Asn Arg Tyr Thr Met Thr Phe Phe Glu Gly Glu Thr Val Phe
 1 5 10 15
 Pro Ala Val Leu Ser Glu Leu His Ser Met Leu Asp Leu Ile Lys Arg
 20 25 30
 Ala Gly Lys Gln Ser Lys Cys Pro Gln Glu Lys Leu Leu Lys Leu Glu
 35 40 45
 Leu Ala Cys Glu Glu Leu Leu Val Asn Ile Ile Ser Tyr Ala Tyr Gln
 50 55 60
 Gly Glu Asn Ser Pro Gly Thr Ile Ala Ile Ser Cys Ile Ser His Arg
 65 70 75 80
 Gly Asp Leu Glu Val Ile Lys Asp His Gly Pro Ser Phe Asn Pro
 85 90 95
 Leu Ala Val Ser Ile Asn Ile Gln Glu Asp Leu Pro Leu Glu Gln Arg
 100 105 110
 Lys Leu Gly Gly Leu Gly Ile Phe Leu Ala Lys Ser Ser Val Asp Glu
 115 120 125
 Phe Leu Tyr Ala Arg Glu Asp His Cys Asn Ile Val His Leu Lys Met
 130 135 140
 Leu Asn Gly Gln His Ser
 145 150

<210>710

<211>152

<212>PRT

<213>Chlamydia pneumoniae

<400>710

Arg Ile Thr Ile Asn Gln Arg Lys Tyr Thr Met Ser Leu Asp Phe Phe
 1 5 10 15
 Glu Glu Phe Tyr His Gln Ser Ile Leu Asn Thr Gly Thr Ser Phe Pro
 20 25 30
 Glu Gly Tyr Leu Asn Ile Ala Glu Ile Leu Ser Tyr Pro His Cys Thr
 35 40 45
 Asp Ala Asn Thr Asp Phe Leu Cys Ser Gln Ser Asp Asn Asp Phe Ile
 50 55 60
 Ile Ala Glu Ser Lys Asp Lys Leu Thr Leu Phe Asn Ala Asp Phe Ala
 65 70 75 80
 Ile Trp Leu Val Pro Glu Leu Val Gln Gly Gln Ala Val Thr Arg Gly
 85 90 95
 Tyr Ile Ala Val Ser Gln Gly Glu Gly Asn Tyr Glu Pro Glu Met Ala
 100 105 110
 Phe Glu Ala Ser Gly Gln Tyr Asn Gln Ser Ser Leu Ile Leu Glu Ala
 115 120 125
 Leu Gln Leu Tyr Leu Lys Asp Ile Lys Asp Thr Glu Asn Ala Leu Arg
 130 135 140
 Ser Phe Arg Phe Asn Asn Asp His
 145 150

<210>711

<211>436

<212>PRT

<213>Chlamydia pneumoniae

<400>711

Met Lys Arg Pro Phe Phe Thr Tyr Leu Cys Ile Ile Phe Tyr Gly Ser
 1 5 10 15
 Cys Ala Ser Leu Ser Leu His Ala Gly Leu Ser Phe Pro Glu Val Arg
 20 25 30
 Gly Ala Thr Ala Ala Val Val His Ala Asp Ser Gly Lys Val Phe Tyr
 35 40 45
 Asp Lys Asp Ile Asp Ala Val Ile Tyr Pro Ala Ser Met Thr Lys Ile

50					55					60					
Ala	Thr	Ala	Leu	Phe	Ile	Leu	Lys	His	Tyr	Pro	Thr	Val	Leu	Asp	Thr
65				70						75					80
Leu	Ile	Lys	Val	Lys	Gln	Asp	Ala	Ile	Ala	Ser	Ile	Thr	Pro	Gln	Ala
				85						90					95
Lys	Lys	Gln	Ser	Gly	Tyr	Arg	Ser	Pro	Pro	His	Trp	Leu	Glu	Thr	Asp
				100						105					110
Gly	Ser	Thr	Ile	Gln	Leu	His	Leu	Arg	Glu	Glu	Leu	Leu	Gly	Trp	Asp
				115						120					125
Leu	Phe	His	Ala	Leu	Leu	Val	Cys	Ser	Ala	Asn	Asp	Ala	Ala	Asn	Val
				130						135					140
Leu	Ala	Met	Ala	Cys	Cys	Gly	Ser	Val	Glu	Lys	Phe	Met	Asp	Lys	Leu
145				150						155					160
Asn	Phe	Phe	Leu	Lys	Glu	Glu	Ile	Gly	Cys	Thr	His	Thr	His	Phe	Asn
				165						170					175
Asn	Pro	His	Gly	Leu	His	His	Pro	Asn	His	Tyr	Thr	Thr	Thr	Arg	Asp
				180						185					190
Leu	Ile	Ser	Ile	Met	Arg	Cys	Ala	Leu	Lys	Glu	Pro	Pro	Phe	Arg	Gly
				195						200					205
Val	Ile	Ser	Thr	Thr	Ser	Tyr	Lys	Ile	Gly	Ala	Thr	Asn	Leu	His	Gly
				210						215					220
Glu	Arg	Ile	Leu	Ser	Pro	Thr	Asn	Lys	Leu	Leu	Leu	Pro	Gly	Ser	Thr
325				230						235					240
Tyr	His	Tyr	Pro	Pro	Ala	Leu	Gly	Gly	Lys	Thr	Gly	Thr	Thr	Lys	Thr
				245						250					255
Ala	Gly	Lys	Asn	Leu	Ile	Met	Ala	Ala	Glu	Lys	Asn	Asn	Arg	Leu	Leu
				260						265					270
Val	Thr	Ile	Ala	Thr	Gly	Tyr	Ser	Gly	Pro	Val	Ser	Asp	Leu	Tyr	Gln
				275						280					285
Asp	Val	Ile	Ala	Leu	Cys	Glu	Thr	Val	Phe	Asn	Glu	Pro	Leu	Leu	Arg
				290						295					300
Lys	Glu	Leu	Val	Pro	Pro	Ser	Asp	Cys	Leu	Gln	Leu	Glu	Ile	Ala	Asn
305				310						315					320
Leu	Gly	Lys	Leu	Ser	Cys	Pro	Leu	Pro	Glu	Gly	Leu	Tyr	Tyr	Asp	Phe
				325						330					335
Tyr	Ala	Ser	Glu	Asp	Arg	Glu	Pro	Leu	Ser	Val	Ser	Phe	Ile	Ala	His
				340						345					350
Ala	Asp	Ala	Phe	Pro	Ile	Glu	Gln	Gly	Asp	Leu	Leu	Gly	His	Trp	Val
				355						360					365
Phe	Tyr	Asp	Asp	Glu	Gly	Lys	Lys	Ile	Ser	Ser	Gln	Pro	Phe	Tyr	Ala
				370						375					380
Pro	Cys	Arg	Phe	Glu	Arg	Thr	Ile	Lys	Pro	Trp	Lys	Leu	Tyr		

<210>712

42112371

4212 PRT

<223>Chlamydia pneumoniae

400-712

Arg	Gly	Ile	Leu	Tyr	Val	Thr	Met	Val	Pro	Phe	Arg	Gln	His	His	Ala
1				5					10					15	
Tyr	Gln	Leu	Leu	Lys	Gln	Leu	His	Thr	Ser	Ala	Ile	Ser	Glu	Ala	Asp
			20					25					30		
Arg	Val	Ser	Tyr	Tyr	Phe	Lys	Gln	Asn	Arg	Ser	Leu	Gly	Ser	Lys	Asp
		35				40						45			
Arg	Gln	Trp	Ile	Gln	Asn	Ile	Ile	Phe	Asn	Ile	Leu	Arg	His	Arg	Arg
	50					55					60				
Leu	Leu	Glu	Thr	Leu	Ile	Leu	Asp	Ser	Gly	Glu	Gln	Val	Thr	Pro	Glu
65					70					75					80

Ala Leu Val Ala Lys Val Asn Glu Gly Val Leu Glu Asn Leu Asp Ser
85 90 95
Tyr Ser Ala Ile Pro Trp Pro Val Arg Tyr Ser Ile Ser Asp Asp Leu
100 105 110
Ala His Phe Leu Val Gln Asp Tyr Gly Glu Glu Gln Ala Glu Glu Ile
115 120 125
Ala Lys Ile Trp Leu Thr Glu Ala Pro Ile Thr Ile Arg Val Asn Thr
130 135 140
Asp Lys Ile Ser Val Lys Glu Leu Gln Glu Lys Leu Glu Tyr Pro Ser
145 150 155 160
Ser Pro Gly Glu Leu Pro Glu Ala Leu His Phe Ser Lys Arg His Pro
165 170 175
Leu Gln Ser Thr Glu Ala Phe Arg Arg Gly Phe Phe Glu Ile Gln Asp
180 185 190
Glu Asn Ser Gln Arg Ile Ser Gln Gly Ile Ser Leu Thr Asp Lys Asp
195 200 205
Ile Val Leu Asp Phe Cys Ala Gly Ala Gly Gly Lys Ser Leu Ile Phe
210 215 220
Ala Gln Lys Ala Lys His Val Val Ile Asn Asp Ser Arg Lys Ala Ile
225 230 235 240
Leu Gln Thr Ala Lys His Arg Leu Leu Arg Ala Gly Ala Arg Asn Phe
245 250 255
Ser Leu Ala Asp Gln Leu Arg Leu Gly Ser Phe Ser Val Val Ile Val
260 265 270
Asp Ala Pro Cys Ser Gly Thr Gly Val Phe Arg Arg His Pro Glu His
275 280 285
Lys Trp Gln Phe Ser Lys Lys Leu Leu Leu Asn Tyr Val Arg Val Gln
290 295 300
Lys Ser Ile Leu Lys Gln Ala Ser Ala Tyr Val Gly Pro Arg Gly Arg
305 310 315 320
Leu Val Tyr Ile Thr Cys Ser Leu Leu Lys Glu Glu Asn Glu Ala His
325 330 335
Val Ala Tyr Met His Ser Leu Gly Trp Lys Glu Val His Arg Lys Thr
340 345 350
Leu Pro Leu Gln Val Gly Lys Gly Asp Ala Phe Phe Thr Ser His Phe
355 360 365
Gln Lys Ile
370

<210>713

<211>388

<212>PRT

<213>Chlamydia pneumoniae

<400>713

Val Pro Leu Ser Met Ile Leu Asp Phe Gln Phe Ser Ile Gly Tyr Tyr
1 5 10 15
Leu Arg Val Leu Glu Leu Ala Ile Arg Asp Gly Thr Arg Ile Leu Ala
20 25 30
Tyr Asp Arg Lys Arg Leu Leu Leu Asp Ala Trp Pro Val Asn Asp Pro
35 40 45
Leu Pro Thr Asn Tyr Asp Thr Ser Val Ser Thr Ile Arg Gln Val Ile
50 55 60
His Glu Leu Phe Ser Trp Ser Ala Ile Ser Tyr Ser Ile Ser Ser Arg
65 70 75 80
Leu Leu Ala Ile Ile Glu Leu Arg Leu His Glu Glu Lys Pro Gln Thr
85 90 95
Gly Trp Leu Tyr Arg Leu Phe Phe Pro Ser Lys Tyr His Ile Lys Lys
100 105 110
Ala Ile Val Asp Lys Leu Cys Met Phe Lys Ser Leu Ile Leu Phe Glu
115 120 125
Ser Lys Arg Pro Val Asp Lys Ile Val Gln Ala Ala Asn Lys Val Phe
130 135 140
Ser Lys Gly Lys Ser Asn Phe Ser Ser Trp Glu Asp Phe Thr His Glu
145 150 155 160
Val Thr Val Ser Glu Val Gln Thr Pro Leu Ala Gly Glu Val Gln Arg

				165				170				175	
Arg	Leu	Ala	Ala	Asp	Ala	Ser	Leu	Gln	Met	Ile	Ile	Glu	Ala
			180					185				190	
Thr	Leu	Leu	Glu	Gly	His	Thr	Ala	Tyr	Leu	Pro	Leu	Ser	Leu
		195					200					205	
Leu	Asn	Gln	Phe	Ile	Gly	Glu	Lys	Ala	Gln	Pro	Leu	Lys	Thr
		210				215					220		
Glu	Lys	Ser	Tyr	Val	Leu	Leu	Arg	Glu	Leu	Ile	Gln	Leu	Phe
225				230					235				240
Ser	Ala	Glu	Asp	Phe	Gln	Thr	Ile	Ile	Met	Ser	Ile	Ile	Ser
			245						250				255
Leu	Ser	Glu	Val	Leu	Ala	Asn	Ser	Leu	Ile	Gly	Asn	Gln	Pro
		260						265				270	
Phe	His	Gly	Lys	Thr	Phe	Val	Gly	Leu	Trp	Gln	Glu	Thr	Ala
		275					280					285	
Ser	Pro	Glu	Asp	Ser	Lys	Leu	Ala	Leu	Gly	Phe	Leu	Ala	Glu
	290				295						300		
Arg	Lys	Val	Ile	Val	Glu	Lys	Lys	Leu	His	Val	Ser	Lys	Ser
305				310						315			320
Thr	Thr	Pro	Glu	Glu	Val	Gly	Asn	Ile	Tyr	Ser	Ile	Arg	Asp
			325						330				335
Pro	Ala	Leu	Trp	Asp	Lys	Met	Ile	Thr	Met	Leu	Leu	Met	Arg
		340						345				350	
Leu	Asp	Tyr	Asp	Arg	Asp	Ile	Gly	Ile	Ala	Leu	Arg	Lys	Ala
	355					360					365		
Tyr	Tyr	Asn	Pro	His	Pro	Ser	Phe	Trp	Arg	Gln	Phe	Leu	Arg
	370				375						380		
Gln	Arg	Arg	Pro										

385

<210>714

<211>82

<212>PRT

<213>Chlamydia pneumoniae

<400>714

Phe	Thr	Ser	Pro	Tyr	Leu	Gly	Ala	Gly	Gln	Cys	Val	Ser	Val	Val	Asp
1				5					10						15
Asn	Leu	Lys	Thr	Tyr	Asp	Leu	Gly	Arg	Asn	Tyr	Thr	Gln	Val	Leu	Ala
		20					25						30		
Cys	Ala	Ser	Gln	Ile	Asp	Glu	Phe	Ala	Asp	Lys	Gly	Glu	Asn	Glu	Ala
		35					40					45			
Leu	Val	Met	Lys	Asp	Ile	Leu	Tyr	Leu	Val	Arg	Gln	Asp	Arg	Ser	Lys
	50					55					60				
Glu	Leu	Gly	Asp	Phe	Leu	Met	Met	Trp	Ser	Glu	Glu	His	Ala	Ser	Glu
	65				70					75					80
Val	Asn														

<210>715

<211>264

<212>PRT

<213>Chlamydia pneumoniae

<400>715

Ser	Met	Gly	Thr	Pro	Ile	Ser	Gly	Asn	Asp	Gly	Asp	Arg	Asn	Thr	Ile
1				5					10					15	
Ser	Asp	Pro	Leu	Glu	Glu	Ser	Ala	Ala	Glu	Glu	Gly	Asp	Ser	Asp	Leu
		20					25						30		
Glu	Asp	Arg	Val	Ser	Glu	Ser	Ala	Thr	Gln	Val	Ile	Glu	Thr	Ile	Ala
	35						40					45			
Asp	Thr	Gly	Ile	Pro	Glu	Ala	Thr	Pro	Ser	Glu	Gly	Thr	Asn	Ser	Asp
	50					55					60				
Leu	Asn	Ser	Asp	Leu	Val	Asp	Arg	Val	Glu	Tyr	Glu	Ala	Arg	Gly	Ser
	65				70					75					80
Leu	Leu	Thr	Thr	Met	Leu	Ala	Arg	Ile	Arg	Lys	Ala	Val	Ser	Gln	Ile
				85					90					95	
Trp	Met	His	Val	Lys	Thr	Lys	Arg	His	Pro	Lys	Glu	Gln	Gly	Val	Arg

100	105	110
Ser Leu Gly Asp Ile Pro Cys Asp Leu Leu Lys Ala Thr Arg Leu Pro		
115	120	125
Lys Glu Thr Ala Glu Pro Pro Tyr Phe Tyr Ala Leu Glu Thr Ala Leu		
130	135	140
Ala Ser Cys Arg Ser Phe Phe Phe His Val Phe Leu Arg Leu Phe Thr		
145	150	155
Leu Leu Arg Arg Gln His Pro Glu Ala Pro Leu Asp Leu Cys Gly Thr		
165	170	175
Asp Pro Ile Ser Pro Glu Ala Ala Val Ala Phe Ala Leu Ile Leu Arg		
180	185	190
Ser Cys Cys Lys Trp Val Ala Thr Asp Ala Val Gln Glu Gly Leu Pro		
195	200	205
Leu Glu Val Ile Glu Glu Ala Gly Met Tyr Asn Ala Phe Ser Leu Glu		
210	215	220
Ala Thr Thr Thr Val Glu Glu Val Ser Lys Arg Leu Ser Glu Leu Leu		
225	230	235
Tyr Ser Asp Lys Arg Ile Asp Gly Leu Ala Asn Val Arg Gly Ile Thr		
245	250	255
Lys Ile Asn Leu Pro Leu Leu Ile		
260		

<210>716

<211>385

<212>PRT

<213>Chlamydia pneumoniae

<400>716

Arg Ile Ala Met Gly Ile Asn Pro Ser Gly Asn Arg Ser Pro Asp Asp		
1	5	10
Val Trp Val Arg Gly Ala Gln Gly Asp Ser Ser Ser Thr Gln Gly Thr		
20	25	30
Gly Ala Thr Asn Ser Asn Leu Gly Ala His Asn Val Thr Thr Ser Thr		
35	40	45
Ser Gln Pro Gln Val Ala Ser Lys Ala Lys Gln Leu Trp Gln Thr Val		
50	55	60
Arg Glu Phe Phe Leu Gly Lys Lys Ser Pro Asp Ser Ser Gln Gly Ala		
65	70	75
Ser Gly Pro Ala Met Gln Ser Pro Ser Gly Pro Thr Ile Arg Pro Thr		
85	90	95
Arg Pro Ala Pro Pro Pro Pro Thr Thr Gly Gly Ala Asn Ala Lys Arg		
100	105	110
Pro Ala Thr His Gly Lys Gly Arg Ala Pro Gln Pro Pro Thr Ala Gly		
115	120	125
Ser Ser Ser Gly Ser Glu Gln Pro Thr Ala Met Ser Ser Glu Val Ala		
130	135	140
Lys Leu Val Ser Glu Leu Lys Asp Ala Val His Ser His Ala Glu Ser		
145	150	155
Gln Lys Val Leu Lys Lys Val Ser Gln Glu Leu Gln Thr Lys Trp Thr		
165	170	175
Asp Trp Glu Asn Asn Arg Gly Pro Asp Tyr Leu Leu His Gly Tyr Arg		
180	185	190
Val Ile Ala Arg Ala Leu Gln Gln Thr Tyr Thr Glu Gln Ser Met Leu		
195	200	205
Ile Glu Gly Thr Ser Ser Thr Gly Pro Val Pro Gln Ala Val Thr Val		
210	215	220
Ala Lys Asp Ala Val Thr Gln Thr Val Arg Gly Ala Ile Lys Asn Leu		
225	230	235
Glu Asn Pro Lys Pro Gly Asn Asp Pro Asp Gly Val Leu Met Gln Val		
245	250	255
Val Ile Ser Leu Gly Ile Glu Gly Pro Thr Leu Asp Pro Gly Glu Ser		
260	265	270
Ile Gln Asn Phe Leu Glu Thr Arg Val Ser Asp Phe Gly Gly Asp Asp		
275	280	285
Ser Asp Ile Asp Tyr Thr Ser Asp Ile Ala Arg Leu Gly Ser Ala Leu		
290	295	300

Asp Arg Val Arg Glu Ala His Pro Asn Glu Met Pro Arg Ile Trp Ile
 305 310 315 320
 Ala Leu Ala Arg Glu Leu Gly Ala Ala Val His Ser His Ala Thr Ser
 325 330 335
 Val Arg Ile Ala Asn Ala Gly Lys Asn His Thr Arg Asp Val Val Arg
 340 345 350
 Met Ala Asn Glu Ser Ser Arg Leu Leu Gln Gly Met Lys Val Leu Ser
 355 360 365
 Val Gly Ala Trp Ala Asn Thr Met Thr Val Leu Ile Gly Asp Leu Phe
 370 375 380

Glu

385

<210>717

<211>216

<212>PRT

<213>Chlamydia pneumoniae

<400>717

Lys Ile Ile Met Ser Val Asn Pro Ser Gly Asn Ser Lys Asn Asp Leu
 1 5 10 15
 Trp Ile Thr Gly Ala His Asp Gln His Pro Asp Val Lys Glu Ser Gly
 20 35 30
 Val Thr Ser Ala Asn Leu Gly Ser His Arg Val Thr Ala Ser Gly Gly
 35 40 45
 Arg Gln Gly Leu Leu Ala Arg Ile Lys Glu Ala Val Thr Gly Phe Phe
 50 55 60
 Ser Arg Met Ser Phe Phe Arg Ser Gly Ala Pro Arg Gly Ser Gln Gln
 65 70 75 80
 Pro Ser Ala Pro Ser Ala Asp Thr Val Arg Ser Pro Leu Pro Gly Gly
 85 90 95
 Asp Ala Arg Ala Thr Glu Gly Ala Gly Arg Asn Leu Ile Lys Lys Gly
 100 105 110
 Tyr Gln Pro Gly Met Lys Val Thr Ile Pro Gln Val Pro Gly Gly Gly
 115 120 125
 Ala Gln Arg Ser Ser Gly Ser Thr Thr Leu Lys Pro Thr Arg Pro Ala
 130 135 140
 Pro Pro Pro Pro Lys Thr Gly Gly Thr Asn Ala Lys Arg Pro Ala Thr
 145 150 155 160
 His Gly Lys Gly Pro Ala Pro Gln Pro Pro Lys Thr Gly Gly Thr Asn
 165 170 175
 Ala Lys Arg Ala Ala Thr His Gly Lys Gly Pro Ala Pro Gln Pro Pro
 180 185 190
 Lys Gly Ile Leu Lys Gln Pro Gly Gln Ser Gly Thr Ser Gly Lys Lys
 195 200 205
 Arg Val Ser Trp Ser Asp Glu Asp
 210 215

<210>718

<211>404

<212>PRT

<213>Chlamydia pneumoniae

<400>718

Gly Tyr Met Asp Lys Leu Thr Val Gln Asp Leu Ser Pro Glu Glu Lys
 1 5 10 15
 Lys Val Leu Val Arg Val Asp Phe Asn Val Pro Met Gln Asp Gly Lys
 20 25 30
 Ile Leu Asp Asp Ile Arg Ile Arg Ser Ala Met Pro Thr Ile Asn Tyr
 35 40 45
 Leu Leu Lys Lys His Ala Ala Val Ile Leu Met Ser His Leu Gly Arg
 50 55 60
 Pro Lys Gly Gln Gly Phe Gln Glu Glu Tyr Ser Leu Gln Pro Val Val
 65 70 75 80
 Asp Val Leu Glu Gly Tyr Leu Gly His His Val Pro Leu Ala Pro Asp
 85 90 95
 Cys Val Gly Glu Val Ala Arg Gln Ala Val Ala Gln Leu Ser Pro Gly
 100 105 110

Arg Val Leu Leu Leu Glu Asn Leu Arg Phe His Ile Gly Glu Glu His
 115 120 125
 Pro Glu Lys Asp Pro Thr Phe Ala Ala Glu Leu Ser Ser Tyr Gly Asp
 130 135 140
 Phe Tyr Val Asn Asp Ala Phe Gly Thr Ser His Arg Lys His Ala Ser
 145 150 155 160
 Val Tyr Val Val Pro Gln Ala Phe Pro Gly Arg Ala Ala Ala Gly Leu
 165 170 175
 Leu Met Glu Lys Glu Leu Glu Phe Leu Gly Arg His Leu Leu Thr Ser
 180 185 190
 Pro Lys Arg Pro Phe Thr Ala Ile Leu Gly Gly Ala Lys Ile Ser Ser
 195 200 205
 Lys Ile Gly Val Ile Glu Ala Leu Leu Asn Gln Val Asp Tyr Leu Leu
 210 215 220
 Leu Ala Gly Gly Met Gly Phe Thr Phe Leu Gln Ala Leu Gly Lys Ser
 225 230 235 240
 Leu Gly Asn Ser Leu Val Glu Lys Ser Ala Leu Asp Leu Ala Arg Asn
 245 250 255
 Val Leu Lys Ile Ala Lys Ser Arg Asn Val Thr Ile Val Leu Pro Ser
 260 265 270
 Asp Val Lys Ala Ala Glu Asn Leu Gln Ser Lys Glu Tyr Ser Val Ile
 275 280 285
 Ser Ile Asp Gln Gly Ile Pro Pro His Leu Gln Gly Phe Asp Ile Gly
 290 295 300
 Pro Arg Thr Thr Glu Glu Phe Ile Arg Ile Ile Asn Gln Ser Ala Thr
 305 310 315 320
 Val Phe Trp Asn Gly Pro Val Gly Val Tyr Glu Val Pro Pro Phe Asp
 325 330 335
 Ser Gly Ser Ile Ala Ile Ala Asn Ala Leu Gly Asn His Pro Ser Ala
 340 345 350
 Val Thr Val Val Gly Gly Gly Asp Ala Ala Ala Val Val Ala Leu Ala
 355 360 365
 Gly Cys Ser Thr Lys Val Ser His Val Ser Thr Gly Gly Gly Ala Ser
 370 375 380
 Leu Glu Phe Leu Glu Gln Gly Phe Leu Pro Gly Thr Glu Val Leu Ser
 385 390 395 400
 Pro Ser Lys Ser

<210>719

<211>121

<212>PRT

<213>Chlamydia pneumoniae

<400>719

Trp Asn Lys Ala Leu Lys Ala Lys Lys Lys Ser Met Asp Asn Lys Ala
 1 5 10 15
 Pro Ala Gly Ser Val Ile Asn Gln Glu Ser Thr Ile Ser Leu Ile Met
 20 25 30
 Phe Lys Leu Met Ala Arg Ile Pro Arg Ala Lys Pro Ile Pro Lys Thr
 35 40 45
 Ala Pro Thr Thr Thr Cys Val Val Asp Ile Gly Ser Pro Lys Ile Glu
 50 55 60
 Ala Lys Ala Ile Val Asn Ala Glu Pro Ile Pro Thr Glu Asn Pro Arg
 65 70 75 80
 Asp Gly Val Asn Ser Val Ile Leu Gln Pro Thr Val Ser Ile Thr Arg
 85 90 95
 His Pro Gln Ile Ala Arg Pro Met Thr Lys Pro Met Pro Pro Asn Ala
 100 105 110
 Met Ser Leu Ile Asn Val Tyr Asp Val
 115 120

<210>720

<211>428

<212>PRT

<213>Chlamydia pneumoniae

<400>720

Tyr Ser Met Leu Pro Leu Ile Ile Phe Val Leu Leu Cys Gly Phe Tyr
1 5 10 15
Thr Ser Trp Asn Ile Gly Ala Asn Asp Val Ala Asn Ala Val Gly Pro
20 25 30
Ser Val Gly Ser Gly Val Leu Thr Leu Arg Gln Ala Val Val Ile Ala
35 40 45
Ala Ile Phe Glu Phe Phe Gly Ala Leu Leu Leu Gly Asp Arg Val Ala
50 55 60
Gly Thr Ile Glu Ser Ser Ile Val Ser Val Thr Asn Pro Met Ile Ala
65 70 75 80
Ser Gly Asp Tyr Met Tyr Gly Met Thr Ala Ala Leu Leu Ala Thr Gly
85 90 95
Val Trp Leu Gln Leu Ala Ser Phe Phe Gly Trp Pro Val Ser Thr Thr
100 105 110
His Ser Ile Val Gly Ala Val Ile Gly Phe Gly Leu Val Leu Gly Lys
115 120 125
Gly Thr Ile Ile Tyr Trp Asn Ser Val Gly Ile Ile Leu Ile Ser Trp
130 135 140
Ile Leu Ser Pro Phe Met Gly Gly Cys Val Ala Tyr Leu Ile Phe Ser
145 150 155 160
Phe Ile Arg Arg His Ile Phe Tyr Lys Asn Asp Pro Val Leu Ala Met
165 170 175
Val Arg Val Ala Pro Phe Leu Ala Ala Leu Val Ile Met Thr Leu Gly
180 185 190
Thr Val Met Ile Ser Gly Gly Val Ile Leu Lys Val Ser Ser Thr Pro
195 200 205
Trp Ala Val Ser Gly Val Leu Val Cys Gly Leu Leu Ser Tyr Ile Ile
210 215 220
Thr Phe Tyr Tyr Val His Thr Lys His Cys Ser Tyr Ile Ser Asp Thr
225 230 235 240
Pro Lys Lys Gly Ser Leu Thr Tyr Arg Leu Lys Glu Arg Gly Gly Asn
245 250 255
Tyr Gly Arg Lys Tyr Leu Val Val Glu Arg Ile Phe Ala Tyr Leu Gln
260 265 270
Ile Ile Val Ala Cys Phe Met Ala Phe Ala His Gly Ser Asn Asp Val
275 280 285
Ala Asn Ala Ile Ala Pro Val Ala Gly Val Leu Arg Gln Ala Tyr Pro
290 295 300
Ala Ser Tyr Thr Ser Tyr Thr Leu Ile Arg Leu Met Ala Phe Gly Gly
305 310 315 320
Ile Gly Leu Val Ile Gly Leu Ala Ile Trp Gly Trp Arg Val Ile Glu
325 330 335
Thr Val Gly Cys Lys Ile Thr Glu Leu Thr Pro Ser Arg Gly Phe Ser
340 345 350
Val Gly Met Gly Ser Ala Leu Thr Ile Ala Leu Ala Ser Ile Leu Gly
355 360 365
Leu Pro Ile Ser Thr Thr His Val Val Val Gly Ala Val Leu Gly Ile
370 375 380
Gly Leu Ala Arg Gly Ile Arg Ala Ile Asn Leu Asn Ile Ile Lys Asp
385 390 395 400
Ile Val Leu Ser Trp Phe Ile Thr Leu Pro Ala Gly Ala Leu Leu Ser
405 410 415
Ile Leu Phe Phe Phe Ala Leu Arg Ala Leu Phe His
420 425

<210>721

<211>248

<212>PRT

<213>Chlamydia pneumoniae

<400>721

Asn Gly Ile Arg Ser His Lys Ser Phe Thr Arg Ser Phe Arg Gln Val
1 5 10 15
Ile Ile Ala Lys Lys Ala Ile Leu Met Gln Thr Leu Ala Arg Leu Phe
20 25 30
Gly Gln Ser Pro Phe Ala Pro Leu Gln Ala His Leu Glu Met Val Val

35 40 45
 Ser Cys Val Glu Tyr Met Leu Pro Ile Phe Thr Ala Leu Arg Asp Gly
 50 55 60
 Arg Tyr Glu Glu Leu Leu Glu Met Ala Lys Leu Val Ser Asp Lys Glu
 65 70 75 80
 Tyr Gln Ala Asp Cys Ile Lys Asn Asp Met Arg Asn His Leu Pro Ala
 85 90 95
 Gly Leu Phe Met Pro Ile Ser Arg Ala Gly Ile Leu Glu Ile Ile Ser
 100 105 110
 Ile Gln Asp Ser Ile Ala Asp Thr Ala Glu Asp Val Ala Ile Leu Leu
 115 120 125
 Thr Ile Arg Arg Leu Asn Phe Tyr Pro Ser Met Glu Thr Leu Phe Phe
 130 135 140
 Arg Phe Leu Glu Lys Asn Leu Glu Ala Phe Glu Leu Thr Met Thr Leu
 145 150 155 160
 Leu His Glu Phe Asn Gln Leu Leu Glu Ser Ser Phe Gly Gly Arg Lys
 165 170 175
 Ala Asp Lys Ala Arg Leu Leu Val Gly Arg Val Ala Lys Ser Glu His
 180 185 190
 Glu Ser Asp Val Leu Gln Arg Glu Leu Met Gln Ile Phe Phe Ser Asp
 195 200 205
 Asp Phe Ile Ile Pro Glu Lys Glu Phe Tyr Leu Trp Leu Gln Val Ile
 210 215 220
 Arg Arg Thr Ala Gly Ile Ser Asp Ser Ser Glu Lys Leu Ala His Arg
 225 230 235 240
 Ile Asn Met Thr Leu Glu Glu Lys
 245

<210>722

<211>161

<212>PRT

<213>Chlamydia pneumoniae

<400>722

Lys Ile Ile Glu Ile Ser Val Pro Ile Ile Phe Phe Cys Ile Glu Arg
 1 5 10 15
 Glu Ala Val Ser Lys Leu Trp Pro Trp Lys Leu Thr Trp Pro Glu Thr
 20 25 30
 Glu Asn Gly Gly Gln Gly Ser Asn Arg Arg Ile Ala Cys Ala Glu Thr
 35 40 45
 Asp Phe Pro Asp Pro Asp Ser Pro Met Ile Ala Lys Val Cys Pro Ser
 50 55 60
 Leu Ile Val Asn Asp Lys Asp Trp Thr Met Gly Tyr Cys Trp Arg Cys
 65 70 75 80
 Phe Ala Lys Val Met Asp Arg Ser Ser Ile Cys Lys Met Gly Leu Glu
 85 90 95
 Ala Ile Ser Arg Leu Gln Asp Arg Leu Gly Lys Leu Leu Leu Arg Lys
 100 105 110
 Arg Leu Phe Leu Cys Lys Pro Leu Leu Val Tyr Leu Ala Asn Leu His
 115 120 125
 Leu Leu Leu Tyr Lys Leu Ile Trp Lys Trp Trp Ser Leu Val Trp Asn
 130 135 140
 Thr Cys Phe Leu Tyr Ser Leu Leu Ser Glu Met Glu Asp Met Lys Asn
 145 150 155 160
 Tyr

<210>723

<211>344

<212>PRT

<213>Chlamydia pneumoniae

<400>723

Leu His Lys Asn Ser Leu Phe Arg Asn Asn Asn Leu Pro Lys Arg Ser
 1 5 10 15
 Cys Lys Arg Leu Met Ala Ser Asn Pro Ile Leu Gln Ile Glu Asp Leu
 20 25 30
 Ser Ile Thr Leu Ala Lys Gln Arg Gln Gln Tyr Pro Ile Val Gln Ser

35 40 45
 Leu Ser Phe Thr Ile Asn Glu Gly Gln Thr Leu Ala Ile Ile Gly Glu
 50 55 60
 Ser Gly Ser Gly Lys Ser Val Ser Ala His Ala Ile Leu Arg Leu Leu
 65 70 75 80
 Pro Cys Pro Pro Phe Ser Val Ser Gly Gln Val Asn Phe Gln Gly His
 85 90 95
 Asn Leu Leu Thr Ala Ser Arg Ser Ile Gln Lys Lys Ile Ile Gly Thr
 100 105 110
 Glu Ile Ser Met Ile Phe Gln Asn Pro Gln Ala Ser Leu Asn Pro Val
 115 120 125
 Phe Thr Ile Glu Gln Gln Phe Arg Glu Ile Ile His Thr His Leu Ala
 130 135 140
 Leu Thr Ala Glu Val Ala Lys Glu Lys Met Leu Tyr Ala Leu Glu Glu
 145 150 155 160
 Thr Gly Phe His Asp Pro Arg Leu Cys Leu Asn Leu Tyr Pro His Gln
 165 170 175
 Leu Ser Gly Gly Met Leu Gln Arg Ile Cys Ile Ala Met Ala Leu Leu
 180 185 190
 Cys Ser Pro Lys Leu Leu Ile Ala Asp Glu Pro Thr Thr Ala Leu Asp
 195 200 205
 Val Ser Val Gln Tyr Gln Ile Leu Gln Leu Leu Lys Thr Leu Gln Lys
 210 215 220
 Lys Thr Gly Met Ser Leu Leu Ile Ile Thr His Asn Met Gly Val Val
 225 230 235 240
 Ala Glu Thr Ala Asp Asp Val Leu Val Leu Tyr Ala Gly Arg Met Val
 245 250 255
 Glu Cys Ala Pro Ala Val Gln Met Phe His Asn Pro Ser His Pro Tyr
 260 265 270
 Thr Arg Asp Leu Leu Ala Ser Arg Pro Ser Leu Gln Pro Gln Gln Leu
 275 280 285
 Gly Ser Phe Asn Pro Ile Pro Gly Gln Pro Pro His Tyr Thr Ala Phe
 290 295 300
 Pro Ser Gly Cys Arg Tyr His Pro Arg Cys Ser Lys Ile Leu Asn Arg
 305 310 315 320
 Cys Ser Ala Glu Ala Pro Glu Ile Tyr Pro Val Arg Glu Gly His Lys
 325 330 335
 Val Arg Cys Trp Leu Tyr Asp Asp
 340

<210>724

<211>324

<212>PRT

<213>Chlamydia pneumoniae

<400>724

Met Thr Thr Asn Phe Pro Gln Pro Leu Ile Gln Ala Thr Ser Leu Thr
 1 5 10 15
 Lys His Tyr Tyr Lys Arg Ser Phe Trp Phe Gln Gly Lys Thr Ile Ala
 20 25 30
 Ser Arg Pro Val Asp Asp Val Ser Phe Ser Leu Tyr Ser Arg Arg Ala
 35 40 45
 Val Gly Leu Ile Gly Glu Ser Gly Ser Gly Lys Ser Thr Leu Ala Leu
 50 55 60
 Ala Leu Ala Gly Leu Leu Pro Leu Thr Ser Gly Phe Leu Thr Phe Asn
 65 70 75 80
 Gly Thr Pro Ile Lys Leu His Ser Lys His Gly Arg His Gln Leu Arg
 85 90 95
 Ser Gln Val Arg Leu Val Phe Gln Asn Pro Gln Ala Ser Leu Asn Pro
 100 105 110
 Arg Lys Thr Ile Leu Asp Ser Leu Gly His Ser Leu Leu Tyr His Lys
 115 120 125
 Leu Val Pro Lys Glu Lys Val Leu Ala Thr Val Arg Glu Tyr Leu Glu
 130 135 140
 Leu Val Gly Leu Ser Glu Glu Tyr Phe Tyr Arg Tyr Pro His Gln Leu
 145 150 155 160

Ser Gly Gly Gln Gln Gln Arg Val Ser Ile Ala Arg Ala Leu Leu Gly
 165 170 175
 Val Pro Gln Leu Ile Ile Cys Asp Glu Ile Val Ser Ala Leu Asp Leu
 180 185 190
 Ser Ile Gln Ala Gln Ile Leu Asn Met Leu Ala Glu Leu Gln Lys Lys
 195 200 205
 Leu Ser Leu Thr Tyr Leu Phe Ile Ser His Asp Leu Ala Val Val Arg
 210 215 220
 Ser Phe Cys Thr Glu Val Phe Ile Met Tyr Lys Gly Gln Ile Val Glu
 225 230 235 240
 Lys Gly Asn Thr Lys Arg Ile Phe Ser Asp Pro Gln His Pro Tyr Thr
 245 250 255
 Arg Met Leu Leu Asn Ala Gln Leu Pro Glu Thr Pro Asp Gln Arg Gln
 260 265 270
 Ser Lys Pro Ile Phe Gln Glu Tyr His Lys Asp Ser Glu Glu Ser Cys
 275 280 285
 Ser Thr Gly Cys Tyr Phe Tyr Asn Arg Cys Pro Gln Lys Gln Glu Ala
 290 295 300
 Cys Lys Ser Glu Ile Ile Pro Asn Gln Gly Asp Ala His His Thr Tyr
 305 310 315 320
 Arg Cys Ile His

<210>725

<211>143

<212>PRT

<213>Chlamydia pneumoniae

<400>725

Ala Tyr Cys Trp Arg Ala Arg Trp Arg Ala Met Gln Leu Ala Gly Ala
 1 5 10 15
 Thr Thr Ile Pro Val Ile Leu Lys His Val Ile Ala Asp Gly Thr Ala
 20 25 30
 Ala Glu Ala Thr Leu Ile Glu Asn Ile Gln Arg Val Asn Leu Asn Pro
 35 40 45
 Ile Glu Met Ala Glu Ala Phe Lys Arg Leu Ile His Val Phe Gly Leu
 50 55 60
 Thr Gln Asp Xaa Val Ala Tyr Lys Val Gly Lys Lys Arg Ser Thr Val
 65 70 75 80
 Ala Asn Tyr Leu Arg Leu Leu Ala Leu Ser Lys Thr Ile Gln Glu Ser
 85 90 95
 Leu Leu Gln Gly Gln Ile Thr Leu Gly His Ala Lys Val Ile Leu Thr
 100 105 110
 Leu Glu Asp Pro Ile Leu Arg Glu Lys Leu Asn Glu Ile Ile Ile Gln
 115 120 125
 Glu His Leu Ala Val Arg Glu Ala Glu Leu Ile Ala Asn Ser Leu
 130 135 140

<210>726

<211>91

<212>PRT

<213>Chlamydia pneumoniae

<400>726

Glu Lys Ser Gly Asp Ile Val Thr Glu Glu Ile Ser Lys Asp Thr Ile
 1 5 10 15
 Ile Glu Val Ala Ile Asp Asp Ile Arg Val Ser Pro Phe Gln Pro Arg
 20 25 30
 Arg Val Phe Ser Asn Glu Glu Leu Gln Glu Leu Ile Ala Ser Ile Lys
 35 40 45
 Ala Val Gly Leu Ile His Pro Val Val Arg Glu Ile Cys Thr Gly
 50 55 60
 Asp Arg Val Leu Tyr Tyr Glu Leu Ile Ala Gly Glu Pro Ala Gly Gly
 65 70 75 80
 Pro Cys Ser Ser Gln Glu Gln Leu Arg Tyr Leu
 85 90

<210>727

<211>238

<212>PRT

<213>Chlamydia pneumoniae

<400>727

Arg Lys Ile His Lys Asn Leu Arg His Ala Tyr Arg Phe Ser Thr Pro
 1 5 10 15
 Asn Cys Arg Ser Phe Met Gln Lys Leu Val His Asn Ile Trp Lys Lys
 20 25 30
 Phe Tyr Ser Phe Ser Ser Ala Ile Ala Ile Cys Ile Val Leu Ala Ser
 35 40 45
 Phe Leu Ser Leu Lys Ile Val Ser Asn Thr Tyr Lys His Ser Gln Ala
 50 55 60
 Lys Arg Asn Ser Ile Leu Leu Thr Arg Ala Ala Glu Val Ala Val
 65 70 75 80
 Ser Gln Gly Phe Leu Pro Ser Lys Ser Ala Leu Ser Ser Leu Glu Gln
 85 90 95
 Ala Tyr His Leu Gly Gly Glu Ser Met Lys Pro Tyr Ala Gly Phe Leu
 100 105 110
 Ala Ser Cys Phe Tyr Ile His Asn Glu Pro Leu Arg Gly Ala Tyr Tyr
 115 120 125
 Ala Gly Leu Ala Tyr Asn Asn Ser Gln Ala Leu Gln Leu Pro His Pro
 130 135 140
 Ile Gln Lys Leu Leu Lys Glu Ile Ser Glu Ala Gln Ala Asp Gln Leu
 145 150 155 160
 Tyr Asp Val Ala Leu Ser Lys Ser Tyr Gln Leu Leu Gln Thr Ala Asn
 165 170 175
 Ser Ser Pro Glu Tyr Pro Thr Leu Ser Phe Leu Thr Leu Leu Arg Val
 180 185 190
 Ile Glu Leu Lys Glu Leu Leu His Gln Asp Val Ser Gln Asp Phe Ala
 195 200 205
 Ala Leu Lys Ser Ser Pro Leu Phe His Gln Phe Glu Arg Met Tyr Ser
 210 215 220
 Asp Gly Glu Trp Thr Leu Ser Lys Arg Phe Gly Lys Lys Gly
 225 230 235

<210>728

<211>289

<212>PRT

<213>Chlamydia pneumoniae

<400>728

Gly Arg Thr Pro Cys Glu Cys Phe Ile Leu Gly Asp Ser Cys Arg Arg
 1 5 10 15
 Arg Gly Ser Leu Val Lys Lys Ile Arg Val His Asp Ser Gly Leu Ile
 20 25 30
 Asp Leu Asp Asp Leu Glu Lys Leu Leu Asn Glu Gly Ala Gln Phe Val
 35 40 45
 Ser Ile Pro His Val Ser Asn Val Thr Gly Cys Val Gln Pro Leu Gln
 50 55 60
 Gln Val Ala Glu Leu Val His Arg Tyr Asp Ala Tyr Leu Ala Val Asp
 65 70 75 80
 Gly Ala Gln Gly Ala Pro His Leu Pro Ile Asp Val Gln Leu Trp Asp
 85 90 95
 Val Asp Phe Tyr Val Phe Ser Ser His Lys Ile Tyr Gly Pro Thr Gly
 100 105 110
 Ile Gly Val Leu Tyr Gly Lys Lys Asp Leu Leu Asp Gln Leu Pro Pro
 115 120 125
 Val Glu Gly Gly Gly Asp Met Val Ala Ile Tyr Asp His Gln Asn Pro
 130 135 140
 Glu Tyr Leu Pro Ala Pro Met Lys Phe Glu Ala Gly Thr Pro Asn Ile
 145 150 155 160
 Ala Gly Val Leu Gly Leu Gly Ala Ala Leu Asp Tyr Leu Asp Gly Leu
 165 170 175
 Ser Ala Lys Phe Ile Tyr Asp Lys Glu Ile Ala Leu Thr Thr Tyr Leu
 180 185 190
 His Lys Glu Leu Leu Glu Ile Pro Gly Val Glu Ile Leu Gly Pro Ser
 195 200 205

Ile Glu Glu Pro Arg Gly Ala Leu Ile Gly Met Thr Ile Asp Gly Ala
 210 215 220
 His Pro Leu Asp Leu Gly Phe Leu Leu Asp Leu Arg Gly Ile Ala Val
 225 230 235 240
 Arg Thr Gly His Gln Cys Ala Gln Pro Ala Met Glu Arg Trp Asn Val
 245 250 255
 Gly His Val Leu Arg Val Ser Leu Gly Ile Tyr Asn Asp Glu Asp Asp
 260 265 270
 Ile Asp Gln Phe Ile Leu Val Leu Gln Asp Ser Leu Asp Lys Ile Arg
 275 280 285
 Arg

<210>729

<211>137

<212>PRT

<213>Chlamydia pneumoniae

<400>729

Ser Val Lys Asn Leu Lys Glu Asp Phe Pro Ile Phe Ala Ala Lys Ala
 1 5 10 15
 Lys Glu Asn Glu Pro Phe Ile Tyr Leu Asp Ser Ala Ala Thr Thr Gln
 20 25 30
 Lys Pro Gln Gln Val Ile Asp Ala Val Ala Asn Phe Tyr Thr Ser Ser
 35 40 45
 Tyr Ala Thr Val Asn Arg Ala Ile Tyr Ser Ser Ser Arg Asn Val Thr
 50 55 60
 Glu Ala Tyr Ala Ala Val Arg Glu Lys Val Arg Lys Trp Val Ser Ala
 65 70 75 80
 Ala Ser Asp Ser Glu Ile Val Phe Thr Arg Gly Thr Thr Ala Gly Leu
 85 90 95
 Asn Leu Leu Ala Ile Ser Val Asn Asp Leu Trp Ile Pro Lys Gly Gly
 100 105 110
 Val Val Leu Val Ser Glu Ala Glu His His Ala Asn Val Leu Ser Trp
 115 120 125
 Glu Ile Pro Val Gly Gly Glu Val Leu
 130 135

<210>730

<211>410

<212>PRT

<213>Chlamydia pneumoniae

<400>730

Arg His Phe Leu Leu Leu Leu Arg Val Leu Leu Cys Lys Lys Leu Arg
 1 5 10 15
 Lys Leu Ala Thr Leu Asn Ile Ala Ser Ser Leu Leu Gln Lys Arg Cys
 20 25 30
 Leu Val Ala Phe Leu Gly Phe Arg Ser Phe Leu Phe Phe Leu Ile Ala
 35 40 45
 Asn Asn Leu Ala Thr Gly Ala Ser Glu Leu Ile Lys Gln His Trp Leu
 50 55 60
 His Asn Asn His Ser Leu Ala Phe Glu Cys Ile Leu Ile Asn Gly Lys
 65 70 75 80
 Tyr Glu Pro Ser Leu Ser Gln Leu Pro Glu Gly Val Ile Val Cys Gly
 85 90 95
 Ile Asp Glu Ala Arg Gly Ser Leu Ser Ser Phe Met Gln Gly Phe Asp
 100 105 110
 Val Asn Lys His Pro Leu Ala Phe Leu Asn Ala Val Cys Ser Glu Asp
 115 120 125
 Arg Gly Val Val Ile Tyr Ile Pro Glu Glu Met Gln Thr Ser Asp Pro
 130 135 140
 Ile Phe Val Arg His Ile Ser Phe Pro Thr Val Ser Asp His Asp Val
 145 150 155 160
 Ile Phe Ser Pro Arg Ile Val Val Il Leu Gly Gln Arg Ala Ser Ala
 165 170 175
 Gln Ile Gln Ile Ser His Asp Val Asp Leu Glu Met Val Gly Ser Ser
 180 185 190

Lys Thr Ile Val Asn Gly Val Thr Glu Leu Phe Val Gly Glu Gly Ala
 195 200 205
 Asp Leu Thr Val Phe Met Val Pro Gly Tyr Ser Glu Glu Asp Thr Leu
 210 215 220
 Ser Trp Ser Thr Ile Ala Thr Val Glu Lys Asp Ala Ile Cys Arg Met
 225 230 235 240
 Thr Gln Asn Leu Leu Glu Ser Cys Gln Gly Phe Gly Trp Phe Asp Asn
 245 250 255
 Thr Ser Tyr Ile Val Gly Lys Lys Gly His Ala Glu Ser Leu Val Leu
 260 265 270
 Val Gln Ser Pro Arg Lys Thr Trp Val Asn Asn Leu Met Ser His Asp
 275 280 285
 Ala Glu Glu Thr Val Ser Arg Gln Asn Ile Lys Ser Ile Leu Tyr Ser
 290 295 300
 Gly His Phe Leu Phe Glu Gly Thr Ile Ser Ile Ser Ser Gln Gly Asp
 305 310 315 320
 Leu Ser Asp Ala Asn Gln Lys His Asp Thr Leu Leu Leu Ser Ser Glu
 325 330 335
 Ala Arg Val Ser Thr Phe Pro Arg Leu Glu Ile Glu Thr Asp Glu Val
 340 345 350
 Lys Ala Ser His Gly Ala Thr Val Gly Pro Leu Asp Pro Gln Gln Ile
 355 360 365
 Phe Tyr Met Arg Ser Arg Gly Met Thr Glu Ala Glu Ala Gln Glu Lys
 370 375 380
 Leu Ile His Gly Phe Leu Lys Gln Gly Leu Val Ser Asp Thr Phe Leu
 385 390 395 400
 Gly Ser Ser Phe Gln Leu Asn Gln Thr Ser
 405 410

<210>731

<211>256

<212>PRT

<213>Chlamydia pneumoniae

<400>731

Met Leu Lys Ile Lys His Leu His Ala Ser Cys Asn Asp Val Lys Ile
 1 5 10 15
 Leu Asp Asp Phe Asn Leu Asn Ile Gln Pro Gly Xaa Met His Val Ile
 20 25 30
 Met Gly Pro Asn Gly Ala Gly Lys Ser Thr Leu Ala Lys Ile Leu Ala
 35 40 45
 Gly Asp Glu Ser Val Leu Val Ser Ser Gly Glu Ile Ala Leu Gln Glu
 50 55 60
 Gln Asn Leu Leu Ser Met Leu Pro Glu Glu Arg Ser Arg Ala Gly Leu
 65 70 75 80
 Phe Val Gly Phe Gln Met Pro Pro Glu Ile Pro Gly Val Asn Asn Lys
 85 90 95
 Met Phe Leu Arg Asp Ala Tyr Asn Ala Arg Arg Arg Ala Asn Gln Glu
 100 105 110
 Gly Asp Ile Ser Ile Asp Glu Phe Asn Thr Leu Leu Ser Thr Val Leu
 115 120 125
 Glu Thr Tyr Glu Tyr Asn Ala Thr Thr Asp Leu Phe Leu Asp Arg Asn
 130 135 140
 Val Asn Glu Gly Phe Ser Gly Gly Glu Arg Lys Arg Asn Glu Ile Cys
 145 150 155 160
 Gln Met Leu Val Leu Glu Pro Glu Met Val Leu Leu Asp Glu Pro Asp
 165 170 175
 Ser Gly Leu Asp Val Asp Ala Leu Arg Leu Ile Cys Arg Val Leu Glu
 180 185 190
 Lys Tyr Arg Glu Leu His Pro Thr Ser Ser Leu Cys Ile Val Thr His
 195 200 205
 Asn Pro Lys Leu Gly Asn Leu Ile Arg Pro Asp Val Val His Leu Leu
 210 215 220
 Leu Asp Gly Arg Val Ala Leu Ser Gly Asp Val Ser Leu Met His Glu
 225 230 235 240
 Leu Glu Ala Lys Ser Tyr Gln Glu Val Thr Lys Arg Val Ala Trp Arg

245 250 255
 <210>732
 <211>484
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>732
 Met Gly Glu Ser Val Lys Val Phe Leu Glu Glu Arg Glu Asp Tyr Pro
 1 5 10 15
 Tyr Gly Phe Val Thr Pro Ile Glu Ser Gln Gly Leu Thr Arg Gly Leu
 20 25 30
 Ser Glu Glu Thr Ile Glu Glu Ile Ala Ala Leu Arg Asn Glu Pro Gln
 35 40 45
 Phe Ile Ile Asp Phe Arg Leu Gln Ala Tyr Arg Tyr Trp Lys Gln Leu
 50 55 60
 His Glu Pro Ala Trp Ala Arg Leu His Tyr Gly Pro Ile Ala Tyr Asp
 65 70 75 80
 Asp Ile Val Tyr Phe Ser Ser Pro Lys Gln Lys Lys Pro Leu Gly Arg
 85 90 95
 Leu Glu Asp Ala Asp Pro Glu Ile Leu Asp Thr Phe Lys Lys Leu Gly
 100 105 110
 Ile Pro Leu Asp Glu Gln Lys Arg Leu Leu Asn Val Glu Asn Val Ala
 115 120 125
 Val Asp Leu Val Phe Asp Ser Val Ser Ile Gly Thr Thr Phe Lys Glu
 130 135 140
 Ala Leu Glu Lys Ala Gly Val Ile Phe Cys Ser Leu Gly Glu Ala Ile
 145 150 155 160
 Gln Glu His Pro Asn Leu Val Lys Lys Tyr Leu Gly Ser Val Val Ser
 165 170 175
 His Arg Asp Asn Phe Phe Ala Ala Leu Asn Ala Ala Val Phe Ser Asp
 180 185 190
 Gly Ser Phe Val Tyr Val Pro Lys Gly Val Lys Cys Pro Met Asp Ile
 195 200 205
 Ser Thr Tyr Phe Arg Ile Asn Asn Lys Glu Ala Gly Gln Phe Glu Arg
 210 215 220
 Thr Leu Ile Val Val Glu Asp Gly Gly Tyr Ala Ser Tyr Leu Glu Gly
 225 230 235 240
 Cys Thr Ala Pro Ala Tyr Ser Ser Asn Gln Leu His Ala Ala Val Val
 245 250 255
 Glu Leu Val Ala His Glu His Ala Val Ile Arg Tyr Ser Thr Val Gln
 260 265 270
 Asn Trp Tyr Ala Gly Asp Lys Lys Thr Gly Lys Gly Gly Ile Tyr Asn
 275 280 285
 Phe Val Thr Lys Arg Gly Leu Cys Ala Gly Tyr Arg Ser Lys Ile Ser
 290 295 300
 Trp Ser Gln Val Glu Val Gly Ala Ala Ile Thr Trp Lys Tyr Pro Ser
 305 310 315 320
 Cys Ile Leu Lys Gly Asp Glu Ser Val Gly Glu Phe Tyr Ser Val Ala
 325 330 335
 Leu Thr Ser Gly Lys Met Gln Ala Asp Thr Gly Thr Lys Met Leu His
 340 345 350
 Val Gly Lys Arg Thr Thr Ser Thr Val Ile Ser Lys Gly Ile Ser Ser
 355 360 365
 Asp Glu Ser Lys Asn Thr Phe Arg Ser Leu Val Ser Leu Gly Lys Lys
 370 375 380
 Ala Glu His Ser Ser Asn Tyr Thr Gln Cys Asp Ser Met Leu Ile Gly
 385 390 395 400
 Lys Ala Ser Gly Ala Tyr Thr Asp Pro Lys Ile Val Val Glu Asn Ser
 405 410 415
 Thr Ser Ser Ile Glu His Glu Ala Thr Thr Ser Lys Leu Arg Glu Asp
 420 425 430
 Gln Leu Leu Tyr Leu Arg Ser Arg Gly Leu Ser Pro Glu Glu Ala Val
 435 440 445
 Ser Leu Val Ile His Gly Phe Cys Arg Glu Ile Ile Glu Gln Leu Pro
 450 455 460

Leu Glu Phe Ala Gln Glu Ala Ser Lys Leu Leu Leu Ile Lys Leu Glu
 465 470 475 480
 Asn Ser Val Gly

<210>733

<211>351

<212>PRT

<213>Chlamydia pneumoniae.

<400>733

Leu Arg Ser Thr Asn His Val Leu Gly Glu Ile Ser Met Glu Glu Ala
 1 5 10 15
 Ala Lys His Leu Ala Lys Glu Phe Leu Cys Ser Gly Ile Asn Leu Phe
 20 25 30
 Leu Ser Gly Glu Tyr Glu Gln Ala Glu Lys Arg Leu Lys Glu Thr Leu
 35 40 45
 Glu Leu Asp Ser Thr Ala Ala Leu Ala Tyr Cys Tyr Leu Gly Ile Ile
 50 55 60
 Ala Leu Glu Thr Gly Arg Val Ser Glu Ala Leu Asn Trp Cys Ser Lys
 65 70 75 80
 Gly Leu Ala Ser Glu Pro Gly Asp Ser Tyr Leu Arg Tyr Cys Tyr Gly
 85 90 95
 Val Ala Leu Asp Arg Gly Asn Gln Tyr Glu Ala Ala Ile Glu Gln Tyr
 100 105 110
 Ser Ala Tyr Val Ala Leu His Pro Asp Asp Val Glu Cys Trp Phe Ser
 115 120 125
 Leu Gly Ser Val Tyr His Arg Leu Lys Arg Leu Gln Glu Ala Leu Asp
 130 135 140
 Cys Phe Asp Lys Ile Leu Ala Leu Asp Pro Trp Asn Pro Gln Ser Leu
 145 150 155 160
 Tyr Asn Lys Ala Val Ile Leu Ser Glu Met Asp Asp Glu Ala Glu Ser
 165 170 175
 Ile Arg Leu Leu Glu Val Ala Val Ala Lys Asn Pro Leu Tyr Trp Lys
 180 185 190
 Ala Trp Val Lys Leu Gly Phe Leu Leu Ser Arg Ser Lys Arg Trp Asp
 195 200 205
 Lys Ala Thr Glu Ala Tyr Glu Arg Val Val Gln Leu Arg Pro Asp Leu
 210 215 220
 Ser Asp Gly His Tyr Asn Leu Gly Leu Cys Tyr Leu Thr Leu Asp Lys
 225 230 235 240
 Thr Arg Leu Ala Leu Lys Ala Phe Gln Glu Ala Leu Phe Leu Asn Ala
 245 250 255
 Glu Asp Ala Asp Ala His Phe Tyr Val Gly Leu Ala His Leu Asp Leu
 260 265 270
 Lys Gln Met Arg Glu Ala Tyr Glu Ala Phe Asn Ser Ala Leu Ser Ile
 275 280 285
 Asn Leu Glu His Glu Arg Ala His Tyr Leu Leu Gly Tyr Leu His His
 290 295 300
 Met Gln Gly Glu Thr Asp Lys Ala Thr Lys Glu Leu Leu Phe Leu Gln
 305 310 315 320
 Lys Lys Asp Ser Thr Phe Ala Pro Leu Leu Gln Lys Thr Val Val Ser
 325 330 335
 Asp Pro Ser Ser Met Gln Phe Glu Arg Arg Leu Asp Thr Ile Ser
 340 345 350

<210>734

<211>660

<212>PRT

<213>Chlamydia pneumoniae

<400>734

Leu Pro Leu Thr Phe Asp Cys Phe Leu Asp Phe Leu Phe Pro Glu Asn
 1 5 10 15
 Ser Val Ile Lys Leu Gln Leu Lys Arg Asn Ser Phe Val Gly Gln Ala
 20 25 30
 Ile Glu Val Gln Asn Leu Val Thr Arg Leu Leu Ser Leu Phe Pro Tyr
 35 40 45

Glu Glu Gly Thr Cys Pro Cys Ser Ala Ile Ph Asp Ala Val Phe Pro
 50 55 60
 Asn Glu Glu Gly His Ile Leu Ile Gln Glu Val Ile Ser Leu Gln Glu
 65 70 75 80
 Gln Lys Trp Ile Met Glu Cys Leu Asn Gln His Lys Ala Asp Ile Glu
 85 90 95
 Glu Leu Lys Glu Ala Leu Asp Gln Val Phe Asn Glu Leu Pro Ala Asn
 100 105 110
 Tyr Asp Lys Ile Leu Tyr Thr Asp Ile Leu Arg Leu Ile Val Asp Pro
 115 120 125
 Glu Arg Phe Ser Pro Val Leu Pro Ser Glu Val His Arg Leu Ser Leu
 130 135 140
 Ser Glu Phe Thr Glu Leu Gln Gly Arg Tyr Val Val Leu Arg Ser Ala
 145 150 155 160
 Phe Ser Thr Ile Leu Glu Asp Ala Phe Ile Glu Val His Phe Lys Ser
 165 170 175
 Trp Arg Lys Ser Glu Phe Leu Gln Tyr Leu Ala Ala Lys Arg Gln Glu
 180 185 190
 Glu Ala Leu Arg Lys Gln Arg Tyr Pro Thr Pro Tyr Val Asp Tyr Leu
 195 200 205
 Glu Glu Glu Lys Thr Arg Gln Tyr Lys Met Phe Cys Gln Glu His Leu
 210 215 220
 Asp Thr Phe Leu Ala Tyr Leu Phe Ser Lys Thr Pro Tyr Lys Glu Gly
 225 230 235 240
 Leu Glu Pro Tyr Tyr Asp Ile Leu Asp Leu Trp Ile Asn Glu Leu Asp
 245 250 255
 Asn Gly Ala His Arg Ala Leu Ser Trp Asn Glu His Tyr Leu Phe Leu
 260 265 270
 Lys Glu Arg Val Ser His Leu Ser Glu His Leu Pro Ala Leu Phe Ser
 275 280 285
 Thr Phe Arg Glu Phe Asn Glu Leu Gln Arg Pro Leu Leu Gly Lys Tyr
 290 295 300
 Pro Ile Ser Ile Val Arg Asn Lys Arg Gln Thr Glu Gln Asp Leu Ala
 305 310 315 320
 Ala Ser Phe Tyr Pro Val Tyr Gly Tyr Gly Tyr Leu Arg Pro His Ala
 325 330 335
 Tyr Gly Gln Ala Ala Thr Leu Gly Ser Ile Phe Lys Leu Val Ser Ala
 340 345 350
 Tyr Ser Val Leu Ser Gln Arg Ile Leu Trp Gly His Asn Glu Glu Pro
 355 360 365
 Ala Asn Pro Leu Val Ile Ile Asp Lys Asn Ser Phe Gly Tyr Arg Ser
 370 375 380
 Ser Lys Pro His Val Gly Phe Phe Lys Asp Gly Thr Pro Ile Pro Thr
 385 390 395 400
 Phe Phe Arg Gly Gly Ser Leu Pro Gly Asn Asp Phe Met Gly Arg Gly
 405 410 415
 Phe Ile Asp Leu Val Ser Ala Leu Glu Met Ser Ser Asn Pro Tyr Phe
 420 425 430
 Ser Leu Leu Val Gly Glu Gly Leu Gly Asp Pro Glu Asp Leu Ala Asp
 435 440 445
 Ala Ala Ser Leu Phe Gly Phe Gly Glu Lys Thr Gly Leu Gly Leu Pro
 450 455 460
 Gly Glu Tyr Ala Gly Arg Val Pro His Asp Leu Ala Tyr Asn Arg Ser
 465 470 475 480
 Gly Leu Tyr Ala Thr Ala Ile Gly Gln His Thr Leu Val Val Thr Pro
 485 490 495
 Leu Gln Thr Ala Val Met Leu Ala Ser Leu Val Asn Gly Gly Val Val
 500 505 510
 Tyr Val Pro Lys Leu Leu Leu Gly Glu Trp Glu Gly Glu His Val Ser
 515 520 525
 Tyr Leu Ser Ser Lys Lys Lys Arg Thr Ile Phe Met Pro Asp Ala Val
 530 535 540
 Val Glu Val Leu Lys Thr Gly Met Arg Asn Val Ile Trp Gly Gln Tyr
 545 550 555 560

Gly Thr Ala Arg Ala Ile Gln Ser Gln Phe Pro Pro Gln Leu Leu Ser
 565 570 575
 Arg Ile Ile Gly Lys Thr Ser Thr Ala Glu Ser Ile Met Arg Val Gly
 580 585 590
 Leu Asp Arg Glu Tyr Gly Thr Met Lys Met Lys Asp Ile Trp Phe Ala
 595 600 605
 Ala Val Gly Phe Ser Asp Gln Asp Leu Ser Leu Pro Thr Ile Val Val
 610 615 620
 Ile Val Tyr Leu Arg Leu Gly Glu Phe Gly Arg Asp Ala Ala Pro Met
 625 630 635 640
 Ala Val Lys Met Ile Asp Met Trp Glu Lys Ile Gln Gln Arg Glu Ser
 645 650 655
 Phe Leu Arg Gly
 660

<210>735

<211>139

<212>PRT

<213>Chlamydia pneumoniae

<400>735

Glu Lys Trp Val Leu Arg His Cys Trp Asp Ser Lys Leu Arg Gly Lys
 1 5 10 15
 Ile Gly Lys Lys Pro Ile Leu Val Asp Arg Arg Gly Asn Phe Ile Gln
 20 25 30
 Glu Met Glu Gly Ala Val Pro Glu Ala Pro Gly Thr Lys Leu Gln Leu
 35 40 45
 Thr Leu Ser Ala Glu Leu Gln Ala Tyr Ala Asp Ala Leu Leu Leu Glu
 50 55 60
 Tyr Glu Lys Thr Glu Thr Phe Arg Ser Ala Lys Ser Leu Lys Lys Arg
 65 70 75 80
 Glu Lys Leu Pro Pro Leu Phe Pro Trp Ile Lys Gly Gly Ala Ile Ile
 85 90 95
 Ala Leu Asp Pro Asn Asn Gly Glu Ile Leu Ala Met Ala Ser Ser Pro
 100 105 110
 Arg Tyr Arg Asn Asn Asp Phe Val Asn Ala Lys Val Ala Glu Asp Ser
 115 120 125
 Lys Ala Val Arg Ser Ser Ile Tyr Leu Asp Gly
 130 135

<210>736

<211>286

<212>PRT

<213>Chlamydia pneumoniae

<400>736

Phe Ser Asp Glu Ser Glu Ala His Asn Ile His Ser Met Lys Arg Pro
 1 5 10 15
 Lys Lys Phe Pro Ile Tyr Leu Ser Ile Ala Gln Lys Thr Asn Arg Leu
 20 25 30
 Leu Ser Gly Ile Val Ile Ala Phe Ala Val Ile Ala Leu Arg Leu Trp
 35 40 45
 Tyr Leu Ala Val Val Glu His Glu Gln Lys Leu Glu Glu Ala Tyr Lys
 50 55 60
 Pro Gln Ile Arg Val Leu Pro Gln Tyr Val Glu Arg Ala Thr Ile Cys
 65 70 75 80
 Asp Arg Phe Gly Lys Thr Leu Ala Val Asn Gln Leu Gln Tyr Asp Val
 85 90 95
 Ser Val Ala Tyr Gly Ala Ile Arg Asp Leu Pro Thr Arg Ala Trp Arg
 100 105 110
 Val Asp Glu His Gly His Lys Gln Leu Ile Pro Val Arg Lys His Tyr
 115 120 125
 Ile Met Cys Leu Ser Glu Leu Leu Ser Gln Glu Leu His Leu Asp Arg
 130 135 140
 Glu Ala Ile Glu Asp Ala Ile His Ala Lys Ala Ser Val Leu Gly Ser
 145 150 155 160
 Val Pro Tyr Leu Val Ala Ala Asn Val Ser Glu Arg Thr Tyr Leu Lys
 165 170 175

Leu Lys Met Leu Ser Lys Asp Trp Pro Gly Leu His Val Glu Ala Val
 180 185 190
 Val Arg Arg His Tyr Pro Gln Glu Ser Val Ala Ser Asp Ile Leu Gly
 195 200 205
 Tyr Val Gly Pro Ile Ser Leu Gln Glu Tyr Lys Arg Val Thr Gln Glu
 210 215 220
 Leu Ser Gln Leu Arg Glu Cys Val Arg Ala Tyr Glu Glu Gly Glu Asp
 225 230 235 240
 Pro Lys Leu Pro Glu Gly Leu Ala Ser Ile Asp Gln Val Arg Ala Leu
 245 250 255
 Leu Glu Ser Val Glu Ser Asn Ala Tyr Ser Leu Asn Ala Leu Val Gly
 260 265 270
 Lys Met Gly Val Glu Ala Leu Leu Gly Leu Lys Ile Thr Arg
 275 280 285

<210>737

<211>391

<212>PRT

<213>Chlamydia pneumoniae

<400>737

Val Ser Met Lys Lys Leu Leu Lys Ser Ala Leu Leu Ser Ala Ala Phe
 1 5 10 15
 Ala Gly Ser Val Gly Ser Leu Gln Ala Leu Pro Val Gly Asn Pro Ser
 20 25 30
 Asp Pro Ser Leu Leu Ile Asp Gly Thr Ile Trp Glu Gly Ala Ala Gly
 35 40 45
 Asp Pro Cys Asp Pro Cys Ala Thr Trp Cys Asp Ala Ile Ser Leu Arg
 50 55 60
 Ala Gly Phe Tyr Gly Asp Tyr Val Phe Asp Arg Ile Leu Lys Val Asp
 65 70 75 80
 Ala Pro Lys Thr Phe Ser Met Gly Ala Lys Pro Thr Gly Ser Ala Ala
 85 90 95
 Ala Asn Tyr Thr Thr Ala Val Asp Arg Pro Asn Pro Ala Tyr Asn Lys
 100 105 110
 His Leu His Asp Ala Glu Trp Phe Thr Asn Ala Gly Phe Ile Ala Leu
 115 120 125
 Asn Ile Trp Asp Arg Phe Asp Val Phe Cys Thr Leu Gly Ala Ser Asn
 130 135 140
 Gly Tyr Ile Arg Gly Asn Xaa Tyr Arg Phe Asn Leu Val Gly Leu Phe
 145 150 155 160
 Gly Val Lys Gly Thr Thr Val Asn Ala Asn Xaa Leu Pro Asn Val Ser
 165 170 175
 Leu Ser Asn Gly Val Val Glu Leu Tyr Thr Asp Thr Ser Phe Ser Trp
 180 185 190
 Ser Val Gly Ala Arg Gly Ala Leu Trp Glu Cys Gly Cys Ala Thr Leu
 195 200 205
 Gly Ala Glu Phe Gln Tyr Ala Gln Ser Lys Pro Lys Val Glu Glu Leu
 210 215 220
 Asn Val Ile Cys Asn Val Ser Gln Phe Ser Val Asn Lys Pro Lys Gly
 225 230 235 240
 Tyr Lys Gly Val Ala Phe Pro Leu Pro Thr Asp Ala Gly Val Ala Thr
 245 250 255
 Ala Thr Gly Thr Lys Ser Ala Thr Ile Asn Tyr His Glu Trp Gln Val
 260 265 270
 Gly Ala Ser Leu Ser Tyr Arg Leu Asn Ser Leu Val Pro Tyr Ile Gly
 275 280 285
 Val Gln Trp Ser Arg Ala Thr Phe Asp Ala Asp Asn Ile Arg Ile Ala
 290 295 300
 Gln Pro Lys Leu Pro Thr Ala Val Leu Asn Leu Thr Ala Trp Asn Pro
 305 310 315 320
 Ser Leu Leu Gly Asn Ala Thr Ala Leu Ser Thr Thr Asp Ser Phe Ser
 325 330 335
 Asp Phe Met Gln Ile Val Ser Cys Gln Ile Asn Lys Phe Lys Ser Arg
 340 345 350
 Lys Ala Cys Gly Val Thr Val Gly Ala Thr Leu Val Asp Ala Asp Lys

				85					90				95
Leu	Asn	Asp	Ile	Leu	Lys	Tyr	Lys	Val	Asp	Thr	Val	Glu	Ala
			100					105					110
Gln	Ala	Ala	Ser	Ser	Gln	Asp	Pro	Ser	Leu	Ser	Val	Asp	Glu
			115					120				125	Leu
Ala	Val	Thr	Met	Gln	Thr	Val	Gly	Glu	Asn	Ile	Arg	Ile	Ser
			130				135				140		Arg
Ala	Tyr	Phe	Pro	Lys	Ala	Thr	Asn	Ser	Thr	Val	Gly	Ile	Tyr
			145			150				155			160
Gly	Asn	Gly	Lys	Thr	Val	Ala	Leu	Thr	Met	Leu	Ser	Gly	Ser
			165						170				175
Ala	Asp	Ser	Leu	Ala	Lys	Asp	Ile	Ala	Met	His	Val	Val	Ala
			180					185					190
Pro	Gln	Phe	Leu	Ser	Lys	Glu	Ser	Val	Pro	Ala	Glu	Ala	Ile
			195				200					205	Ala
Glu	Lys	Glu	Val	Ile	Ala	Ser	Gln	Ile	Gln	Gly	Lys	Pro	Gln
			210				215					220	Glu
Ile	Glu	Lys	Ile	Val	Thr	Gly	Lys	Leu	Asn	Thr	Phe	Phe	Gln
			225			230				235			240
Cys	Leu	Leu	Glu	Gln	Pro	Phe	Ile	Lys	Asn	Ala	Asp	Leu	Ser
			245					250					255
Ser	Leu	Ile	Asp	Asp	Phe	Ser	Lys	Thr	Ser	Gly	Ser	Ser	Val
			260					265					270
Glu	Gln	Phe	Ile	Leu	Trp	Lys	Ile	Gly	Ala				
			275					280					

<210>740

<211>248

<212>PRT

<213>Chlamydia pneumoniae

<400>740

Met	Ala	Lys	Gln	Thr	Arg	Arg	Val	Leu	Phe	Lys	Ile	Ser	Gly	Glu	Ala
1				5					10					15	
Leu	Ser	Lys	Asp	Ser	Ser	Asn	Arg	Ile	Asp	Glu	Met	Arg	Leu	Ser	Arg
			20					25					30		
Leu	Val	Ser	Glu	Leu	Arg	Ala	Val	Arg	Asn	Asn	Asp	Ile	Glu	Ile	Ala
			35				40					45			
Leu	Val	Ile	Gly	Gly	Gly	Asn	Ile	Leu	Arg	Gly	Leu	Ala	Glu	Gln	Lys
			50			55					60				
Glu	Leu	Gln	Ile	Asn	Arg	Val	Ser	Ala	Asp	Gln	Met	Gly	Met	Leu	Ala
			65		70				75					80	
Thr	Leu	Ile	Asn	Gly	Met	Ala	Val	Ala	Asp	Ala	Leu	Lys	Ala	Glu	Asp
			85					90					95		
Ile	Pro	Cys	Leu	Leu	Thr	Ser	Thr	Leu	Ser	Cys	Pro	Gln	Leu	Ala	Asp
			100					105					110		
Leu	Tyr	Thr	Pro	Gln	Lys	Ser	Ile	Glu	Ala	Leu	Asp	Gln	Gly	Lys	Ile
			115				120					125			
Leu	Ile	Cys	Thr	Thr	Gly	Ala	Gly	Ser	Pro	Tyr	Leu	Thr	Thr	Asp	Thr
			130			135					140				
Gly	Ala	Ala	Leu	Arg	Ala	Cys	Glu	Leu	Asn	Val	Asp	Val	Leu	Ile	Lys
			145		150					155				160	
Ala	Thr	Met	His	Val	Asp	Gly	Val	Tyr	Asp	Lys	Asp	Pro	Arg	Leu	Phe
			165					170					175		
Pro	Asp	Ala	Val	Lys	Tyr	Asp	Phe	Val	Ser	Tyr	Lys	Asp	Phe	Leu	Ser
			180				185						190		
Asn	Gln	Leu	Gly	Val	Met	Asp	Ala	Ser	Ala	Ile	Ser	Leu	Cys	Met	Asp
			195			200					205				
Ser	His	Ile	Pro	Ile	Arg	Val	Phe	Ser	Phe	Leu	Gln	His	Ser	Leu	Glu
			210			215					220				
Lys	Ala	Leu	Phe	Asp	Pro	Thr	Ile	Gly	Thr	Leu	Val	Ser	Glu	Asp	Val
			225		230				235					240	
Asn	His	Val	Cys	Ser	Pro	Arg	His								
				245											

<210>741

<211>180

<312>PRT

<313>Chlamydia pneumoniae

<400>741

Met Ser Val Leu Gln Asp Thr Glu Lys Lys Met Ala Ala Ala Leu Asp
1 5 10 15
Phe Phe His Lys Glu Val Lys Ser Phe Arg Thr Gly Lys Ala His Pro
30 25 30
Ala Leu Val Glu Thr Val Val Val Asp Val Tyr Gly Thr Thr Met Arg
35 40 45
Leu Ser Asp Ile Ala Ser Ile Ser Val Ala Asp Leu Arg Gln Leu Val
50 55 60
Ile Ser Pro Tyr Asp Gly Asn Asn Ala Ser Ala Ile Ala Lys Gly Ile
65 70 75 80
Ile Ala Ala Asn Leu Asn Leu Gln Pro Glu Val Glu Gly Ser Ile Ile
85 90 95
Arg Ile Lys Val Pro Glu Pro Thr Ala Asp Tyr Arg Gln Glu Met Ile
100 105 110
Lys Gln Leu Arg Arg Lys Cys Glu Glu Ala Lys Ile Asn Val Arg Asn
115 120 125
Ile Arg Arg Glu Ala Asn Asp Lys Leu Lys Lys Asp Ser Ala Leu Thr
130 135 140
Glu Asp Val Val Lys Gly Asn Glu Lys Lys Ile Gln Glu Leu Thr Asp
145 150 155 160
Lys Phe Cys Lys Gln Leu Asp Glu Leu Thr Lys Gln Lys Glu Ala Glu
165 170 175
Ile Ala Ser Ile
180

<210>742

<211>172

<212>PRT

<213>Chlamydia pneumoniae

<400>742

Leu Met Val His Ser Pro Thr His Gln Cys Tyr His Cys Gln Gln Pro
1 5 10 15
Ala Thr Ile Cys Tyr Thr Glu Ile Asp Lys Asp Lys Val Ile Arg Ser
20 25 30
Tyr Val Cys Ala Thr Cys Pro Cys Pro Ser His Tyr Tyr Asn Asn Glu
35 40 45
His Leu Ser Leu Ser Lys Gly Val Gly Val Leu Thr Leu Glu Cys Gly
50 55 60
Asn Cys Lys Thr Val Trp His Ser Lys Gln Asp Asp Glu Gln Leu Leu
65 70 75 80
Gly Cys His Gln Cys Tyr Thr Asn Phe Lys Asn Gln Ile Thr Ser Lys
85 90 95
Leu Lys Ser Glu Arg Val Val Ser Ser Ser Phe Thr Met Glu Lys Gly
100 105 110
Gln Gly Ser Leu His Ile Gly Arg Ala Pro Gly Glu Ala Ser Asn Thr
115 120 125
Asn Pro Leu Leu Lys Leu Ile Ala Leu Asn Glu Ala Leu Gln Asp Thr
130 135 140
Leu Glu Arg Glu Asp Tyr Glu Gln Ala Ala Val Ile Arg Asp Gln Ile
145 150 155 160
Asn His Leu Lys Thr Lys Asn Pro Asp Asp Pro Ser
165 170

<210>743

<211>350

<212>PRT

<213>Chlamydia pneumoniae

<400>743

Met Thr Leu Pro Asn Asp Leu Leu Glu Thr Leu Val Lys Arg Lys Glu
1 5 10 15
Ser Pro Gln Ala Asn Lys Val Trp Pro Val Thr Thr Phe Ser Leu Ala
20 25 30
Arg Asn Leu Ser Val Ser Lys Phe Leu Pro Cys Leu Ser Lys Glu Gln

35 40 45
 Lys Leu Glu Ile Leu Gln Phe Ile Thr Ser His Phe Asn His Ile Glu
 50 55 60
 Gly Phe Gly Glu Phe Ile Val Leu Pro Leu Lys Asp Thr Pro Leu Trp
 65 70 75 80
 Gln Lys Glu Phe Leu Leu Glu His Phe Leu Leu Pro Tyr Asp Leu Val
 85 90 95
 Gly Asn Pro Glu Gly Glu Ala Leu Val Val Ser Arg Ser Gly Asp Phe
 100 105 110
 Leu Ala Ala Ile Asn Phe Gln Asp His Leu Val Leu His Gly Ile Asp
 115 120 125
 Phe Gln Gly Asn Val Glu Lys Thr Leu Asp Gln Leu Val Gln Leu Asp
 130 135 140
 Ser Tyr Leu His Ser Lys Leu Ser Phe Ala Phe Ser Ser Glu Phe Gly
 145 150 155 160
 Phe Leu Thr Thr Asn Pro Lys Asn Cys Gly Thr Gly Leu Lys Ser Gln
 165 170 175
 Cys Phe Leu His Ile Pro Ala Leu Leu Tyr Ser Lys Glu Phe Thr Asn
 180 185 190
 Leu Ile Asp Glu Glu Val Glu Ile Ile Thr Ser Ser Leu Leu Leu Gly
 195 200 205
 Val Thr Gly Phe Pro Gly Asn Ile Val Val Leu Ser Asn Arg Cys Ser
 210 215 220
 Leu Gly Leu Thr Glu Glu Leu Leu Leu Ser Ser Leu Arg Ile Thr Ala
 225 230 235 240
 Ser Lys Leu Ser Val Ala Glu Val Ala Ala Lys Lys Arg Leu Ser Glu
 245 250 255
 Glu Asn Ser Gly Asp Leu Lys Asn Leu Ile Leu Arg Ser Leu Gly Leu
 260 265 270
 Leu Thr His Ser Cys Gln Leu Glu Leu Lys Glu Thr Leu Asp Ala Leu
 275 280 285
 Ser Trp Ile Gln Leu Gly Ile Asp Leu Gly Leu Ile Lys Val Thr Glu
 290 295 300
 Asn His Pro Leu Trp Asn Pro Leu Phe Trp Gln Ile Arg Arg Ala His
 305 310 315 320
 Leu Ala Leu Gln Lys Gln Ala Glu Asn Ser Arg Asp Leu Gln Lys Asp
 325 330 335
 Thr Ile Ser His Leu Arg Ala Ser Val Leu Lys Glu Leu Thr Lys Gly
 340 345 350
 Leu Ser Pro Glu Ser Phe
 355

<210>744

<211>561

<212>PRT

<213>Chlamydia pneumoniae

<400>744

Ser Cys Cys Gly Tyr Pro Ser Val Pro Ser Leu Gln Arg Gln Pro Ser
 1 5 10 15
 Ala Ala Val Asn Ile Ile Gln Pro Leu Leu Ser His Asp Ala Ile Val
 20 25 30
 Ser Ala Ser Glu Ala Thr Arg His Val Ile Ile Ser Asp Ile Ala Gly
 35 40 45
 Asn Val Asp Lys Val Ser Asp Leu Leu Ala Ala Leu Asp Cys Pro Gly
 50 55 60
 Thr Ser Val Asp Met Thr Glu Tyr Glu Val Lys Tyr Ala Asn Pro Ala
 65 70 75 80
 Ala Leu Val Ser Tyr Cys Gln Asp Val Leu Gly Thr Leu Ala Glu Asp
 85 90 95
 Asp Ala Phe Gln Met Phe Ile Gln Pro Gly Thr Asn Lys Ile Phe Val
 100 105 110
 Val Ser Ser Pro Arg Leu Ala Asn Lys Ala Glu Gln Leu Leu Lys Ser
 115 120 125
 Leu Asp Val Pro Glu Met Ala His Thr Leu Asp Asp Pro Ala Ser Thr
 130 135 140

Ala Leu Ala Leu Gly Gly Thr Gly Thr Thr Ser Pro Lys Ser Leu Arg
 145 150 155 160
 Phe Phe Met Tyr Lys Leu Lys Tyr Gln Asn Gly Glu Val Ile Ala Asn
 165 170 175
 Ala Leu Gln Asp Ile Gly Tyr Asn Leu Tyr Val Thr Thr Ala Met Asp
 180 185 190
 Glu Asp Phe Ile Asn Thr Leu Asn Ser Ile Gln Trp Leu Glu Val Asn
 195 200 205
 Asn Ser Ile Val Ile Ile Gly Asn Gln Gly Asn Val Asp Arg Val Ile
 210 215 220
 Gly Leu Leu Asn Gly Leu Asp Leu Pro Pro Lys Gln Val Tyr Ile Glu
 225 230 235 240
 Val Leu Ile Leu Asp Thr Ser Leu Glu Lys Ser Trp Asp Phe Gly Val
 245 250 255
 Gln Trp Val Ala Leu Gly Asp Glu Gln Ser Lys Val Ala Tyr Ala Ser
 260 265 270
 Gly Leu Leu Asn Asn Thr Gly Ile Ala Thr Pro Thr Lys Ala Thr Val
 275 280 285
 Pro Pro Gly Thr Pro Asn Pro Gly Ser Ile Pro Leu Pro Thr Pro Gly
 290 295 300
 Gln Leu Thr Gly Phe Ser Asp Met Leu Asn Ser Ser Ser Ala Phe Gly
 305 310 315 320
 Leu Gly Ile Ile Gly Asn Val Leu Ser His Lys Gly Lys Ser Phe Leu
 325 330 335
 Thr Leu Gly Gly Leu Leu Ser Ala Leu Asp Gln Asp Gly Asp Thr Val
 340 345 350
 Ile Val Leu Asn Pro Arg Ile Met Ala Gln Asp Thr Gln Gln Ala Ser
 355 360 365
 Phe Phe Val Gly Gln Thr Val Pro Tyr Gln Thr Thr Asn Thr Ile Ile
 370 375 380
 Gln Glu Thr Gly Thr Val Thr Gln Asn Ile Asp Tyr Glu Asp Ile Gly
 385 390 395 400
 Val Asn Leu Val Val Thr Ser Thr Val Ala Pro Asn Asn Val Val Thr
 405 410 415
 Leu Gln Ile Glu Gln Thr Ile Ser Glu Leu His Ser Ala Ser Gly Ser
 420 425 430
 Leu Thr Pro Val Thr Asp Lys Thr Tyr Ala Ala Thr Arg Leu Gln Ile
 435 440 445
 Pro Asp Gly Cys Phe Leu Val Met Ser Gly His Ile Arg Asp Lys Thr
 450 455 460
 Thr Lys Val Val Ser Gly Val Pro Leu Leu Asn Ser Ile Pro Leu Ile
 465 470 475 480
 Arg Gly Leu Phe Ser Arg Thr Ile Asp Gln Arg Gln Lys Arg Asn Ile
 485 490 495
 Met Met Phe Ile Lys Pro Lys Val Ile Ser Ser Phe Glu Glu Gly Thr
 500 505 510
 Arg Val Thr Asn Lys Glu Gly Tyr Arg Tyr Asn Trp Glu Ala Asp Glu
 515 520 525
 Gly Ser Met Gln Val Ala Pro Arg His Ala Pro Glu Cys Gln Gly Pro
 530 535 540
 Pro Ser Leu Gln Ala Glu Ser Asp Phe Lys Ile Ile Glu Ile Glu Ala
 545 550 555 560
 Gln

<210>745

<211>381

<212>PRT

<213>Chlamydia pneumoniae

<400>745

Leu Lys Lys Asn Pro Val Lys Thr Val Ile Leu Asn Ile Gly Arg Lys
 1 5 10 15
 Ile Leu Gln Gly Ile Lys Lys Xaa Lys Lys Ile Gly Ile Xaa Ser
 20 25 30
 Gly Leu Phe Phe Leu Asp Leu Val Leu Leu Gly Val Ser Xaa Gln Arg

35 40 45
 Pro Thr Glu Thr Ser Ala Asn Val Lys His Asn Leu Arg Asp Glu Lys
 50 55 60
 Leu Ala Ala Cys Pro Lys Asn Ser Ala Ala Ser Leu Ser Ala Lys Lys
 65 70 75 80
 Ser His Thr Lys Lys Thr Thr Pro Gly Ser Ile Pro Ser Lys Val Phe
 85 90 95
 Ser Lys Phe Asp Ala Thr Cln Asp Lys Thr Phe Glu Lys Thr Ser Gly
 100 105 110
 Ser Ala Phe Pro Ala Lys Pro Thr Thr Leu Lys Glu Leu Glu Glu Arg
 115 120 125
 Lys Lys Pro Arg Pro Glu Arg Arg Thr Thr Ala Asp Val Lys Arg Ser
 130 135 140
 Pro Arg Phe Leu Pro Thr Gln Glu Val Glu Glu Pro Val Pro Ala Ala
 145 150 155 160
 Ser Lys Glu Gln Leu Asp Ser Ile Gln Val Trp Glu Glu Lys Cln Asn
 165 170 175
 Tyr Ala Arg Arg Ala Val Asn Ala Ile Asn Leu Ser Ile Lys Lys Gln
 180 185 190
 Leu Glu Glu Gln Thr Ser Thr Val Thr Glu Lys Asp Val Gln Pro Lys
 195 200 205
 Thr Gln Ala Thr Pro His Ala Ser Lys Lys Asn Val Ala Ser Pro Ser
 210 215 220
 Thr Ser Met Pro Gly Ile Gln Lys Ala Ala Thr Thr Val Ala Val Pro
 225 230 235 240
 Gln Asp Lys Ser Glu Glu Glu Lys Val Lys Glu Arg Leu Thr Lys Arg
 245 250 255
 Glu Leu Thr Cys Glu Asp Leu Lys Asp Asn Gly Tyr Thr Val Asn Phe
 260 265 270
 Glu Asp Ile Ser Ile Leu Glu Leu Glu Gln Phe Val Ser Lys Ile Ser
 275 280 285
 Gly Thr Asn Phe Val Phe Asp Ser Asn Asp Leu Gln Phe Asn Val Thr
 290 295 300
 Ile Val Ser His Asp Pro Thr Ser Val Asp Asp Leu Ser Thr Ile Leu
 305 310 315 320
 Leu Gln Val Leu Lys Met His Asp Leu Lys Val Val Glu Gln Gly Asn
 325 330 335
 Asn Val Leu Ile Tyr Arg Asn Pro His Leu Ser Lys Leu Ser Thr Val
 340 345 350
 Val Thr Asp Ser Ser Leu Lys Glu Thr Cys Glu Ala Val Val Val Thr
 355 360 365
 Arg Val Phe Arg Leu Tyr Ser Val Ser Pro Leu Gln Gln
 370 375 380

<210>746

<211>94

<212>PRT

<213>Chlamydia pneumoniae

<400>746

Phe Cys Phe Ser Ser Gln Thr Cys Ile Leu Ser Asn Cys Ser Leu Glu
 1 5 10 15
 Ala Ala Gly Thr Gly Ser Ser Thr Ser Cys Val Gly Lys Lys Arg Gly
 20 25 30
 Asp Leu Phe Thr Ser Ala Val Val Leu Arg Ser Gly Arg Gly Phe Phe
 35 40 45
 Leu Ser Ser Ser Ser Phe Arg Val Val Gly Phe Ala Gly Asn Ala Asp
 50 55 60
 Pro Glu Val Phe Trp Lys Val Leu Ser Trp Val Ala Ser Asn Leu Glu
 65 70 75 80
 Lys Thr Leu Leu Gly Ile Glu Pro Gly Val Val Phe Leu Val
 85 90

<210>747

<211>502

<212>PRT

<213>Chlamydia pneumoniae

<400>747

Met Asp Cys Arg Gly Gly Ile Pro Leu Pro Glu Pro Gln Val Ile Gly
1 5 10 15
Gly Tyr His Val Lys Lys Ile Leu Ser Lys Lys Leu Arg Ser Arg Val
20 25 30
Val His Gly Leu His Pro Glu Thr Arg His Ser Thr Val Ile Lys Val
35 40 45
Phe Ser Pro Ser Pro Ser Phe Thr Ser Arg Ser Val Tyr Asn Phe Leu
50 55 60
Lys Glu Ala Gln Ser Leu His Gln Ile Thr His Pro Asn Ile Val Lys
65 70 75 80
Phe His Arg Tyr Gly Lys Trp Gln Asp Cys Leu Tyr Ile Ala Met Glu
85 90 95
Tyr Ile Glu Gly Ile Ser Leu Arg Glu Tyr Ile Leu Ala Gln Phe Ile
100 105 110
Ser Leu Pro Gln Ala Ile Asp Ile Ile Phe Asp Ile Ala Gln Ala Leu
115 120 125
Glu His Leu His Ser Arg Asn Ile Leu His Lys Asp Ile Lys Pro Glu
130 135 140
Asn Ile Leu Ile Thr Pro Gln Gly Lys Ile Lys Leu Ile Asp Phe Gly
145 150 155 160
Leu Ala Asp Trp Asp Thr Glu Ile Gln Arg Ala His Pro Ser Val Ile
165 170 175
Gly Thr Pro Tyr Tyr Met Ser Pro Glu Gln Arg Gln Gly Glu Ser His
180 185 190
Ser Pro Ala Ser Asp Ile Tyr Ala Leu Gly Leu Leu Ala Tyr Glu Leu
195 200 205
Ile Leu Gly His Leu Ser Leu Gly Arg Val Phe Leu Ser Leu Val Pro
210 215 220
Glu Arg Ile Ser Lys Ile Leu Ala Lys Ala Leu Gln Pro Ser Pro Asn
225 230 235 240
Asn Arg Tyr Ser Ser Thr Arg Glu Phe Ile Gln Asp Ile His His Tyr
245 250 255
Arg Met Ser Gly Asp Met Gln Glu Asp Leu Arg Ile Lys Asp His Thr
260 265 270
Val Ala Leu Tyr Glu Gln Leu Gln Thr Gln Arg Phe Trp Leu Ala Pro
275 280 285
Glu Thr Leu Arg Phe Pro Asp Phe Ile Ser Gly Val Leu Tyr His Gln
290 295 300
Gly Tyr Pro Leu Tyr Pro His Ala Tyr Asp Thr Leu Leu Glu Gly Asp
305 310 315 320
Val Phe Asn Leu Trp Leu Gly Tyr Ser Pro Ile Ser Asn Ala Thr Ile
325 330 335
Ala Leu Ser Val Val Lys Ser Leu Val Cys Gln Gln Asp Leu Gln Arg
340 345 350
Pro Leu Leu Asp Arg Val Cys Glu Ile Asn Glu Cys Leu Ile Arg Met
355 360 365
Lys Ile Pro Ile Asp Glu Met Gly Ile Ser Ile Leu Cys Leu Glu Ile
370 375 380
Ser Lys Glu Asn Lys Glu Leu Ser Trp Ile Ala Cys Gly Lys Thr Val
385 390 395 400
Phe Trp Ile Lys Arg Gln Gly Arg Val Val Gln Asp Phe Glu Ser Phe
405 410 415
Ser Pro Gly Leu Gly Lys Ile Thr Ser Leu Gln Ile Arg Glu Thr Lys
420 425 430
Val Ala Trp Glu Ile Gly Asp Glu Ala Val Val Cys Thr Leu Glu Leu
435 440 445
Glu Glu Ser Val Ala Ser Leu Lys Thr Leu Ser Leu Ala Glu Leu Gln
450 455 460
Asp Arg Arg Gln Lys Ala Ile Phe Cys Pro Ile Glu Ser Ile His Gly
465 470 475 480
Gly Ile Gln Ser Arg Gln His Gly Ser Asn Ser Pro Ser Thr Leu Ile
485 490 495
Ser Leu Lys Arg Ile Arg

500

<210>748

<211>374

<212>PRT

<213>Chlamydia pneumoniae

<400>748

Arg Tyr Phe Met Ala Val Ala Ala Asp Ser Ser Ala Ser Trp Leu Lys
 1 5 10 15
 Ser Arg Asn Asn Phe Leu Ser Ser Leu Gly Lys Thr Glu Glu Gln Val
 20 25 30
 Ala Ala Pro Glu Phe Pro Lys Glu Leu Cys Gln His Lys Ile Arg Glu
 35 40 45
 Lys Phe Arg Leu Glu Asp Val Gln Val Ser Ile Lys Phe Arg Gly Ser
 50 55 60
 Ile Thr Ala Val Glu Ala Thr Lys Glu Phe Gly Val His Leu Leu Ile
 65 70 75 80
 Gln Pro Met Val Val Gln Pro Trp Glu Val Glu Asn Leu Leu Phe Leu
 85 90 95
 Thr Ser Glu Glu Asp Leu Gln Glu Leu Met Val Ala Val Phe Asp Asp
 100 105 110
 Ala Ser Leu Ala Ser Tyr Phe Tyr Glu Lys Asp Lys Leu Leu Gly Phe
 115 120 125
 His Tyr Tyr Phe Val Ala Glu Ala Cys Lys Leu Phe Glu Glu Leu Gln
 130 135 140
 Trp Val Pro Ser Leu Ser Ala Lys Val Gly Gly Asp Ala Ile Phe Thr
 145 150 155 160
 Ala Thr Ser Leu Gln Gly Ser Phe Gln Val Val Asp Ile Ser Leu Arg
 165 170 175
 Leu Asp Gly Lys Asn Val Arg Cys Arg Leu Leu Leu Pro Glu Asp Thr
 180 185 190
 Phe Gln Ser Cys Gln Lys Phe Phe Ser Gly Leu His Asp Glu Ser Asp
 195 200 205
 Leu His Asn Ile Asp Gln Thr Gln Gln Ile Ser Leu Ser Val Glu Val
 210 215 220
 Gly Tyr Ser Gln Leu Thr Gln Glu Glu Trp His Gln Val Val Pro Gly
 225 230 235 240
 Ser Phe Ile Met Leu Asp Ser Cys Leu Tyr Asp Pro Glu Thr Glu Glu
 245 250 255
 Ser Gly Ala Leu Leu Thr Val Gln Lys His Gln Phe Phe Gly Gly Arg
 260 265 270
 Phe Leu Thr Pro Ser Ser Gly Glu Phe Lys Ile Thr Ser Tyr Pro Asn
 275 280 285
 Leu Thr His Glu Asp Pro Pro Leu Pro Glu Asn Pro Gln Ala Ser Ala
 290 295 300
 Ala Pro Leu Pro Gly Tyr Ser Arg Leu Val Val Glu Val Ala Arg Tyr
 305 310 315 320
 Ser Leu Ala Val Ser Glu Phe Ile Lys Leu Asn Leu Gly Ser Ile Leu
 325 330 335
 Ser Leu Gly Asn His Pro Ala Tyr Gly Val Asp Ile Ile Leu Asp Gly
 340 345 350
 Ala Lys Val Gly Arg Gly Glu Ile Ile Ala Leu Gly Asp Val Leu Gly
 355 360 365
 Ile Arg Val Leu Glu Val
 370

<210>749

<211>261

<212>PRT

<213>Chlamydia pneumoniae

<400>749

Phe Met Glu Leu Lys Lys Thr Ala Glu Ser Leu Tyr Ser Ala Lys Thr
 1 5 10 15
 Asp Asn His Thr Val Tyr Gln Asn Ser Pro Glu Pro Arg Asp Ser Arg
 20 25 30
 Asp Val Lys Val Phe Ser Leu Glu Gly Lys Gln Thr Arg Gln Glu Lys

1	5	10	15
Asp Val Asn Leu Thr Thr Val Val Gly Arg Ile Thr Glu Val Val Gly			
20	25	30	
Met Leu Ile Lys Ala Val Val Pro Asn Val Arg Val Gly Glu Val Cys			
35	40	45	
Leu Val Lys Arg Asn Gly Met Glu Pro Leu Val Thr Glu Val Val Gly			
50	55	60	
Phe Thr Gln Ser Phe Ala Phe Leu Ser Pro Leu Gly Glu Leu Ser Gly			
65	70	75	80
Val Ser Pro Ser Ser Glu Val Ile Pro Thr Gly Leu Pro Leu His Ile			
85	90	95	
Arg Ala Gly Asn Gly Leu Leu Gly Arg Val Leu Asn Gly Leu Gly Glu			
100	105	110	
Pro Ile Asp Val Glu Thr Lys Gly Pro Leu Gln Asn Val Asp Gln Thr			
115	120	125	
Phe Pro Ile Phe Arg Ala Pro Pro Asp Pro Leu His Arg Ala Lys Leu			
130	135	140	
Arg Gln Ile Leu Ser Thr Gly Val Arg Cys Ile Asp Gly Met Leu Thr			
145	150	155	160
Val Ala Arg Gly Gln Arg Ile Gly Ile Phe Ala Gly Ala Gly Val Gly			
165	170	175	
Lys Ser Ser Leu Leu Gly Met Ile Ala Arg Asn Ala Glu Glu Ala Asp			
180	185	190	
Val Asn Val Ile Ala Leu Ile Gly Glu Arg Gly Arg Glu Val Arg Glu			
195	200	205	
Phe Ile Glu Gly Asp Leu Gly Glu Glu Gly Met Lys Arg Ser Val Ile			
210	215	220	
Val Val Ser Thr Ser Asp Gln Ser Ser Gln Leu Arg Leu Asn Ala Ala			
225	230	235	240
Tyr Val Gly Thr Ala Ile Ala Glu Tyr Phe Arg Asp Gln Gly Lys Thr			
245	250	255	
Val Val Leu Met Met Asp Ser Val Thr Arg Phe Ala Arg Ala Leu Arg			
260	265	270	
Glu Val Gly Leu Ala Ala Gly Glu Pro Pro Ala Arg Ala Gly Tyr Thr			
275	280	285	
Pro Ser Val Phe Ser Thr Leu Pro Arg Leu Leu Glu Arg Ser Gly Ala			
290	295	300	
Ser Asp Lys Gly Thr Ile Thr Ala Phe Tyr Thr Val Leu Val Ala Gly			
305	310	315	320
Asp Asp Met Asn Glu Pro Val Ala Asp Glu Val Lys Ser Ile Leu Asp			
325	330	335	
Gly His Ile Val Leu Ser Asn Ala Leu Ala Gln Ala Tyr His Tyr Pro			
340	345	350	
Ala Ile Asp Val Leu Ala Ser Ile Ser Arg Leu Leu Thr Ala Ile Val			
355	360	365	
Pro Glu Glu Gln Arg Arg Ile Ile Gly Lys Ala Arg Glu Val Leu Ala			
370	375	380	
Lys Tyr Lys Ala Asn Glu Met Leu Ile Arg Ile Gly Glu Tyr Arg Arg			
385	390	395	400
Gly Ser Asp Arg Glu Ile Asp Phe Ala Ile Asp His Ile Asp Lys Leu			
405	410	415	
Asn Arg Phe Leu Lys Gln Asp Ile His Glu Lys Thr Asn Tyr Glu Glu			
420	425	430	
Ala Ala Gln Gln Leu Arg Ala Ile Phe Arg			
435	440		

<210>752

<211>235

<212>FRT

<213>Chlamydia pneumoniae

<400>752

Ala Phe Lys Thr Val Lys Arg Phe Phe Cys Phe Met Ile Asp Pro Val

1 5 10 15

Glu Cys Phe Pro Asn Leu Asp Gly Asp Ala Glu Ala Gln Ser Ile Thr

20

25

30

Gln Asn Ser Gly Thr Pro Leu Ala Ser Glu Leu Lys Lys Asp Ile Ser
 35 40 45
 Pro Phe Ala Leu Gly Ser Tyr Ala Ala Pro Lys Asp Thr Thr Leu Val
 50 55 60
 Gln Gly Phe Lys Pro Asn Pro Met Ala Met Met Gln Asp Gln Asn Ser
 65 70 75 80
 Asn Leu Ile Asp Pro Glu Leu Gln Glu Ala Leu Glu Ser Glu Glu Leu
 85 90 95
 Gln Glu Gln Ile Asn Asn Leu Lys Gly Arg Leu Trp Asp Phe Arg Ser
 100 105 110
 Thr Phe Glu Asp Ser Gln Thr Thr Ala Gln Phe Ala Asp Glu His Phe
 115 120 125
 Gln Ala Val Gly Val Ile Ile Asp Leu Ile Asn Glu Asp Leu Asn Thr
 130 135 140
 Ile Ala Glu His Thr Gln Gln Asp Ala Arg Lys Glu Asp Lys Glu Glu
 145 150 155 160
 Gly Ser Val Thr Arg Lys Ile Ile Asp Trp Val Ser Ser Gly Glu Glu
 165 170 175
 Val Leu Asn Arg Ala Leu Leu Tyr Phe Ser Asp Arg Asp Gly Asn Arg
 180 185 190
 Glu Ser Leu Ala Asn Phe Leu Lys Val Gln Tyr Ala Val Gln Arg Ala
 195 200 205
 Thr Gln Arg Ala Glu Leu Phe Ala Ser Ile Val Gly Thr Ser Val Ser
 210 215 220
 Ser Val Lys Thr Ile Met Thr Thr Gln Leu Gly
 225 230 235

<210>753

<211>91

<212>PRT

<213>Chlamydia pneumoniae

<400>753

Arg Ser Arg Gly Glu Lys Ser Met Ala Thr Asn Lys Ser Cys Thr Ala
 1 5 10 15
 Phe Asp Phe Asn Lys Met Leu Asp Gly Val Cys Thr Tyr Val Lys Gly
 20 25 30
 Val Gln Gln Tyr Leu Thr Glu Leu Glu Thr Ser Thr Gln Gly Thr Val
 35 40 45
 Asp Leu Gly Thr Met Phe Asn Leu Gln Phe Arg Met Gln Ile Leu Ser
 50 55 60
 Gln Tyr Met Glu Ser Val Ser Asn Ile Leu Thr Ala Val Asn Thr Glu
 65 70 75 80
 Met Ile Thr Met Ala Arg Ala Val Lys Gly Ser
 85 90

<210>754

<211>102

<212>PRT

<213>Chlamydia pneumoniae

<400>754

Thr Thr Ile Asn Asn Gln Val Leu Gly Phe Ile Asn Tyr Leu Tyr Leu
 1 5 10 15
 Gly Arg Tyr Ser Met Phe Asn Met Glu Asn Thr Ala Lys Glu Glu Lys
 20 25 30
 Asn Ser Gln Pro Leu Leu Asp Leu Glu Gln Asp Met Gln Asp His Asp
 35 40 45
 Arg Ala Gln Glu Leu Lys Ala Ser Val Gln Asp Lys Val His Lys Leu
 50 55 60
 His Ala Leu Leu Arg Glu Gly Ser Asp Lys Glu Ser Phe Gly Gln Gln
 65 70 75 80
 Gln Ser Leu Leu Ala Gly Tyr Val Ala Leu Gln Lys Val Leu Gly Arg
 85 90 95
 Ile Asn Arg Lys Met Ile
 100

<210>755

<211>440

<212>PRT

<213>Chlamydia pneumoniae

<400>755

Pro Glu Leu Ile Phe Gly Ala Glu Phe His Leu Asp Ser Gly Lys Thr
 1 5 10 15
 Tyr Ile Leu Gly Thr Asp Pro Thr Thr Cys Asp Ile Val Phe Asn Asp
 20 25 30
 Leu Ser Val Ser His Gln His Ala Lys Ile Thr Val Gly Asn Asp Gly
 35 40 45
 Gly Ile Leu Ile Glu Asp Leu Asp Ser Lys Asn Gly Val Ile Val Glu
 50 55 60
 Gly Arg Lys Ile Asp Lys Thr Ser Thr Leu Ser Ser Asn Gln Val Val
 65 70 75 80
 Ala Leu Gly Thr Thr Leu Phe Leu Leu Ile Asp His His Ala Pro Ala
 85 90 95
 Asp Thr Ile Val Ala Ser Leu Ser Pro Asp Asp Tyr Ser Leu Phe Gly
 100 105 110
 Arg Gln Gln Asp Ala Glu Ala Leu Glu Arg Gln Glu Ala Gln Glu Glu
 115 120 125
 Glu Glu Lys Gln Lys Arg Ala Thr Leu Pro Ala Gly Ser Phe Ile Leu
 130 135 140
 Thr Leu Phe Val Gly Gly Leu Ala Ile Leu Phe Gly Ile Gly Thr Ala
 145 150 155 160
 Ser Leu Phe His Thr Lys Glu Val Val Pro Leu Glu Asn Ile Asp Tyr
 165 170 175
 Gln Glu Asp Leu Ala Gln Val Ile Asn Gln Phe Pro Thr Val Arg Tyr
 180 185 190
 Thr Phe Asn Lys Thr Asn Ser Gln Leu Phe Leu Ile Gly His Val Lys
 195 200 205
 Asn Ser Thr Asp Lys Ser Glu Leu Leu Tyr Lys Val Asp Ala Leu Ser
 210 215 220
 Phe Val Lys Ser Val Asp Asn Val Ile Asp Asp Glu Ala Val Trp
 225 230 235 240
 Gln Glu Met Asn Ile Leu Leu Ser Lys Arg Pro Glu Phe Lys Gly Ile
 245 250 255
 Ser Met His Ser Pro Glu Pro Gly Lys Phe Ile Ile Thr Gly Tyr Val
 260 265 270
 Lys Thr Glu Glu Gln Ala Ala Cys Leu Val Asp Tyr Leu Asn Ile His
 275 280 285
 Phe Asn Ser Leu Ser Leu Leu Glu Asn Lys Val Val Val Xaa Thr Xaa
 290 295 300
 Met Leu Lys Ala Ile Ala Gly His Leu Leu Gln Gly Gly Phe Ala Asn
 305 310 315 320
 Ile His Val Ala Phe Val Asn Gly Glu Val Ile Leu Thr Gly Tyr Val
 325 330 335
 Asn Asn Asp Asp Ala Glu Lys Phe Arg Ala Val Val Gln Glu Leu Ser
 340 345 350
 Gly Ile Pro Gly Val Arg Leu Val Lys Asn Phe Ala Val Leu Leu Pro
 355 360 365
 Ala Glu Glu Gly Ile Ile Asp Leu Asn Leu Arg Tyr Pro Asn Arg Tyr
 370 375 380
 Arg Val Thr Gly Tyr Ser Arg Tyr Gly Glu Ile Ser Ile Asn Val Val
 385 390 395 400
 Val Asn Gly Arg Ile Leu Thr Arg Gly Asp Val Ile Asp Gly Met Thr
 405 410 415
 Val Thr Ser Ile Gln Pro Asn Ala Ile Phe Leu Glu Lys Xaa Gly Leu
 420 425 430
 Lys Tyr Lys Ile Asp Tyr Asn Lys
 435 440

<210>756

<211>202

<212>PRT

<213>Chlamydia pneumoniae

<400>756

Arg Thr Ser Pro Arg Gln Asp Pro Gln Pro Lys Ser Ala Glu Pro Ser
 1 5 10 15
 Leu Lys Asn Thr Ala Arg Asp Glu Thr Pro Leu Lys Glu Asn Lys Pro
 20 25 30
 Val Glu Glu Lys Ala Asn Lys Lys Ala Thr Pro Asp Ser Pro Glu Lys
 35 40 45
 Lys Asp Gln Pro Glu Glu Gly Ser Lys Lys Glu Gly Ser Lys Ile Glu
 50 55 60
 Ala Thr Pro Leu Asp Ser Gln Lys Glu Ser Glu Asp Lys Glu Ala Glu
 65 70 75 80
 Glu Ala Phe Val Gln Glu Glu Glu Asn Leu Thr Glu Asp Asn Lys
 85 90 95
 Glu Asp Ser Asp Ser Ala Ala Asp Ala Asn Asp Asp Thr Ala Ser Asp
 100 105 110
 His Thr Ala Glu Asp Asn Lys Glu Thr Pro Lys Lys Val Glu Asn Glu
 115 120 125
 Lys Ser Ala Val Leu Ser Pro Phe His Val Gln Asp Leu Phe Arg Phe
 130 135 140
 Asp Gln Thr Ile Phe Pro Ala Glu Ile Asp Asp Ile Ala Lys Lys Asn
 145 150 155 160
 Ile Ser Val Asp Leu Thr Gln Pro Ser Arg Phe Leu Leu Lys Val Leu
 165 170 175
 Ala Gly Ala Asn Ile Trp Ser Arg Val Pro Phe Arg Leu Arg Lys Asn
 180 185 190
 Leu Tyr Phe Arg Tyr Gly Ser Tyr Asn Leu
 195 200

<210>757

<211>255

<212>PRT

<213>Chlamydia pneumoniae

<400>757

Met Ala Val Arg Leu Ile Val Asp Glu Gly Pro Leu Ser Gly Val Ile
 1 5 10 15
 Phe Val Leu Glu Asp Gly Ile Ser Trp Ser Ile Gly Arg Asp Ser Ser
 20 25 30
 Ala Asn Asp Ile Pro Ile Glu Asp Pro Lys Leu Gly Ala Ser Gln Ala
 35 40 45
 Ile Ile Asn Lys Thr Asp Gly Ser Tyr Tyr Ile Thr Asn Leu Asp Asp
 50 55 60
 Thr Ile Pro Ile Val Val Asn Gly Val Ala Ile Gln Glu Thr Thr Gln
 65 70 75 80
 Leu Lys Asn Glu Asp Thr Ile Leu Leu Gly Ser Asn Gln Tyr Ser Phe
 85 90 95
 Leu Ser Asp Glu Phe Asp Pro Gln Asp Leu Val Tyr Asp Phe Asp Ile
 100 105 110
 Pro Glu Glu Asn Phe Ser Asn Asp Ser Gly Asp Leu Ser Asp Ser Asn
 115 120 125
 Glu Gln Gly Lys Asp Leu Glu Pro Arg Gln Thr Ser Glu Thr Asn His
 130 135 140
 Ser Pro Lys Pro Lys Glu Lys Leu Thr Lys Asp Gln Gly Ser Ser Asp
 145 150 155 160
 Pro Ile Thr Ser Gly Asp Gln Glu Leu Ala Asp Ala Phe Leu Ala Ser
 165 170 175
 Ala Lys Ala Glu Lys Asn Gln Pro Arg Ala Lys Val Ala Lys Lys Gly
 180 185 190
 Leu Lys Glu Ser Ser Asn Glu Ser Leu Asn Pro Lys Glu Gln Asn Ala
 195 200 205
 Lys Asp Ser Pro Lys Gly Glu Glu Arg Thr Asn Lys Pro Gln Asn Ala
 210 215 220
 Ile Met Glu Asp Asn Gly Leu Arg Leu Gly Lys Ile Arg Asn Gln Ser
 225 230 235 240
 Gln Gln Asn Pro Leu Leu Lys Thr Gln Pro Gly Met Arg Leu Pro
 245 250 255

<210>758

<211>162

<212>PRT

<213>Chlamydia pneumoniae

<400>758

Leu Asp Leu Lys Glu Glu Lys Ala Gly Phe Arg Asn Glu Ile Val Ser
 1 5 10 15
 Ile Pro Gln Gly Thr Lys Thr Thr Ile Ala Ala Leu Glu Asn Thr Ser
 20 25 30
 Met Leu Glu Lys Leu Ile Lys Asn Phe Ala Thr Tyr Met Gly Ile Thr
 35 40 45
 Ser Thr Leu Glu Leu Asp Ala Asp Gly Ala Tyr Val Leu Pro Ile Ser
 50 55 60
 Glu Val Val Lys Val Arg Ala Gln Gln Asn Ala Asp Asn Glu Ile Val
 65 70 75 80
 Leu Ser Ala Ser Leu Gly Ala Leu Pro Pro Ser Ala Asp Thr Ala Lys
 85 90 95
 Leu Tyr Leu Gln Met Met Ile Gly Asn Leu Phe Gly Arg Glu Thr Gly
 100 105 110
 Gly Ser Ala Leu Gly Leu Asp Ser Glu Gly Asn Val Val Met Val Arg
 115 120 125
 Arg Phe Ser Gly Asp Thr Thr Tyr Asp Asp Phe Val Arg His Val Glu
 130 135 140
 Ser Phe Met Asn Phe Ser Glu Thr Trp Leu Ser Asp Leu Gly Leu Gly
 145 150 155 160
 Lys Gln

<210>759

<211>341

<212>PRT

<213>Chlamydia pneumoniae

<400>759

Val Leu Met Val Leu Gly Val Val Gly Ile Ser Tyr Arg Glu Ala Ala
 1 5 10 15
 Leu Lys Glu Arg Glu Arg Ala Ile Gln Tyr Leu Gln Ser Phe Glu Lys
 20 25 30
 Asn Leu Phe Leu Ala Gln Arg Phe Leu Gly Lys Gly Gly Ala Phe Ile
 35 40 45
 Pro Leu Leu Thr Cys His Arg Ala Glu Leu Tyr Tyr Tyr Ser Glu Ser
 50 55 60
 Pro Glu Ile Ala Gln Ala Ala Leu Leu Ser Glu Leu Thr Ser Gln Gly
 65 70 75 80
 Ile Arg Pro Tyr Arg His Arg Gly Leu Ser Cys Phe Thr His Leu Phe
 85 90 95
 Gln Val Thr Ser Gly Ile Asp Ser Leu Ile Phe Gly Glu Thr Glu Ile
 100 105 110
 Gln Gly Gln Val Lys Arg Ala Tyr Leu Lys Gly Ser Lys Glu Arg Glu
 115 120 125
 Leu Pro Phe Asp Leu His Phe Leu Phe Gln Lys Ala Leu Lys Glu Gly
 130 135 140
 Lys Glu Tyr Arg Ser Arg Ile Gly Phe Pro Asp His Gln Val Thr Ile
 145 150 155 160
 Glu Ser Val Val Gln Glu Ile Leu Leu Ser Tyr Asp Lys Ser Ile Tyr
 165 170 175
 Thr Asn Phe Leu Phe Val Gly Tyr Ser Asp Ile Asn Arg Lys Val Ala
 180 185 190
 Ala Tyr Leu Tyr Gln His Gly Tyr His Arg Ile Thr Phe Cys Ser Arg
 195 200 205
 Gln Gln Val Thr Ala Pro Tyr Arg Thr Leu Ser Arg Glu Thr Leu Ser
 210 215 220
 Phe Arg Gln Pro Tyr Asp Val Ile Phe Phe Gly Ser Ser Glu Ser Ala
 225 230 235 240
 Ser Gln Phe Ser Asp Leu Ser Cys Glu Ser Leu Ala Ser Ile Pro Lys
 245 250 255
 Arg Ile Val Phe Asp Phe Asn Val Pro Arg Thr Phe Leu Trp Lys Glu

260 265 270
 Thr Pro Thr Gly Phe Val Tyr Leu Asp Ile Asp Phe Ile Ser Glu Cys
 275 280 285
 Val Gln Lys Arg Leu Gln Cys Thr Lys Glu Gly Val Asn Lys Ala Lys
 290 295 300
 Leu Leu Leu Thr Cys Ala Ala Lys Lys Gln Trp Glu Ile Tyr Glu Lys
 305 310 315 320
 Lys Ser Ser His Ile Thr Gln Arg Gln Ile Ser Ser Pro Arg Ile Pro
 325 330 335
 Ser Val Leu Ser Tyr
 340

<210>760

<211>426

<212>PRT

<213>Chlamydia pneumoniae

<400>760

Met Ala Ala Tyr Thr Glu Ala Ser Ile Leu Ser Leu Ala Ser Leu Asp
 1 5 10 15
 His Ile Arg Leu Arg Ala Gly Met Tyr Ile Gly Arg Leu Gly Asn Gly
 20 25 30
 Ser Gln Lys Glu Asp Gly Ile Tyr Thr Leu Phe Lys Glu Val Val Asp
 35 40 45
 Asn Gly Ile Asp Glu Phe Ile Met Gly His Gly Lys Ser Leu Lys Ile
 50 55 60
 Ser Ala Ser Asp Lys Gln Ile Ser Ile Gln Asp Gln Gly Arg Gly Ile
 65 70 75 80
 Pro Leu Gly Lys Leu Ile Asp Cys Val Ser Lys Ile Asn Thr Gly Ala
 85 90 95
 Lys Tyr Thr Gln Asp Val Phe His Phe Ser Val Gly Leu Asn Gly Val
 100 105 110
 Gly Leu Lys Ala Val Asn Ala Leu Ser Glu Ile Phe Ser Val Arg Ser
 115 120 125
 Val Arg Lys Lys Lys Tyr His Leu Ala Thr Phe His Arg Gly Val Leu
 130 135 140
 Gln Glu Ser Lys Gln Gly Ser Thr Lys Asp Pro Asp Gly Thr Phe Val
 145 150 155 160
 Ser Phe Thr Pro Asp Pro Ser Ile Phe Pro Glu Phe Thr Phe Asn His
 165 170 175
 Asp Phe Leu Lys Asp Lys Ile Arg Gln Tyr Thr Tyr Leu His Ser Gly
 180 185 190
 Leu Glu Ile Arg Phe Asn Asp Glu Val Phe Ile Ser His Asn Gly Leu
 195 200 205
 Lys Asp Leu Phe Asp Ala Glu Ile Thr Glu Pro Pro Leu Tyr Ser Pro
 210 215 220
 Leu Phe Phe Gln Asn Glu Asp Leu Thr Phe Ile Phe Ser His Leu Glu
 225 230 235 240
 Gly Asn Thr Glu Arg Tyr Phe Ser Phe Val Asn Gly Gln Glu Thr Leu
 245 250 255
 Asp Gly Gly Thr His Leu Thr Ala Phe Lys Glu Ala Ile Val Lys Gly
 260 265 270
 Val Asn Glu Phe Phe Gly Lys Thr Phe Val Ser Asn Asp Ile Arg Glu
 275 280 285
 Gly Ile Val Gly Cys Ile Ala Ile Lys Ile Ala Ser Pro Ile Phe Glu
 290 295 300
 Ser Gln Thr Lys Asn Lys Leu Gly Asn Thr Glu Ile Arg Ser Ser Leu
 305 310 315 320
 Ile Lys Asp Val Lys Glu Ala Ile Val Gln Ala Leu Arg Lys Asp Lys
 325 330 335
 Val Ala Pro Glu Leu Leu Leu Glu Lys Ile Lys Phe Asn Glu Lys Thr
 340 345 350
 Arg Lys Asn Ile Gln Phe Ile Lys Gln Asp Leu Lys Ser Lys Gln Lys
 355 360 365
 Lys Val His Tyr Lys Ile Pro Lys Leu Arg Asp Cys Lys Phe His Tyr
 370 375 380

Asn Asp Arg Ser Leu Tyr Gly Glu Ala Ser Ser Ile Phe Leu Thr Glu
 385 390 395 400
 Gly Ser Leu Arg Pro His Gln Phe Leu Leu Gln Glu Ile Pro Ser His
 405 410 415
 Lys Leu Ser Phe His Phe Glu Glu Ser Leu
 420 425

<210>761

<211>125

<212>PRT

<213>Chlamydia pneumoniae

<400>761

Trp Thr Phe Phe Cys Leu Leu Leu Arg Ser Cys Phe Ile Asn Trp Ile
 1 5 10 15
 Phe Phe Arg Val Phe Ser Leu Asn Phe Ile Phe Ser Lys Arg Ser Ser
 20 25 30
 Gly Ala Thr Leu Ser Leu Arg Arg Ala Cys Thr Ile Ala Ser Phe Thr
 35 40 45
 Ser Leu Ile Lys Glu Asp Arg Ile Cys Val Phe Pro Ser Leu Phe Phe
 50 55 60
 Val Cys Asp Ser Lys Ile Gly Glu Ala Ile Phe Ile Ala Met Gln Pro
 65 70 75 80
 Thr Met Pro Ser Arg Met Ser Leu Glu Thr Asn Val Phe Pro Lys Asn
 85 90 95
 Ser Leu Thr Pro Phe Thr Met Ala Ser Leu Lys Ala Val Arg Cys Val
 100 105 110
 Pro Pro Ser Arg Val Ser Cys Pro Leu Thr Lys Glu Lys
 115 120 125

<210>762

<211>210

<212>PRT

<213>Chlamydia pneumoniae

<400>762

Gly Leu Phe Asp Phe Pro Tyr Arg Arg Glu Ser Ala Ser Ala Ser Ile
 1 5 10 15
 Leu Ala Ser Arg Asn Pro Leu Thr Gln Ala Val Phe Ser Leu Arg Gly
 20 25 30
 Lys Pro Met Asn Val Phe Ser Leu Glu Glu Thr Lys Met Tyr Lys Asn
 35 40 45
 Asp Glu Leu Phe Tyr Leu Ala Thr Ala Leu Gly Ile Thr Gln Asn Glu
 50 55 60
 Ile Gln His Leu Arg Tyr Asn Lys Val Ile Leu Ala Thr Asp Ala Asp
 65 70 75 80
 Val Asp Gly Met His Ile Arg Asn Leu Leu Ile Thr Phe Phe Leu Lys
 85 90 95
 Thr Leu Leu Pro Leu Val Glu Asn Asn His Leu Phe Ile Leu Glu Thr
 100 105 110
 Pro Leu Phe Lys Val Arg Asn Lys Thr Thr Thr Leu Tyr Tyr Tyr Ser
 115 120 125
 Glu Gln Glu Lys Met Gln Ala Leu Gln Gln Phe Gly Lys Lys Asp Ser
 130 135 140
 Ser Leu Glu Ile Thr Arg Phe Lys Gly Leu Gly Glu Ile Ser Pro Lys
 145 150 155 160
 Glu Phe Ala Ala Phe Ile Gly Pro Glu Ile Arg Leu Thr Pro Val Thr
 165 170 175
 Ile Thr Ser Leu Glu Ser Ile Ser Ser Ile Leu Gln Phe Tyr Met Gly
 180 185 190
 Lys Asn Thr Lys Glu Arg Lys Gln Phe Ile Met Asp Asn Leu Ile Thr
 195 200 205

Asp Phe

210

<210>763

<211>479

<212>PRT

<213>Chlamydia pneumoniae

<400>763

Phe Met Arg Asp Val Ser Glu Leu Phe Arg Thr His Phe Met His Tyr
 1 5 10 15
 Ala Ser Tyr Val Ile Leu Glu Arg Ala Ile Pro His Ile Leu Asp Gly
 20 25 30
 Leu Lys Pro Val Gln Arg Arg Leu Leu Trp Thr Leu Phe Leu Met Asp
 35 40 45
 Asp Gly Lys Met His Lys Val Ala Asn Ile Ala Gly Arg Thr Met Ala
 50 55 60
 Leu His Pro His Gly Asp Ala Pro Ile Val Glu Ala Leu Val Val Leu
 65 70 75 80
 Ala Asn Lys Gly Tyr Leu Ile Asp Thr Gln Gly Asn Phe Gly Asn Pro
 85 90 95
 Leu Thr Gly Asp Pro His Ala Ala Ala Arg Tyr Ile Glu Ala Arg Leu
 100 105 110
 Ser Pro Leu Ala Arg Glu Thr Leu Phe Asn Thr Asp Leu Ile Ala Phe
 115 120 125
 His Asp Ser Tyr Asp Gly Arg Glu Lys Glu Pro Asp Ile Leu Pro Ala
 130 135 140
 Lys Leu Pro Val Leu Leu Leu His Gly Val Asp Gly Ile Ala Val Gly
 145 150 155 160
 Met Thr Thr Lys Ile Phe Pro His Asn Phe Ala Glu Leu Leu Lys Ala
 165 170 175
 Gln Ile Ala Ile Leu Asn Asp Lys Lys Phe Thr Val Phe Pro Asp Phe
 180 185 190
 Pro Ser Gly Gly Leu Met Asp Pro Ser Glu Tyr Gln Asp Gly Leu Gly
 195 200 205
 Ser Ile Thr Leu Arg Ala Ser Ile Asp Ile Ile Asn Asp Lys Thr Leu
 210 215 220
 Val Val Lys Gln Ile Cys Pro Gln Ser Thr Thr Glu Thr Leu Ile Arg
 225 230 235 240
 Ser Ile Glu Asn Ala Ala Lys Arg Gly Thr Ile Lys Ile Asp Thr Ile
 245 250 255
 Gln Asp Phe Ser Thr Asp Val Pro His Ile Glu Ile Lys Leu Pro Lys
 260 265 270
 Gly Ser Arg Ala Lys Glu Met Leu Pro Leu Leu Phe Glu His Thr Glu
 275 280 285
 Cys Gln Val Ile Leu Tyr Ser Lys Pro Thr Val Ile Tyr Glu Asn Lys
 290 295 300
 Pro Val Glu Cys Ser Ile Ser Glu Ile Leu Lys Leu His Thr Thr Ala
 305 310 315 320
 Leu Gln Gly Tyr Leu Glu Lys Glu Leu Leu Leu Gln Glu Gln Leu
 325 330 335
 Thr Leu Asp His Tyr His Lys Thr Leu Glu Tyr Ile Phe Ile Lys His
 340 345 350
 Lys Leu Tyr Asp Ser Val Arg Glu Val Leu Ala Ile Asn Lys Lys Ile
 355 360 365
 Ser Ala Asp Asp Leu His Gln Ala Val Leu His Ala Leu Glu Pro Trp
 370 375 380
 Leu His Glu Leu Ala Thr Pro Val Thr Lys Gln Asp Thr Ser Gln Leu
 385 390 395 400
 Ala Ser Leu Thr Ile Lys Lys Ile Leu Cys Phe Asn Glu Glu Ala Cys
 405 410 415
 Thr Lys Glu Leu Ala Ile Glu Lys Lys Gln Ala Ala Ile Gln Lys
 420 425 430
 Asp Leu Gly Arg Ile Lys Glu Val Thr Val Lys Tyr Leu Lys Gly Leu
 435 440 445
 Leu Glu Arg His Gly His Leu Gly Glu Arg Lys Thr Gln Ile Thr Asn
 450 455 460
 Phe Lys Thr Ala Lys Thr Ser Ile Leu Lys Gln Gln Thr Leu Ile
 465 470 475

<210>764

<211>109

<212>PRT

<213>Chlamydia pneumoniae

<400>764

Arg Ala Val Met Ser Phe Thr Tyr Phe Leu Ala Leu Pro Val Asp Arg
 1 5 10 15
 Leu Met Gln Glu Arg Phe Leu Cys Ser Pro Lys Arg Trp Ala Pro Phe
 20 25 30
 Ile Asn Ser Pro Leu Tyr Leu Thr Leu Ile Ala Asp His Asp Thr Pro
 35 40 45
 Tyr Leu Ala Lys Asn Leu Asp Lys Phe Pro Leu Pro Val Glu Gln Trp
 50 55 60
 Glu Lys Thr Val Leu His Val Ser Ser Leu Leu Lys Ser Ile Phe Leu
 65 70 75 80
 Cys Ser Asp Leu Ser Ser Leu Arg Leu Leu Ala Cys Thr Lys Phe Glu
 85 90 95
 Ile Leu Thr Leu Asn Asp Leu Tyr Cys Ala Gln Asn Ile
 100 105

<210>765

<211>325

<212>PRT

<213>Chlamydia pneumoniae

<400>765

Met Lys Thr Val Thr Ser Phe Thr Val Cys Lys Glu Asn Ser Gly Arg
 1 5 10 15
 Leu Asp Lys Tyr Leu Thr Glu Val His Pro Lys Tyr Ser Arg Ala Phe
 20 25 30
 Tyr Gln Glu His Ile Leu Ser Gly Leu Val Gln Ile Asn Gly Gln Ile
 35 40 45
 Asn Thr Arg Val Ala Thr Arg Leu Asn Cys Gly Asp Ile Val Thr Ile
 50 55 60
 Asp Ile Gln Glu Lys Glu Glu Leu Leu Glu Leu Leu Pro Glu Ala Ile
 65 70 75 80
 Pro Leu Asp Lys Val Tyr Glu Asp Gly Met Ile Leu Val Ile Asn Lys
 85 90 95
 Pro Arg Asp Met Val Val His Pro Ala Pro Gly His Phe His Gly Thr
 100 105 110
 Leu Val His Ala Leu Leu His Glu Ile Gly Glu Arg Leu Lys Glu Glu
 115 120 125
 Phe Pro Glu Glu Pro Trp Arg Pro Gly Ile Val His Arg Leu Asp Lys
 130 135 140
 Asp Thr Ser Gly Leu Ile Ile Thr Ala Lys Thr Arg Gln Ala Lys Lys
 145 150 155 160
 Val Phe Ser Glu Leu Phe Ser Thr Lys Arg Leu Lys Lys Ser Tyr Leu
 165 170 175
 Ala Val Cys Ile Gly Lys Pro Arg Ser Thr Thr Ile His Thr His Ile
 180 185 190
 Ser Arg His Gln Asn Lys Arg Lys Glu Met Thr Val Ser Ser Gln Gly
 195 200 205
 Lys Glu Ala Val Thr His Cys Gln Val Leu Ala Phe Asn Gly Lys Leu
 210 215 220
 Ser Phe Val Ala Leu Ser Pro Glu Thr Gly Arg Thr His Gln Leu Arg
 225 230 235 240
 Val His Met Lys His Leu Gly Thr Pro Ile Leu Gly Asp Pro Val Tyr
 245 250 255
 Gly Ile Pro Ser Met Asn Ser Ser Tyr Gly Leu Asp Lys Gln Gln Leu
 260 265 270
 His Ala Tyr Ser Val Asp Phe Thr His Pro Glu Thr Arg Gln Phe Cys
 275 280 285
 Ser Leu Lys Ala Gly Leu Pro Glu Asp Met Arg Ser Leu Leu Ile Lys
 290 295 300
 Glu Phe Arg Asn Glu Thr Thr Ile Leu Asn Lys Asn Leu Leu Glu Ser
 305 310 315 320
 Ile Leu Lys Glu Gln
 325

<210>766

<211>82

<212>PRT

<213>Chlamydia pneumoniae

<400>766

Leu Arg Ile Thr Met Lys Glu Phe Leu Ala Tyr Ile Ile Lys Asn Leu
 1 5 10 15
 Val Asp Arg Pro Glu Glu Val Arg Ile Lys Glu Val Gln Gly Thr His
 20 25 30
 Thr Ile Ile Tyr Glu Leu Ser Val Ala Lys Pro Asp Ile Gly Lys Ile
 35 40 45
 Ile Gly Lys Glu Gly Arg Thr Ile Lys Ala Ile Arg Thr Leu Leu Val
 50 55 60
 Ser Val Ala Ser Arg Asn Asn Val Arg Val Ser Leu Glu Ile Met Glu
 65 70 75 80
 Glu Lys

<210>767

<211>273

<212>PRT

<213>Chlamydia pneumoniae

<400>767

Lys Arg Met Val Met Phe Asn Asn Lys Met Ile Leu Ile Ala Gly Pro
 1 5 10 15
 Cys Val Ile Glu Gly Glu Asp Ile Thr Leu Glu Ile Ala Gly Lys Leu
 20 25 30
 Gln Ser Ile Leu Ala Pro Tyr Ser Asp Arg Ile Gln Tyr Phe Phe Lys
 35 40 45
 Ser Ser Tyr Asp Lys Ala Asn Arg Ser Ser Leu Asn Ser Phe Arg Gly
 50 55 60
 Pro Gly Leu Thr Glu Gly Leu Arg Ile Leu Ala Lys Val Lys Glu Thr
 65 70 75 80
 Phe Gly Val Gly Ile Leu Thr Asp Val His Thr Pro Gln Asp Ala Tyr
 85 90 95
 Ala Ala Ala Glu Val Cys Asn Ile Leu Gln Val Pro Ala Phe Leu Cys
 100 105 110
 Xaa Gln Thr Asp Leu Leu Val Ala Thr Ala Glu Thr Gly Ala Ile Val
 115 120 125
 Asn Leu Lys Lys Gly Gln Phe Leu Ser Pro Trp Asp Met Glu Gly Pro
 130 135 140
 Ile Asn Lys Val Leu Ser Thr Gly Asn Asn Lys Ile Leu Leu Thr Glu
 145 150 155 160
 Arg Gly Cys Ser Phe Gly Tyr Asn Asn Leu Val Ser Asp Met Arg Ser
 165 170 175
 Ile Pro Val Leu Ser Arg Ser Gly Phe Pro Val Ile Phe Asp Ala Thr
 180 185 190
 His Ser Val Gln Leu Pro Gly Ala Leu Ser Thr Glu Ser Gly Gly Leu
 195 200 205
 Thr Glu Phe Val Pro Thr Leu Ser Arg Ala Ala Leu Ala Ala Gly Ala
 210 215 220
 His Gly Leu Phe Ile Glu Thr His Thr Asn Pro Lys Ile Ala Lys Ser
 225 230 235 240
 Asp Ala Ala Ser Met Leu Ser Leu Glu Glu Phe Ala Ala Leu Leu Pro
 245 250 255
 Thr Trp Asp Gln Leu Phe Thr Cys Val Ser Ser Phe Asp Met Val Ser
 260 265 270
 Ala

<210>768

<211>162

<212>PRT

<213>Chlamydia pneumoniae

<400>768

Met Thr Lys Phe Leu Tyr Cys Gly Leu Phe Tyr Ser Leu Gly Leu Leu
 1 5 10 15

Val Leu Ala Phe Gly Thr Met Val Ala Ile Ile Gln Val Asp Gln Ile
 20 25 30
 Cys Asp Val Ser Cys Met Asn Lys His Phe Gln Glu Ser Pro Pro Phe
 35 40 45
 Leu Lys Ile Lys Lys Val Asn Val Ser Lys Gln Ile Cys Ser Pro Glu
 50 55 60
 Glu Arg Phe Phe His Cys Lys Ile Asp Lys Ser Cys Met Glu Leu His
 65 70 75 80
 Phe Pro Gln Ser Ser Tyr Ser Cys Lys Glu Tyr Leu Thr Arg Ile Ser
 85 90 95
 Gly His Ile Leu Thr Gln Asn Phe Glu Lys Gln Met Gln Phe Arg Gly
 100 105 110
 Asn Ser Gly Leu Leu Asn Tyr Gln Asp Gly Ser Leu His Val Tyr Asp
 115 120 125
 Cys Arg Phe Gln Val Asp Pro Val Pro Gly Tyr Gly Ser Pro Asp Lys
 130 135 140
 Glu Asp Ser Ser Ser Gly Gly Met Lys Thr Leu Tyr Leu Ser Leu Phe
 145 150 155 160
 Arg Asn

<210>769

<211>240

<212>PRT

<213>Chlamydia pneumoniae

<400>769

Met Pro Ile Leu Ser Val Cys Asn Leu Val Lys Lys Tyr Asn Lys Lys
 1 5 10 15
 Pro Val Thr Asn Asp Val Ser Phe Gln Ile Asn Pro Gly Glu Ile Val
 20 25 30
 Gly Leu Leu Gly Pro Asn Gly Ala Gly Lys Thr Thr Ala Phe Tyr Leu
 35 40 45
 Thr Val Gly Leu Ile Arg Pro Asp Ser Gly Lys Ile Ile Phe Lys Asn
 50 55 60
 Val Asp Val Thr Lys Lys Thr Met Asp His Arg Ala Arg Leu Gly Ile
 65 70 75 80
 Gly Tyr Leu Ala Gln Glu Pro Thr Ile Phe Lys Glu Leu Thr Val Gln
 85 90 95
 Asp Asn Leu Ile Cys Ile Leu Glu Ile Ile Tyr Lys Ala Arg Lys Gln
 100 105 110
 Gln Ser His Leu Leu Asn Thr Leu Val Asp Asp Leu Gln Leu Gly Ser
 115 120 125
 Cys Leu His Lys Lys Ala Gly Thr Leu Ser Gly Gly Glu Arg Arg Arg
 130 135 140
 Leu Glu Ile Ala Cys Val Leu Ala Leu Asn Pro Ser Val Leu Leu Leu
 145 150 155 160
 Asp Glu Pro Phe Ala Asn Val Asp Pro Leu Val Ile Gln Asn Val Lys
 165 170 175
 Tyr Leu Ile Lys Ile Leu Ala Gly Arg Gly Ile Gly Ile Leu Ile Thr
 180 185 190
 Asp His Asn Ala Lys Glu Leu Leu Ser Ile Ala Asp Arg Cys Tyr Leu
 195 200 205
 Ile Ile Asp Gly Lys Ile Phe Phe Glu Gly Ser Ser Ser Gln Met Ile
 210 215 220
 Ser Asn Pro Met Val Lys Gln His Tyr Leu Gly Asp Ser Phe Ser Tyr
 225 230 235 240

<210>770

<211>299

<212>PRT

<213>Chlamydia pneumoniae

<400>770

Arg Thr Ser Thr Arg Leu Asp Tyr Arg Ser Gly Cys Ile Leu Ser Lys
 1 5 10 15
 Ile Leu Pro Phe Pro Glu Leu Trp Lys Met Leu Leu Gly Phe Leu Cys
 20 25 30

Asp Cys Pro Cys Ala Ser Trp Gln Cys Ala Ala Val Ala Asn Cys Tyr
 35 40 45
 Asp Ser Val Phe Met Ser Arg Pro Glu His Lys Pro Asn Ile Pro Tyr
 50 55 60
 Ile Thr Lys Ala Thr Arg Arg Gly Leu Arg Met Lys Thr Leu Ala Tyr
 65 70 75 80
 Leu Ala Ser Leu Lys Asp Ala Arg Gln Leu Ala Tyr Asp Phe Leu Lys
 85 90 95
 Asp Pro Gly Ser Leu Ala Arg Leu Ala Lys Ala Leu Ile Ala Pro Lys
 100 105 110
 Glu Ala Leu Gln Glu Gly Asn Leu Phe Phe Tyr Gly Cys Ser Asn Ile
 115 120 125
 Glu Asp Ile Leu Glu Glu Met Arg Arg Pro His Arg Ile Leu Leu Leu
 130 135 140
 Gly Phe Ser Tyr Cys Gln Lys Pro Lys Ala Cys Pro Glu Gly Arg Phe
 145 150 155 160
 Asn Asp Ala Cys Arg Tyr Asp Pro Ser His Pro Thr Cys Ala Ser Cys
 165 170 175
 Ser Ile Gly Thr Met Met Arg Leu Asn Ala Arg Arg Tyr Thr Thr Val
 180 185 190
 Ile Ile Pro Thr Phe Ile Asp Ile Ala Lys His Leu His Thr Leu Lys
 195 200 205
 Lys Arg Tyr Pro Gly Tyr Gln Ile Leu Phe Ala Val Thr Ala Cys Glu
 210 215 220
 Leu Ser Leu Lys Met Phe Gly Asp Tyr Ala Ser Val Met Asn Leu Lys
 225 230 235 240
 Gly Val Gly Ile Arg Leu Thr Gly Arg Ile Cys Asn Thr Phe Lys Ala
 245 250 255
 Phe Lys Leu Ala Glu Arg Gly Val Lys Pro Gly Val Thr Ile Leu Glu
 260 265 270
 Glu Asp Gly Phe Glu Val Leu Ala Arg Ile Leu Thr Glu Tyr Ser Ser
 275 280 285
 Ala Pro Phe Pro Arg Asp Phe Cys Glu Ile His
 290 295

<210>771

<211>438

<212>PRT

<213>Chlamydia pneumoniae

<400>771

Val Tyr Lys Ser Leu Val Thr Phe Lys Cys Gly Glu His Leu Gly Ala
 1 5 10 15
 Ile Trp Ala Tyr Phe Thr Ala Ser Thr Val Val Ala Leu Asn Pro Thr
 20 25 30
 Ala Thr Met Asp His Val Lys Ala Ala Ile Leu Glu Glu Ala Lys Glu
 35 40 45
 Leu Asp Asn Ser Ser Phe Gln Leu Ala Ser Ser Ile Lys Ser Ala Met
 50 55 60
 Thr Ser Ile Val Asn Ser Ser Gly Ser Phe Ser Val Thr Val Asn Ser
 65 70 75 80
 Ser Thr Leu Gln Tyr Thr Ile Tyr Ser Glu Lys Asn Gly Lys Val Glu
 85 90 95
 Ile Asn Gln Ile Leu Leu Asn Tyr Gly Ser Thr Gly Phe Leu Pro Glu
 100 105 110
 Ile Thr Lys Leu Ala Lys Thr Asn Ala Glu Ser Thr Ala Arg Ser Tyr
 115 120 125
 Phe Arg Phe Lys Ala Leu Ala Ala Val Glu Ser Glu Asn Val Gln Asn
 130 135 140
 Lys Ile Glu Asp Leu Gln Ser Gln Leu Gln Glu Phe Thr Asn Met Lys
 145 150 155 160
 Thr Glu Leu Phe Asp Gly Gln Leu Leu Ser Gln Ala Ser Glu Leu Arg
 165 170 175
 Ala Leu Pro Leu Leu Ser Ala Val Ala Ser Val Leu Ile Asp Arg Tyr
 180 185 190
 Met Pro Lys Glu Val Asp Tyr Leu Asn Glu Ile Tyr Lys Lys Leu Tyr

195 200 205
 Tyr Ser Asn Leu Gly Ser Ser Val Gly Asn Ser Ile Ile Asp Ala Ile
 210 215 220
 Ser Gln Tyr Val Asn Gly Ala Thr Tyr Phe Asn Phe Ala Ser Tyr Val
 225 230 235 240
 Gly Gln Gln Pro Ala Val Gly Ala Gly Gly Ala Asn Ala Phe Pro Gly
 245 250 255
 Ser Gln Glu Ser Ala Gln Ala Lys Leu Asp Gln Glu Arg Lys Gln Ala
 260 265 270
 Ala Leu Tyr Leu Gln Glu Thr Arg Gly Ala Leu Thr Val Ile Glu Glu
 275 280 285
 Gln Arg Ala Arg Val Leu Lys Asp Asp Lys Ile Thr Asn Glu Gln Arg
 290 295 300
 Ser Thr Ile Leu Asp Ser Leu Arg Asn Tyr Glu Asp Asn Ile Asn Ser
 305 310 315 320
 Ile Ser Gly Ser Leu Val Leu Leu Gln Asn Tyr Leu Gln Pro Leu Ser
 325 330 335
 Ile Ala Gly Gly Ser Val Ala Gly Thr Phe Glu Val Lys Glu Gly Gln
 340 345 350
 Glu Gln Trp Gln Ala Arg Leu Gln Ile Leu Glu Glu Ala Leu Val Ser
 355 360 365
 Gly Leu Val Gly Asn Met Ile Asn Gly Gly Met Phe Pro Leu Gln Ser
 370 375 380
 Thr Ile Gln Ser Asp Gln Gln Ser Phe Ala Asp Met Gly Gln Asn Phe
 385 390 395 400
 Gln Leu Asp Leu Gln Met His Leu Thr Ser Met Gln Gln Glu Trp Thr
 405 410 415
 Val Val Ala Thr Ser Leu Gln Leu Leu Asn Gln Met Tyr Leu Ser Leu
 420 425 430
 Ala Arg Ser Leu Thr Gly
 435
 <210>772
 <211>422
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>772
 Ala Asp Ile Asp Met Ile Tyr Ser Thr Ser Ile Ser Thr Phe Tyr Lys
 1 5 10 15
 Lys Leu Ser Leu Val Ser Ser Met His Ser Phe Ala Gln Arg His Arg
 20 25 30
 Glu Ser Leu Glu His Ile Ala Asn Tyr Glu Lys Thr Thr Ala Glu Arg
 35 40 45
 Asp Ile Leu Lys Arg Leu Ile Glu Val Leu Asp Gln Arg Ala Ser Glu
 50 55 60
 Arg Tyr Arg Ser Ala Val Glu Lys Leu His Lys Tyr Glu Val Glu Arg
 65 70 75 80
 Ala Thr Val Ala Lys Ser Ile Pro Val Ala Ala Ile His Glu Lys Pro
 85 90 95
 Leu Ser Ser Thr His Ala Ser Val Gln Val Thr Ala Ser Thr Pro Ala
 100 105 110
 Ala Thr Gly Ser Gly Val Gly Ala Tyr Tyr Asn Ala Val Lys Gln Lys
 115 120 125
 Trp Ala Gln Asp Leu Ile Val Glu Leu Asn Thr Val Met Thr Thr Ile
 130 135 140
 Met Ala Ser Val Asn Ser Lys Asn Pro Ala Asn Lys Asp Val Phe Asp
 145 150 155 160
 Lys Leu Asn Thr Glu Leu Gln Ala Leu Val Ala Ala Gly Asn Asn Leu
 165 170 175
 Thr Glu Glu Asn Phe Gln Thr Leu Tyr Asn Phe Pro Glu Glu Ile Phe
 180 185 190
 Thr Ala Ile Gln Arg Ala Asp Thr Phe Thr Gly Gly Met Lys Thr Asp
 195 200 205
 Phe Thr Asn Gln Leu Ala Gly Lys Tyr Gly Asn Gln Ala Thr Leu Thr
 210 215 220

Gln Thr Phe Ala Asp Gly Arg Val Glu Gly Phe Lys Asp Ile Leu Thr
 225 230 235 240
 Ala Val Gln Gly Val Leu Thr Pro Glu Gln Phe Thr Ile Phe Ala Glu
 245 250 255
 Ile Ala Thr Glu Leu Gln Ala Leu Ala Asp His Val Gly Asn Phe Asp
 260 265 270
 Glu Ala Gly Leu Gln Arg Ile Glu Asp Ala Gly Glu Lys Leu Ala Ala
 275 280 285
 Val Ile Asn Ser Ser Asp Leu Thr Arg Asn Asp Lys Ile Met Phe Cys
 290 295 300
 Gln His Ile Thr Asp Leu Tyr Ser Asp Gln Val Ala Ala Leu Gly Ser
 305 310 315 320
 Phe Asp Thr Val Leu Asp Ala Ser Ile Tyr Val Asn Gln His Gln Gly
 325 330 335
 Thr Met Phe Ser Asn Leu Ser Ser Phe Val Gly Ser Leu Ile Gly Thr
 340 345 350
 Phe Ala Pro Ile Asp Leu Ser Ser Ser Gln Gly Asp Ile Ser Ser Ala
 355 360 365
 Ala Leu Ala Gly Ala Leu Gln Thr Ala Arg Gly Leu Asn Ser Arg Phe
 370 375 380
 Asn Glu Leu Thr Ala Glu Gln Gln Lys Leu Ile Asn Glu Cys Ile Asn
 385 390 395 400
 Leu Trp Leu Pro Leu Ser Val Val Ser Thr Leu Val Leu Ser Gly Leu
 405 410 415
 Ile Leu Gln His Leu Leu
 420

<210>773

<211>645

<212>PRT

<213>Chlamydia pneumoniae

<400>773

Lys Tyr Tyr Leu Phe Ser Met Ser Thr Phe Ser Ile Gln Asn Arg Leu
 1 5 10 15
 Arg Thr Ile Ser Gly Glu Ser Thr Arg Ile Ile Lys Leu Asp His Lys
 20 25 30
 Tyr Ser Gly Phe Asp Pro Arg Ser Val Pro Ala Ile Asn Leu Glu Glu
 35 40 45
 Leu Asn Ser Gly Ile Tyr Ala Leu Arg His Leu Met Asn Ala Leu Gln
 50 55 60
 Ser Glu Asn Thr Asn Val Ala Ala Leu Leu Asn Pro Asn Asn Thr Ile
 65 70 75 80
 Phe Pro Thr Thr Ser Trp Thr Asp Tyr Lys His Ser Arg Pro Gln Ala
 85 90 95
 Ser Ser Pro Arg Ala Pro Ser Ser Gln Thr Pro Thr Asp Ile Val Ser
 100 105 110
 Ala Ala Ala Leu Ala Leu Val Leu Val Ile Asp Gly Gly Leu Ala Glu
 115 120 125
 Leu Val Ala Ser Val Thr Glu Ile Asp Leu Gly Ala Leu Ser Thr Ile
 130 135 140
 Ser Thr Val Arg Gln Leu Met Ala Ser Tyr Leu Gly Leu Thr Thr Leu
 145 150 155 160
 Thr Ala Glu Gln Glu Lys Val Val Phe Ser Ser Ser Tyr Val Pro Ser
 165 170 175
 Glu Lys Asn Leu Leu Glu His Val Lys Gln Glu Lys Ala Ala Glu Ile
 180 185 190
 Gln Ala Lys Gln Glu Glu Ile Lys Ala Val Leu Glu Ala Lys Gly Val
 195 200 205
 Ser Thr Glu Glu Ile Glu Ala Ile Leu Lys Glu Tyr Pro Asp Ile Tyr
 210 215 220
 Ala Ala Asp Phe Phe Lys Glu Phe Ile Glu Glu Pro Leu His Thr Tyr
 225 230 235 240
 Arg Ala Lys Val Gly Ala Pro Ile Gln Glu Met Asn Glu Asn Ala Ile
 245 250 255
 Gln Leu Leu Pro Thr Pro Pro Ala Ile Thr Pro Asp Asn Val Asn Glu

260 265 270
 Val. Asn Gly Met Asn Thr Leu Ser Thr Ile Leu Gln Ala Ile Asp Asp
 275 280 285
 Ala Ile Lys Gln Ala Pro Ala Leu Gly Gly Asp Gln Glu Ile Il Thr
 290 295 300
 Ile Leu Gln Thr Leu Val Pro Leu Val Asp Lys Thr Thr Phe Thr Lys
 305 310 315 320
 Ala Glu Phe Asp Leu Ile Tyr Thr Ala Thr Gln Leu Pro Asn Thr Ala
 325 330 335
 Ser Leu Lys Leu Tyr Leu Thr Asp Arg Gln Ile Ala Glu Tyr Arg Gly
 340 345 350
 Lys Ile Thr Lys Val Tyr Gln Asn Ser Ile Gln Asn Leu Ser Glu Thr
 355 360 365
 Lys Arg Val Val Glu Asn Asn Arg Ser Met Leu Glu Thr Gln Leu Ser
 370 375 380
 Met Phe Gln Gln Ala Gln Asn Cys Phe Val Thr Trp Ile Ser Gln Ala
 385 390 395 400
 Asn Ala Leu Asn Ile Ala Ile Thr Asn Lys Tyr Ile Ser Ala Val Leu
 405 410 415
 Thr Thr Ser Met Glu Met Tyr Gly Gly Leu Leu Cys Leu Ser Tyr Met
 420 425 430
 Tyr Glu Arg Leu Ala Asp Asp Glu Lys Ala Ile Phe Asp Lys Ser Val
 435 440 445
 Asn Glu Tyr Leu Pro Ile His Ile Val Val Gly Gly Ser Trp Val Asn
 450 455 460
 Gly Trp Ile Ala Lys Met Ala Ala Tyr Gln Glu Leu Ala Glu Tyr Ser
 465 470 475 480
 Leu Gly Thr Ala Val Thr Ser Gln Asp Gln Ile Lys Ala Tyr Leu Gln
 485 490 495
 Thr Arg Gly Asn Glu Phe Lys Ala Thr Arg His Phe Phe His Asn Ile
 500 505 510
 Gly Asp Gln Met Tyr Gln Phe Ala Asn Glu Thr Val Phe Gly Asn Cys
 515 520 525
 Leu Thr Thr Ala Asn Gly Ala Ile Gln Pro Asp Leu Gly Gly Phe Ile
 530 535 540
 Arg Glu Ala Met Thr Asn Val Gly Thr Val Glu Ala Asp Tyr Val Ser
 545 550 555 560
 Asn Ala Gln Arg Ile Leu Asn Glu Phe Asn Thr Ala Ala Thr Ala His
 565 570 575
 Val Leu Gln Leu Gln Leu Gln Ile Ala Glu Leu Gln Lys Lys Ala Asp
 580 585 590
 Asp Leu Asp Pro Gly Lys Ala Ser Phe Thr Glu Asn Arg Lys Phe Ala
 595 600 605
 Val Ala Ala Leu Asp His Ile Gly Glu Leu Arg Arg Cys Phe Asn Phe
 610 615 620
 Tyr Asp Phe Xaa Leu Ser Ala Thr Lys Ala Arg Gly Phe Phe Lys Thr
 625 630 635 640
 Phe Asp Arg Arg Asn
 645

<210>774

<211>284

<212>PRT

<213>Chlamydia pneumoniae

<400>774

Thr Gln Glu Lys Pro Leu Ser Leu Arg Thr Val Asn Leu Leu Leu Pro
 1 5 10 15
 Leu Trp Ile Thr Ser Glu Ser Leu Gly Asp Ala Leu Ile Ser Met Ile
 20 25 30
 Xaa Asn Ser Gln Leu Pro Lys Gln Glu Ala Phe Leu Lys Pro Leu Ile
 35 40 45
 Glu Glu Ile Asn Phe Asn Asn Leu Ala Ala Asn Ala Leu Asn Ser Leu
 50 55 60
 Leu Gln Ile Thr Asn Glu Phe Ser Thr Thr Ser Val Tyr Tyr Ser Leu
 65 70 75 80

Ser Ser Tyr Leu Val Gln Ser Lys Thr Gly Gln Asn Leu Phe Ala Gly
 85 90 95
 Asp Tyr Tyr Glu Thr Leu Leu Ala Ala Ala Arg Glu Arg Glu Tyr Ile
 100 105 110
 Tyr Arg Asp Thr Ala Arg Cys Lys Gln Ala Ile Asn Leu Val Asn Gly
 115 120 125
 Leu Leu Gln Lys Ile Asn Ser Leu Pro Gly Ala Thr Ser Ala Gln Lys
 130 135 140
 Gln Glu Met Leu Asn Ala Thr Thr Tyr Tyr Gln Tyr Ser Leu Ser Val
 145 150 155 160
 Thr Leu Asn Gln Leu Thr Val Leu Glu Ser Leu Leu Ala Gly Leu Lys
 165 170 175
 Met Thr Leu Gln Thr Thr Ser Asn Asn Lys Tyr Asp Lys Ser Val Phe
 180 185 190
 Lys Ile Glu Ser Phe Asp Asp Trp Ile Pro Thr Leu Ala Ala Leu Glu
 195 200 205
 Ser Phe Leu Thr Ser Gly Phe Pro Asn Ile Ser Ala Thr Gly Gly Leu
 210 215 220
 Gly Pro Leu Phe Thr Gln Val Gln Ser Asp Gln Gln Thr Tyr Thr Ser
 225 230 235 240
 Gln Gly Gln Thr Gln Gln Leu Asn Leu Gln Asn Gln Met Thr Thr Ile
 245 250 255
 Gln Gln Glu Trp Thr Leu Val Ser Thr Ser Met Gln Val Leu Asn Gly
 260 265 270
 Ile Leu Ser Gln Leu Ala Gly Ala Ile Tyr Ser Asn
 275 280

<210>775

<211>212

<212>PRT

<213>Chlamydia pneumoniae

<400>775

Asp Arg Ser Leu Leu Leu Leu Phe Val Ser Ala Gly Val Pro Pro Ala
 1 5 10 15
 Ala Ala Ser Ser Ile Gly Ser Ser Val Asn Gln Leu Tyr Lys Thr Ser
 20 25 30
 Lys Ser Thr Gly Ser Asp Tyr Lys Thr Gln Ile Ser Ala Gly Tyr Asp
 35 40 45
 Ala Tyr Lys Ser Ile Asn Asp Ala Tyr Gly Arg Ala Arg Asn Asp Ala
 50 55 60
 Thr Arg Asp Val Ile Asn Asn Val Ser Thr Pro Ala Leu Thr Arg Ser
 65 70 75 80
 Val Pro Arg Ala Arg Thr Glu Ala Arg Gly Pro Glu Lys Thr Asp Gln
 85 90 95
 Ala Leu Ala Arg Val Ile Ser Gly Asn Ser Arg Thr Leu Gly Asp Val
 100 105 110
 Tyr Ser Gln Val Ser Ala Leu Gln Ser Val Met Gln Ile Ile Gln Ser
 115 120 125
 Asn Pro Gln Ala Asn Asn Glu Glu Ile Arg Gln Lys Leu Thr Ser Ala
 130 135 140
 Val Thr Lys Pro Pro Gln Phe Gly Tyr Pro Tyr Val Gln Leu Ser Asn
 145 150 155 160
 Asp Ser Thr Gln Lys Phe Ile Ala Lys Leu Glu Ser Leu Phe Ala Glu
 165 170 175
 Gly Ser Arg Thr Ala Ala Glu Ile Lys Ala Leu Ser Phe Glu Thr Asn
 180 185 190
 Ser Leu Phe Ile Gln Gln Val Leu Val Asn Ile Gly Ser Leu Tyr Ser
 195 200 205
 Gly Tyr Leu Gln
 210

<210>776

<211>478

<212>PRT

<213>Chlamydia pneumoniae

<400>776

Val Phe Met Val Asn Pro Ile Gly Pro Gly Pro Ile Asp Glu Thr Glu
 1 5 10 15
 Arg Thr Pro Pro Ala Asp Leu Ser Ala Gln Gly Leu Glu Ala Ser Ala
 20 25 30
 Ala Asn Lys Ser Ala Glu Ala Gln Arg Ile Ala Gly Ala Glu Ala Lys
 35 40 45
 Pro Lys Glu Ser Lys Thr Asp Ser Val Glu Arg Trp Ser Ile Leu Arg
 50 55 60
 Ser Ala Val Asn Ala Leu Met Ser Leu Ala Asp Lys Leu Gly Ile Ala
 65 70 75 80
 Ser Ser Asn Ser Ser Ser Ser Thr Ser Arg Ser Ala Asp Val Asp Ser
 85 90 95
 Thr Thr Ala Thr Ala Pro Thr Pro Pro Pro Thr Phe Asp Asp Tyr
 100 105 110
 Lys Thr Gln Ala Gln Thr Ala Tyr Asp Thr Ile Phe Thr Ser Thr Ser
 115 120 125
 Leu Ala Asp Ile Gln Ala Ala Leu Val Ser Leu Gln Asp Ala Val Thr
 130 135 140
 Asn Ile Lys Asp Thr Ala Ala Thr Asp Glu Glu Thr Ala Ile Ala Ala
 145 150 155 160
 Glu Trp Glu Thr Lys Asn Ala Asp Ala Val Lys Val Gly Ala Gln Ile
 165 170 175
 Thr Glu Leu Ala Lys Tyr Ala Ser Asp Asn Gln Ala Ile Leu Asp Ser
 180 185 190
 Leu Gly Lys Leu Thr Ser Phe Asp Leu Leu Gln Ala Ala Leu Leu Gln
 195 200 205
 Ser Val Ala Asn Asn Asn Lys Ala Ala Glu Leu Leu Lys Glu Met Gln
 210 215 220
 Asp Asn Pro Val Val Pro Gly Lys Thr Pro Ala Ile Ala Gln Ser Leu
 225 230 235 240
 Val Asp Gln Thr Asp Ala Thr Ala Thr Gln Ile Glu Lys Asp Gly Asn
 245 250 255
 Ala Ile Arg Asp Ala Tyr Phe Ala Gly Gln Asn Ala Ser Gly Ala Val
 260 265 270
 Glu Asn Ala Lys Ser Asn Asn Ser Ile Ser Asn Ile Asp Ser Ala Lys
 275 280 285
 Ala Ala Ile Ala Thr Ala Lys Thr Gln Ile Ala Glu Ala Gln Lys Lys
 290 295 300
 Phe Pro Asp Ser Pro Ile Leu Gln Glu Ala Glu Gln Met Val Ile Gln
 305 310 315 320
 Ala Glu Lys Asp Leu Lys Asn Ile Lys Pro Ala Asp Gly Ser Asp Val
 325 330 335
 Pro Asn Pro Gly Thr Thr Val Gly Gly Ser Lys Gln Gln Gly Ser Ser
 340 345 350
 Ile Gly Ser Ile Arg Val Ser Met Leu Leu Asp Asp Ala Glu Asn Glu
 355 360 365
 Thr Ala Ser Ile Leu Met Ser Gly Phe Arg Gln Met Ile His Met Phe
 370 375 380
 Asn Thr Glu Asn Pro Asp Ser Gln Ala Ala Gln Gln Glu Leu Ala Ala
 385 390 395 400
 Gln Ala Arg Ala Ala Lys Ala Ala Gly Asp Asp Ser Ala Ala Ala Ala
 405 410 415
 Leu Ala Asp Ala Gln Lys Ala Leu Glu Ala Ala Leu Gly Lys Ala Gly
 420 425 430
 Gln Gln Gln Gly Ile Leu Asn Ala Leu Gly Gln Ile Ala Ser Ala Ala
 435 440 445
 Val Cys Glu Arg Arg Ser Ser Ser Arg Cys Ser Lys Phe Tyr Arg Val
 450 455 460
 Ile Cys Lys Pro Ala Leu Gln Asp Leu Lys Ile Tyr Arg Phe
 465 470 475

<210>777

<211>438

<212>PRT

<213>Chlamydia pneumoniae

<400>777

Pro Ala Trp Ser Ser Val Ser Thr Leu Asn Ile Asp Thr Lys Asp Thr
1 5 10 15
Met Lys Lys Gln Val Tyr Gln Trp Leu Ala Ser Val Val Leu Leu Ala
20 25 30
Leu Thr Ile Ser Gly Tyr Ala Glu Leu Pro Leu Ser Glu Gln Lys Val
35 40 45
Lys Ser His Thr Tyr Thr Thr Leu Asp Glu Val Lys Asp Tyr Leu Ser
50 55 60
Lys Arg Gly Phe Val Glu Thr Arg Lys Gln Asp Gly Val Leu Arg Ile
65 70 75 80
Ala Gly Asp Val Arg Ala Arg Trp Leu Tyr Phe Arg Glu Asp Ile Lys
85 90 95
Asn Pro Ser Asp Lys Asp Lys Tyr Asn Pro Leu Pro Val Asn Arg Tyr
100 105 110
Arg Ser Glu Phe Tyr Leu Tyr Ile Asp Tyr Arg Ala Glu Arg Asn Trp
115 120 125
Leu Ser Ser Lys Met Asn Trp Thr Ala Ile Ala Gly Gly Glu Asn Thr
130 135 140
Ala Ala Gly Val Asp Ile Asn Arg Ala Phe Leu Gly Tyr Arg Phe Tyr
145 150 155 160
Lys Asn Pro Glu Thr Arg Thr Asp Phe Phe Met Glu Ile Gly Arg Ser
165 170 175
Gly Leu Gly Asp Leu Phe Glu Ser Glu Val Gln Phe Gln Ser Asn Phe
180 185 190
Asp Gly Leu His Ile Tyr Trp Thr Arg Glu Leu Ser Lys Asp Tyr Pro
195 200 205
Tyr Gln Val Ile Val His Gly Gly Pro Phe Val Val Asn Met Thr Lys
210 215 220
Lys His Tyr Ala Trp Val Val Glu Gly Ile Leu Asn Arg Leu Pro Lys
225 230 235 240
Gln Phe Phe Val Lys Cys Ser Val Val Asp Trp Asn Thr Phe Val Pro
245 250 255
Ser Glu Thr Ser Thr Thr Glu Lys Ala Ala Thr Asn Ala Met Lys Tyr
260 265 270
Lys Tyr Cys Val Trp Gln Trp Leu Val Gly Lys His Ser Glu Val Pro
275 280 285
Trp Ile Asn Gly Gln Lys Lys Pro Leu Tyr Leu Tyr Gly Ala Phe Leu
290 295 300
Met Asn Pro Leu Ala Lys Ala Thr Lys Thr Thr Leu Asn Gly Lys Glu
305 310 315 320
Asn Leu Ala Trp Phe Ile Gly Gly Thr Leu Gly Gly Leu Arg Lys Ala
325 330 335
Gly Asp Trp Ser Ala Thr Val Arg Tyr Glu Tyr Val Glu Ala Leu Ser
340 345 350
Val Pro Glu Ile Asp Val Ser Gly Ile Gly Arg Gly Asn Leu Leu Lys
355 360 365
Phe Trp Phe Ala Gln Ala Ile Ala Ala Asn Tyr Asp Pro Lys Glu Ala
370 375 380
Asn Gly Phe Thr Asn Tyr Lys Gly Phe Ser Ala Leu Tyr Met Tyr Gly
385 390 395 400
Ile Thr Asp Ser Leu Ser Phe Arg Ala Tyr Gly Ala Tyr Ser Lys Pro
405 410 415
Ala Asn Asp Lys Leu Gly Ser Asp Phe Thr Phe Arg Lys Phe Asp Leu
420 425 430
Gly Ile Ile Ser Ala Phe
435

<210>778

<211>321

<212>PRT

<213>Chlamydia pneumoniae

<400>778

Ala Leu Leu Ala Pro Leu Ser Leu Gly Ile Leu Thr Ser Ser Ile Phe
1 5 10 15

Gln Leu Asn Leu Leu Ser Asp Ile Cys Leu Ala Arg Tyr Val His Glu
 20 25 30
 Ile Gly Pro Leu Tyr Leu Met Tyr Ser Leu Lys Ile Tyr Gln Leu Pro
 35 40 45
 11 His Leu Phe Gly Phe Gly Val Phe Thr Val Leu Leu Pro Ala Ile
 50 55 60
 Ser Arg Cys Val Gln Arg Glu Asp His Glu Arg Gly Leu Lys Leu Met
 65 70 75 80
 Lys Phe Val Leu Thr Leu Thr Met Ser Val Met Ile Ile Met Thr Ala
 85 90 95
 Gly Leu Leu Leu Leu Ala Leu Pro Gly Val Arg Val Leu Tyr Glu His
 100 105 110
 Gly Leu Phe Pro Gln Ser Ala Val Tyr Ala Ile Val Arg Val Leu Arg
 115 120 125
 Gly Tyr Gly Ala Ser Ile Ile Pro Met Ala Leu Ala Pro Leu Val Ser
 130 135 140
 Val Leu Phe Tyr Ala Gln Arg Gln Tyr Ala Val Pro Leu Phe Ile Gly
 145 150 155 160
 Ile Gly Thr Ala Leu Ala Asn Ile Val Leu Ser Leu Val Leu Gly Arg
 165 170 175
 Trp Val Leu Lys Asp Val Ser Gly Ile Ser Tyr Ala Thr Ser Ile Thr
 180 185 190
 Ala Trp Val Gln Leu Tyr Phe Leu Trp Tyr Tyr Ser Ser Lys Arg Leu
 195 200 205
 Pro Met Tyr Ser Lys Leu Leu Trp Glu Ser Ile Arg Arg Ser Ile Lys
 210 215 220
 Val Met Gly Thr Thr Met Leu Ala Cys Met Ile Thr Leu Gly Leu Asn
 225 230 235 240
 Ile Leu Thr Gln Thr Thr Tyr Val Ile Phe Leu Asn Pro Leu Thr Pro
 245 250 255
 Leu Ala Trp Pro Leu Ser Ser Ile Thr Ala Gln Ala Ile Ala Phe Leu
 260 265 270
 Ser Glu Ser Cys Ile Phe Leu Ala Phe Leu Phe Gly Phe Ala Lys Leu
 275 280 285
 Leu Arg Val Glu Asp Leu Ile Asn Leu Ala Ser Phe Glu Tyr Trp Arg
 290 295 300
 Gly Gln Arg Gly Leu Leu Gln Arg Gln His Val Met Gln Asp Thr Gln
 305 310 315 320
 Asn

<210>779

<211>225

<212>PRT

<213>Chlamydia pneumoniae

<400>779

Met Ser Arg Lys Asp Asn Glu Val Ser Leu Ala Arg Ser Ile Phe Asn
 1 5 10 15
 Ile Leu Ser Gly Thr Phe Cys Ser Arg Ile Thr Gly Ile Phe Arg Glu
 20 25 30
 Ile Ala Met Ala Thr Tyr Phe Gly Ala Asp Pro Ile Val Ala Ala Phe
 35 40 45
 Trp Leu Gly Phe Arg Thr Val Phe Phe Leu Arg Lys Ile Leu Gly Gly
 50 55 60
 Leu Ile Leu Glu Gln Ala Phe Ile Pro His Phe Glu Phe Leu Arg Ala
 65 70 75 80
 Gln Ser Leu Asp Arg Ala Ala Phe Phe Phe Arg Arg Phe Ser Arg Leu
 85 90 95
 Ile Lys Gly Ser Thr Ile Ile Phe Thr Leu Leu Ile Glu Ala Val Leu
 100 105 110
 Trp Val Val Leu Gln Tyr Val Glu Glu Gly Thr Tyr Asp Met Ile Leu
 115 120 125
 Leu Thr Met Ile Leu Leu Pro Cys Gly Ile Phe Leu Met Met Tyr Asn
 130 135 140
 Val Asn Gly Ala Leu Leu His Cys Glu Asn Lys Phe Phe Gly Val Gly

145 150 155 160
 Leu Ala Pro Val Val Val Asn Ile Ile Trp Ile Phe Phe Val Ile Ala
 165 170 175
 Ala Arg His Ser Asp Pro Arg Glu Arg Ile Ile Gly Leu Ser Val Ala
 180 185 190
 Leu Val Ile Gly Phe Phe Phe Glu Trp Leu Ile Thr Val Pro Gly Val
 195 200 205
 Trp Lys Phe Leu Leu Glu Ala Lys Ser Pro Pro Gln Glu His Asp Ser
 210 215 220
 Val
 225
 <210>780
 <211>293
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>780
 Met Lys Val Leu Pro Pro Pro Ser Ile Pro Leu Leu Gly Ala His Thr
 1 5 10 15
 Ser Thr Ala Gly Gly Leu Lys Asn Ala Ile Tyr Glu Gly Arg Asp Ile
 20 25 30
 Gly Ala Ser Thr Val Gln Ile Phe Thr Ala Asn Gln Arg Gln Trp Gln
 35 40 45
 Arg Arg Ala Leu Lys Glu Glu Val Ile Glu Asp Phe Lys Ala Ala Leu
 50 55 60
 Lys Glu Thr Asp Leu Ser Tyr Ile Met Ser His Ala Gly Tyr Leu Ile
 65 70 75 80
 Asn Pro Gly Ala Pro Asp Pro Val Ile Leu Glu Lys Ser Arg Ile Gly
 85 90 95
 Ile Tyr Gln Glu Ile Leu Asp Cys Ile Thr Leu Gly Ile Ser Phe Val
 100 105 110
 Asn Phe His Pro Gly Ala Ala Leu Lys Ser Ser Lys Glu Asp Cys Met
 115 120 125
 Asn Lys Ile Val Ser Ser Phe Ser Gln Ser Ala Pro Leu Phe Asp Ser
 130 135 140
 Ser Pro Pro Leu Val Val Leu Leu Glu Thr Thr Ala Gly Gln Gly Thr
 145 150 155 160
 Leu Ile Gly Ser Asn Phe Glu Glu Leu Gly Tyr Leu Val Gln Asn Leu
 165 170 175
 Lys Asn Gln Ile Pro Ile Gly Val Cys Val Asp Thr Cys His Ile Phe
 180 185 190
 Ala Ala Gly Tyr Asp Ile Thr Ser Pro Gln Gly Trp Glu Asp Val Leu
 195 200 205
 Asn Glu Phe Asp Glu Tyr Val Gly Leu Ser Tyr Leu Arg Ala Phe His
 210 215 220
 Leu Asn Asp Ser Met Phe Pro Leu Gly Ala Asn Lys Asp Arg His Ala
 225 230 235 240
 Pro Leu Gly Glu Gly Tyr Ile Gly Lys Glu Ser Phe Lys Phe Leu Met
 245 250 255
 Thr Asp Glu Arg Thr Arg Lys Ile Pro Lys Tyr Leu Glu Thr Pro Gly
 260 265 270
 Gly Pro Glu Asn Trp Gln Lys Glu Ile Gly Glu Leu Leu Lys Phe Ser
 275 280 285
 Lys Asn Arg Asp Ser
 290
 <210>781
 <211>152
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>781
 Met Ala Arg Tyr Cys Gly Pro Lys Asn Arg Val Ala Arg Arg Phe Gly
 1 5 10 15
 Ala Asn Ile Phe Gly Arg Ser Arg Asn Pro Leu Leu Lys Lys Pro His
 20 25 30
 Pro Pro Gly Gln His Gly Met Gln Arg Lys Lys Lys Ser Asp Tyr Gly

35 40 45
 Leu Gln Leu Glu Glu Lys Gln Lys Leu Lys Ala Cys Tyr Gly Met Ile
 50 55 60
 Met Glu Lys Gln Leu Val Lys Ala Phe Lys Glu Val Ile His Lys Gln
 65 70 75 80
 Gly Asn Val Ala Gln Met Phe Leu Glu Arg Phe Glu Cys Arg Leu Asp
 85 90 95
 Asn Met Val Tyr Arg Met Gly Phe Ala Lys Thr Ile Phe Ala Ala Gln
 100 105 110
 Gln Leu Val Ala His Gly His Ile Leu Val Asn Gly Arg Arg Val Asp
 115 120 125
 Arg Arg Ser Phe Phe Leu Arg Pro Gly Met Gln Ile Ser Leu Lys Arg
 130 135 140
 Lys Asn Leu Asn Asp Phe Ser Leu
 145 150
 <210>782
 <211>324
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>782
 Met Glu Lys Lys Tyr Tyr Ala Leu Ala Tyr Tyr Tyr Ile Thr Arg Val
 1 5 10 15
 Asp Asn Pro His Glu Glu Ile Ala Leu His Lys Lys Phe Leu Glu Asp
 20 25 30
 Leu Asp Val Ser Cys Arg Ile Tyr Ile Ser Glu Gln Gly Ile Asn Gly
 35 40 45
 Gln Phe Ser Gly Tyr Glu Pro His Ala Glu Leu Tyr Met Gln Trp Leu
 50 55 60
 Lys Glu Arg Pro Asn Phe Ser Lys Ile Lys Phe Lys Ile His His Ile
 65 70 75 80
 Lys Glu Asn Ile Phe Pro Arg Ile Thr Val Lys Tyr Arg Lys Glu Leu
 85 90 95
 Ala Ala Leu Gly Cys Glu Val Asp Leu Ser Lys Gln Ala Lys His Ile
 100 105 110
 Ser Pro Gln Glu Trp His Glu Lys Leu Gln Glu Asn Arg Cys Leu Ile
 115 120 125
 Leu Asp Val Arg Asn Asn Tyr Glu Trp Lys Ile Gly His Phe Asp Asn
 130 135 140
 Ala Thr Leu Pro Asp Ile Gln Thr Phe Arg Glu Phe Pro Glu Tyr Ala
 145 150 155 160
 Glu Lys Leu Ala Gln Glu Cys Asp Pro Glu Thr Thr Pro Val Met Met
 165 170 175
 Tyr Cys Thr Gly Gly Ile Arg Cys Glu Leu Tyr Ser Pro Val Leu Leu
 180 185 190
 Glu Lys Gly Phe Lys Glu Val Tyr Gln Leu Asp Gly Gly Val Ile Ala
 195 200 205
 Tyr Gly Gln Gln Val Gly Thr Gly Lys Trp Leu Gly Lys Leu Phe Val
 210 215 220
 Phe Asp Asp Arg Leu Ala Ile Pro Ile Asp Glu Ser Asp Pro Asp Val
 225 230 235 240
 Ala Pro Ile Ala Glu Cys Cys His Cys Gln Thr Pro Ser Asp Ala Tyr
 245 250 255
 Tyr Asn Cys Ala Asn Thr Asp Cys Asn Ala Leu Phe Leu Cys Cys Asp
 260 265 270
 Glu Cys Ile His Gln His Gln Gly Cys Cys Gly Glu Glu Cys Ser Gln
 275 280 285
 Ser Pro Arg Val Arg Lys Phe Asp Ser Ser Arg Gly Asn Lys Pro Phe
 290 295 300
 Arg Arg Ala His Leu Cys Glu Ile Ser Glu Asn Ser Glu Ser Ala Ser
 305 310 315 320
 Cys Cys Leu Ile

<212>PRT

<213>Chlamydia pneumoniae

<400>783

Met	Leu	Met	Met	Leu	Met	Met	Ile	Ile	Gly	Ile	Thr	Gly	Gly	Ser	Gly
1				5					10					15	
Ala	Gly	Lys	Thr	Thr	Leu	Thr	Gln	Asn	Ile	Lys	Glu	Ile	Phe	Gly	Glu
			20					25					30		
Asp	Val	Ser	Val	Ile	Cys	Gln	Asp	Asn	Tyr	Tyr	Lys	Asp	Arg	Ser	His
		35					40					45			
Tyr	Thr	Pro	Glu	Glu	Arg	Ala	Asn	Leu	Ile	Trp	Asp	His	Pro	Asp	Ala
	50					55				60					
Phe	Asp	Asn	Asp	Leu	Leu	Ile	Ser	Asp	Ile	Lys	Arg	Leu	Lys	Asn	Asn
65				70					75					80	
Glu	Ile	Val	Gln	Ala	Pro	Val	Phe	Asp	Phe	Val	Leu	Gly	Asn	Arg	Ser
			85						90					95	
Lys	Thr	Glu	Ile	Glu	Thr	Ile	Tyr	Pro	Ser	Lys	Val	Ile	Leu	Val	Glu
		100					105					110			
Gly	Ile	Leu	Val	Phe	Glu	Asn	Gln	Glu	Leu	Arg	Asp	Leu	Met	Asp	Ile
	115					120					125				
Arg	Ile	Phe	Val	Asp	Thr	Asp	Ala	Asp	Glu	Arg	Ile	Leu	Arg	Arg	Met
130					135					140					
Val	Arg	Asp	Val	Gln	Glu	Gln	Gly	Asp	Ser	Val	Asp	Cys	Ile	Met	Ser
145				150					155					160	
Arg	Tyr	Leu	Ser	Met	Val	Lys	Pro	Met	His	Glu	Lys	Phe	Ile	Glu	Pro
			165					170					175		
Thr	Arg	Lys	Tyr	Ala	Asp	Ile	Ile	Val	His	Gly	Asn	Tyr	Arg	Gln	Asn
		180					185						190		
Val	Val	Thr	Asn	Ile	Leu	Ser	Gln	Lys	Ile	Lys	Asn	His	Leu	Glu	Asn
	195					200					205				
Ala	Leu	Glu	Ser	Asp	Glu	Thr	Tyr	Tyr	Met	Val	Asn	Ser	Lys		
210						215					220				

<210>784

<211>503

<212>PRT

<213>Chlamydia pneumoniae

<400>784

Leu	Arg	Leu	Ala	Gly	Ser	Leu	Ala	Asp	Arg	Phe	Gln	Lys	Arg	Asn	Ile
1				5					10					15	
Ile	Leu	Ala	Thr	Arg	Phe	Ile	Glu	Ile	Leu	Cys	Thr	Ile	Leu	Gly	Thr
		20					25					30			
Tyr	Phe	Phe	Phe	Ile	Gln	Ser	Val	Val	Gly	Gly	Tyr	Val	Val	Leu	Ile
	35					40					45				
Leu	Met	Ala	Cys	His	Thr	Thr	Ile	Phe	Gly	Pro	Ala	Lys	Leu	Gly	Ile
50						55				60					
Leu	Pro	Glu	Met	Leu	Pro	Ser	Glu	Gln	Leu	Ser	Gln	Ala	Asn	Gly	Ile
65				70					75					80	
Met	Thr	Ala	Ala	Thr	Tyr	Thr	Gly	Ser	Ile	Leu	Gly	Ser	Cys	Leu	Ala
			85					90					95		
Pro	Leu	Leu	Val	Asp	Val	Thr	His	Arg	Leu	Gly	Val	Asn	Ser	Tyr	Val
		100					105					110			
Trp	Pro	Thr	Leu	Met	Cys	Val	Ile	Val	Ser	Ile	Ile	Ser	Thr	Leu	Ile
	115					120						125			
Ser	Phe	Cys	Ile	Arg	Pro	Ser	Asn	Val	Lys	Asn	Val	Lys	Gln	Lys	Ile
130					135					140					
Thr	Leu	Val	Ser	Phe	Lys	Asp	Leu	Trp	Lys	Val	Leu	Lys	Asp	Thr	Arg
145				150					155					160	
Met	Ile	His	Tyr	Leu	Thr	Val	Ser	Ile	Phe	Leu	Gly	Ser	Phe	Phe	Leu
			165					170					175		
Leu	Ile	Gly	Ala	Tyr	Thr	Gln	Leu	Glu	Ile	Ile	Pro	Phe	Val	Glu	Phe
	180					185					190				
Ile	Leu	Lys	Tyr	Pro	Lys	His	Tyr	Gly	Ala	Tyr	Leu	Phe	Pro	Ile	Val
195					200					205					
Ala	Leu	Gly	Val	Gly	Thr	Gly	Ser	Tyr	Ile	Thr	Gly	Lys	Ile	Ser	Gly
210					215						220				

Lys Asp Ile Lys Ile Gly Tyr Val Pro Leu Ala Ala Ile Gly Leu Ala
 225 230 235 240
 Leu Val Phe Met Gly Leu Tyr Ala Phe Ala Cys Ser Ile Leu Phe Val
 245 250 255
 Leu Phe Phe Leu Leu Ala Leu Gly Phe Leu Gly Gly Val Tyr Gln Val
 260 265 270
 Pro Leu His Ala Tyr Val Gln Tyr Ala Ser Pro Glu His Lys Arg Gly
 275 280 285
 Gln Ile Leu Ala Ala Asn Asn Phe Leu Asp Phe Phe Gly Val Leu Val
 290 295 300
 Ala Ala Gly Val Ile Arg Val Leu Gly Ser Asn Leu Gly Leu Ser Pro
 305 310 315 320
 Glu Thr Ser Phe Phe Tyr Ile Gly Trp Phe Val Leu Ala Val Ser Ile
 325 330 335
 Trp Thr Leu Trp Ile Trp Arg Glu His Val Tyr Arg Leu Leu Gly
 340 345 350
 Ile Ile Leu Arg Arg Gln Leu Gly Tyr Tyr Leu Lys Ile His Gln Ser
 355 360 365
 Ser Ser Pro Lys Cys Tyr Phe Val Ala Val Gln Ser Tyr Arg Glu Ile
 370 375 380
 Arg Arg Val Leu Ala Ala Leu Thr Lys Thr Val Arg Ser Arg Val Ile
 385 390 395 400
 Ile Leu Asp Gln Lys Leu Val Pro Gly Trp Arg Ala Trp Leu Leu Ser
 405 410 415
 Trp Cys Val Pro Thr Val Val Ser Ser Val Arg Asp Asn Asp Ser Glu
 420 425 430
 Ala Gln Asp Ala Trp Ala Val Leu Gln Ala Asn His Leu Lys Thr Ser
 435 440 445
 Leu Lys Lys Phe Pro Asp Val Ser Val Val Cys Leu Gly Leu Pro Lys
 450 455 460
 Asn Val Glu Arg Phe Thr Ser Ile Leu Gln Glu Gln Gly Ile Asp Leu
 465 470 475 480
 His Pro Ile Gln Leu Val Gln Lys Glu Gly Lys Lys Arg Val Ile Tyr
 485 490 495
 Thr Leu Val Phe Pro His Ala
 500

<210>785

<211>644

<212>PRT

<213>Chlamydia pneumoniae

<400>785

Ile His Gly Leu Lys Ile Ser Glu Ile Lys Ile Leu Leu Leu Ser Ser
 1 5 10 15
 Ile Leu Gln Thr Gln Gly Asp Leu His Tyr Ile Leu Gln Leu Leu Thr
 20 25 30
 His Pro Gln Leu Gln Gln Pro Ile Asp Gln Asn Lys Val Pro Tyr Leu
 35 40 45
 Ile Lys Lys Leu Ser Ser Glu Trp Gly Lys Ile Ser Ser Lys Glu Arg
 50 55 60
 Ala Ser Gly Gln Gln Met Lys Ala Leu Gly Asp Leu Ile Leu Glu Glu
 65 70 75 80
 Tyr Pro Phe His Gln Glu Gly Gly Arg Val Ser Gln Val Glu Val Trp
 85 90 95
 Glu Thr Thr Val Pro Leu Ile Tyr Phe Ile Gln Glu Arg Ile Asn Leu
 100 105 110
 Tyr Leu Ser Ser Ser Gln His Ser Tyr Glu Asp Leu Phe Gln Asn Val
 115 120 125
 Phe Ser Cys Leu Glu Lys Ile Phe Val Leu Ser Pro Glu Glu Thr Ser
 130 135 140
 Phe Ile Thr Thr Leu Arg Asn Ser Leu Phe Pro Thr Phe Ala Thr Ser
 145 150 155 160
 Ser Cys Ser Leu Leu Phe Phe Thr Asp Phe Cys Leu Asp Phe Leu Leu
 165 170 175
 His Phe His Lys Pro Ser Pro Leu Tyr Asp Lys Pro Gly Pro Tyr Ile

<210>786
<211>439
<212>PRT
<213>Chlamydia pneumoniae
<400>786

Pro Val Lys Pro Phe Asn Ile Phe Asp Ser Asn Ser Ser Ile Gln Gly
 1 5 10 15
 Lys Phe Phe Leu Glu Ala Ser Ala Gly Thr Gly Lys Thr Phe Thr Ile
 20 25 30
 Glu Gln Ile Val Leu Arg Ala Leu Ile Glu Gly Ser Leu Thr His Val
 35 40 45
 Glu His Ala Leu Ala Ile Thr Phe Thr Asn Ala Ser Thr Asn Glu Leu
 50 55 60
 Lys Val Arg Ile Lys Asp Asn Leu Ala Gln Thr Leu Arg Glu Leu Lys
 65 70 75 80
 Ala Val Leu Asn Ser Gln Pro Ala Ser Leu Pro Thr Tyr Leu Asp Ile
 85 90 95
 Asn Cys Asn Val Lys Gln Ile Tyr Met Gln Val Arg Asn Ala Leu Ala
 100 105 110
 Thr Leu Asp Gln Met Ser Leu Phe Thr Ile His Gly Phe Cys Asn Phe
 115 120 125
 Val Leu Glu Gln Tyr Phe Pro Lys Thr Arg Leu Ile His Lys Asn Pro
 130 135 140
 Ala Leu Thr His Ser Gln Leu Val Leu His His Ile Thr Asn Tyr Leu
 145 150 155 160
 Lys Gln Asp Leu Trp Lys Asn Val Leu Phe Gln Glu Gln Phe His Leu
 165 170 175
 Leu Ala Val Arg Tyr Asn Val Thr Ser Lys His Thr Ser Ser Leu Val
 180 185 190
 Asp Lys Leu Leu Ala Ser Tyr Thr Gln Pro Ile Ser Ser Tyr Phe Ser
 195 200 205
 Ser Arg Val Glu Arg Leu Glu Gln Ile Ser Leu Trp His Gln Gln Ile
 210 215 220
 Tyr Asn Ser Leu Leu Glu Ile Pro Lys Gln Val Phe Leu Asp Gln Leu
 225 230 235 240
 Thr Ala His Ile Ser Gly Phe Lys Lys Gln Pro Phe Ser Ile Leu Asp
 245 250 255
 Asp Leu His His Phe Val Asp Leu Leu Tyr Thr Ser Glu Thr His Ser
 260 265 270
 Ser Leu Phe Ser Phe Phe Lys Ile Ala Glu Thr Phe Asn Phe Lys His
 275 280 285
 Arg Leu Ala Arg Tyr Lys Pro Cys Ala Ala Phe Thr Val Leu Glu Asn
 290 295 300
 Met Ser Trp Val Glu Arg Thr Leu Glu Phe Cys Asn Leu Asp Arg Ile
 305 310 315 320
 Phe Asn Thr Leu Leu Val Asp Leu Gln Glu Tyr Leu Lys Gln Asn Tyr
 325 330 335
 Thr Pro Trp Leu Ser Pro Asp Glu Ser Val Phe Ala Leu Glu Lys Leu
 340 345 350
 Leu Ser Ser Ser Glu Ala Gln Pro Val Val Gln Ala Leu Arg Glu Gln
 355 360 365
 Tyr Gln Leu Val Leu Ile Asp Glu Phe Gln Asp Thr Asp Lys Gln Gln
 370 375 380
 Trp Ser Ile Phe Ser Asn Leu Phe Ile Ser Pro Lys Phe Thr Gly Ser
 385 390 395 400
 Leu Phe Leu Ile Gly Asp Pro Lys Gln Ser Ile Tyr Glu Trp Arg Ser
 405 410 415
 Ala Asp Leu Pro Thr Tyr Leu Thr Ala Lys Ser Ser Phe Ser Glu Asp
 420 425 430
 Lys Gln Leu Gln Leu Val Asn
 435

<210>787

<211>489

<212>PRT

<213>Chlamydia pneumoniae

<400>787

Leu Met Asn Phe Lys Ile Gln Thr Ser Asn Asn Gly Ala Ser Phe Arg
 1 5 10 15
 Ile Ser Leu Phe Leu Arg Asn Leu Gln Asp Arg Tyr Phe Leu Ser Glu

Gly Pro Trp Thr Cys Tyr His Ser Val Glu Ser Ala Thr Phe Arg Asp
 1 5 10 15
 Val Arg Ser Lys Ser Asp Thr Pro Glu Asn Tyr Phe Phe Leu Leu Ile
 20 25 30
 Tyr Lys Ile Pro Ile Gly His Ser Gln Arg Leu Ala Ile Asp Pro Ile
 35 40 45
 Phe Gln Leu Pro Ile Ser Lys Gln Gln Leu Pro Leu Gly Glu Lys Thr
 50 55 60
 Gly Ile Leu Ile His Lys Ile Leu Glu Ser Ile Gln Phe Ser Leu Leu
 65 70 75 80
 Gln Asp Thr Glu Tyr Leu Met Ser Thr Ile Met Arg Phe Ile Lys His
 85 90 95
 Thr His Leu Glu Gly Phe Glu Glu Thr Ile Leu Lys Leu Leu Ser Lys
 100 105 110
 Thr Phe Phe Ser Pro Leu Thr Phe Ser Ser Gln Thr Phe Ser Leu Ser
 115 120 125
 Gln Val Leu Pro Asn Lys Ile Phe Arg Glu Thr Ser Phe Leu Phe Leu
 130 135 140
 Glu Asn Gln Glu Leu Trp Gln Gly Val Ile Asp Leu Phe Phe Glu His
 145 150 155 160
 Glu Gly Lys Tyr Tyr Ile Ile Asp Trp Lys Thr Ser Phe Leu Gly Glu
 165 170 175
 Thr Asn Ser Asp Tyr Ser Lys Ser Asn Leu Ser Ile Tyr Ile Lys Gln
 180 185 190
 Glu Lys Leu Asp Tyr Gln Gly Arg Ile Tyr Val Lys Ala Val Arg Lys
 195 200 205
 Phe Leu Asn Gln Phe Glu Ile Asp Asp Asp Val Glu Leu Gly Val Ile
 210 215 220
 Phe Ile Arg Gly Ile Asp Thr Gln Gly Asn Gly Phe Phe Ala Leu Asn
 225 230 235 240
 Ser Ser Glu Asp Ile Pro Asn Phe Asn Pro Lys Ala Ile Gln Lys Cys
 245 250 255
 Gln Ala Tyr His
 260

<210>789

<211>344

<212>PRT

<213>Chlamydia pneumoniae

<400>789

Cys Lys Val Leu Phe Lys Leu Met Ser Tyr Ser Leu Arg Asn Lys Lys
 1 5 10 15
 Thr Lys Ile Cys Val Tyr Ile Ile Ile Ala Leu Gly Ile Leu Ser Phe
 20 25 30
 Arg Ser Ile Pro Gln Glu Val Tyr Asp Lys Ile Arg Ser Ser Phe Val
 35 40 45
 Ser Leu His Val Lys Phe Phe Pro Lys Ile Lys Gln Ala Pro Ser Ser
 50 55 60
 His Leu Ala Asn Leu Glu Leu Glu Asn Leu Val Leu Lys Glu Arg Val
 65 70 75 80
 Ala Ser Leu Glu Glu Lys Leu Lys Leu Tyr Glu Val Ser Asn His Thr
 85 90 95
 Pro Pro Leu Phe Pro Glu Ile Leu Thr Pro Tyr Phe His Lys Leu Val
 100 105 110
 Glu Gly Lys Val Val Tyr Arg Asp Tyr Thr His Trp Ser Ser Ser Cys
 115 120 125
 Trp Val Asn Val Gly Lys Thr His Gly Ile Lys Lys Asn Ser Pro Val
 130 135 140
 Leu Ser Gly Asn Val Leu Val Gly Leu Val Asp Tyr Val Gly Glu His
 145 150 155 160
 Gln Ser Arg Ile Arg Leu Ile Thr Asp Val Gly Met Lys Pro Ser Val
 165 170 175
 Val Ala Met Arg Gly Asp Ile Gln Ser Trp Trp Ile Lys His Ser Leu
 180 185 190
 Arg Glu Leu Ile Arg Gln Val Glu Gln Ile Ser His Ala Tyr Ile Leu

195	200	205
Glu Lys Asp Lys Tyr Glu Lys Ile Ser Gln Leu Gln Glu Leu Asp Ser		
210	215	220
Leu Ile Gln Gly Glu Gly Glu Asn Gln Ala Leu Leu Arg Gly Ile Leu		
235	230	235
Ser Gly Val Gly Gly Ala Leu Trp Lys Glu Gly Ser Leu Cys Leu Glu		
	245	250
Gly Glu Gly Phe Tyr Phe Ser Glu Gly Lys Thr Leu Leu Pro Gly Asp		
	260	265
Ile Leu Val Thr Thr Gly Leu Asp Gly Val Phe Pro Pro Gly Leu Leu		
	275	280
Val Ala Arg Val Thr Lys Val Lys Ala Pro Arg Asp Gly Ala Cys Thr		
	290	295
Phe Lys Ile Glu Ala Gln Ser Leu Glu Glu Lys Leu Met Glu Leu Asp		
305	310	315
Gln Leu Phe Ile Leu Pro Pro Leu Glu Phe Asn Pro Asn Asp Arg Pro		
	325	330
Asp Ile Phe Gly Leu Leu Trp Asp		
	340	

<210>790

<211>395

<212>PRT

<213>Chlamydia pneumoniae

<400>790

Met Ser Phe Phe Asn His Ile Pro Thr Phe Ser Pro Asp Ala Ile Leu		
1	5	10
Gly Leu Gln Asn Val Phe Phe Ala Asp Lys Arg Pro Glu Lys Val Asn		
	20	25
Leu Val Ile Gly Val Tyr Glu His Pro Gln Lys Arg Tyr Gly Gly Leu		
	35	40
Ser Cys Ile Arg Lys Ala Gln Thr Val Ile Leu Glu Glu Glu Gln Asn		
	50	55
Lys Ser Tyr Leu Pro Ile Ser Gly Leu Gln Ile Phe Leu Asp Glu Met		
	65	70
Arg Glu Leu Val Phe Gly Ala Val Asp Pro Ser Ala Ile Val Gly Phe		
	85	90
Gln Ser Leu Gly Gly Thr Gly Ala Leu His Leu Gly Ala Arg Leu Leu		
	100	105
Ser Val Ala Lys Gly Ser Gly Lys Val Tyr Val Pro Glu Gln Thr Trp		
	115	120
Ser Asn His Ile Arg Ile Phe Ser Gln Glu Gly Leu Glu Val Ile Arg		
	130	135
Tyr Pro Tyr Tyr Ser Lys Glu Gln Lys Gln Leu Leu Phe Glu Pro Leu		
	145	150
Ile Ala Phe Leu Lys Glu Val Glu Lys Asn Ser Val Ile Leu Leu His		
	165	170
Gly Cys Cys His Asn Pro Thr Gly Val Asp Phe Thr Glu Asp Met Trp		
	180	185
Lys Glu Leu Ala Ile Leu Met Lys Glu Arg Glu Leu Ile Pro Phe Phe		
	195	200
Asp Thr Ala Tyr Gln Gly Phe Ala His Gly Ile Glu Leu Asp Arg Lys		
	210	215
Pro Ile Glu Ile Phe Ile Ser Glu Gly Asn Thr Val Leu Val Ala Ala		
	225	230
Ser Ser Ser Lys Asn Phe Ala Leu Tyr Gly Glu Arg Val Gly Tyr Phe		
	245	250
Ala Val His Ser Thr Phe Thr Asp Glu Leu Val Lys Ile His Ser Phe		
	260	265
Leu Glu Glu Lys Ile Arg Gly Glu Tyr Ser Ser Pro Gln Arg Trp Gly		
	275	280
Val Glu Ile Val Ser Thr Ile Leu Ser Asn Pro Tyr Leu Lys Glu Glu		
	290	295
Trp Gln Ser Glu Leu Asn Phe Ile Arg Glu Ser Leu Gly Lys Met Arg		
	305	310
		315
		320

Thr Arg Phe Val Gln Ala Leu Arg Lys Val Ala Gly His Thr Phe Asp
 325 330 335
 Phe Leu Leu Ser Gln His Gly Phe Phe Ala Tyr Pro Gly Phe Ser Asp
 340 345 350
 Lys Gln Val Leu Phe Leu Arg Glu Gln His Ala Val Tyr Thr Thr Ala
 355 360 365
 Gly Gly Arg Met Asn Leu Asn Gly Ile Thr Glu Lys Asn Ile Asp His
 370 375 380
 Val Val Gln Ser Phe Ile Gln Ala Tyr Glu Leu
 385 390 395
 <210>791
 <211>733
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>791
 Glu Tyr Ile Phe Arg Leu Lys Thr Gly Asp Ile Val Asp Tyr Leu Glu
 1 5 10 15
 Lys Leu Gln Val Leu Ile Glu Glu Gly Gln Ser Ala Asn Phe Leu Ser
 20 25 30
 Leu Trp Glu Tyr Cys Phe Asn Asp Val Val Arg Gly Arg Glu Leu
 35 40 45
 Val Glu Ile Leu Glu Lys Val Lys Ser Ser Ser Leu Ala Ser Leu Phe
 50 55 60
 Gly Lys Ile Val Asp Thr Val Val Pro Leu Trp Glu Lys Ile Pro Glu
 65 70 75 80
 Gly Lys Asp Lys Asp Arg Val Leu Gln Leu Ile Leu Asp Leu Gln Thr
 85 90 95
 Ser Asn Ser Gln Met Phe Phe Asp Ile Ala Thr Glu Tyr Val Asn Lys
 100 105 110
 Lys Tyr Ser Gly Glu Glu Asn Phe Asn Glu Ala Leu Arg Val Val Gly
 115 120 125
 Leu Arg Asp Gly Arg Asp Phe Gln Phe Ser Leu Ser Arg Phe Asp Phe
 130 135 140
 Leu Met His Met His Lys Gly Asn Phe Val Phe His Gln Gly Gly Trp
 145 150 155 160
 Gly Val Gly Glu Val Met Gly Val Ser Phe Leu Gln Gln Lys Val Leu
 165 170 175
 Ile Glu Phe Glu Gly Ile Met Ser Ala Lys Asp Ile Ser Phe Glu Thr
 180 185 190
 Ala Phe Lys Ser Leu Thr Pro Leu Ser Gly Asp His Phe Leu Ser Arg
 195 200 205
 Arg Phe Gly Asp Pro Asp Gly Phe Glu Ala Phe Ala Lys Glu Asn Pro
 210 215 220
 Ile Glu Val Val Glu Ile Leu Leu Arg Asp Leu Gly Pro Lys Thr Ala
 225 230 235 240
 Lys Glu Ile Lys Asp Glu Leu Val Asp Leu Val Ile Pro Glu Ala Asp
 245 250 255
 Trp Asn Arg Trp Trp Gln Ser Ala Lys Thr Lys Ile Lys Lys Gly Thr
 260 265 270
 Arg Ile Ile Ser Pro Asp Asn Pro Lys Glu Pro Tyr Val Leu Ser Asp
 275 280 285
 Ala Gly Cys Ser His Met Gly Gln Leu Glu Arg Lys Leu Gly Leu Ser
 290 295 300
 Leu Asn Ser Ala Glu Lys Ile Ser Leu Ile Tyr His Phe Ile Arg Asp
 305 310 315 320
 Leu His Ser Glu Leu Lys Asn Ile Glu Ile Arg Lys Ser Leu Val Lys
 325 330 335
 Ala Leu Gln Asp Leu Asp Val Glu Glu Gly Asn Lys Ser Leu Ile Leu
 340 345 350
 Gln Arg Glu Leu Leu Leu Ser Glu Tyr Leu Gly Ile Lys Asp Ala Ser
 355 360 365
 Ile Asp Lys Glu Tyr Ile Thr Ser Leu Ser Glu Asp Asp Thr Ser Arg
 370 375 380
 Leu Leu Glu Asn Met Pro Ile Val Ala Leu Gln Lys Ser Phe Leu Ser

385	390	395	400
Leu Val Arg Lys Tyr Ser Ser Phe Trp Gln Gln Val Phe Met Gln Ile			
405	410	415	
Leu Leu Tyr Thr Thr Ser Pro Thr Met Arg Asp Phe Val Tyr Lys Thr			
420	425	430	
Ile Lys Asn Asp Pro Ser Ser Val Glu Val Leu Lys Lys Arg Leu Leu			
435	440	445	
Asp Ser Ala His Gln Pro Met Met Phe Pro Glu Leu Phe Val Trp Phe			
450	455	460	
Phe Leu Lys Leu Gly Asn His Glu Asp Gly Leu Phe Asp Pro Glu Asp			
465	470	475	480
Lys Glu Val Leu Arg Leu Phe Leu Glu Ser Ala Leu Asn Phe Met Tyr			
485	490	495	
Gln Val Ala Ser Thr Pro His Lys Glu Leu Gly Lys Lys Leu His His			
500	505	510	
Tyr Leu Val Gly Gln Arg Tyr Leu Ala Val Arg Gln Met Ile Glu Gly			
515	520	525	
Ala Ser Leu Pro Phe Leu Lys Glu Leu Leu Leu Leu Ser Thr Lys Cys			
530	535	540	
Pro Gln Phe Ser Ser Ser Asp Leu Asn Val Leu Gln Ser Leu Ala Glu			
545	550	555	560
Val Val Gln Pro Thr Leu Lys Lys His Lys Ser Asn Val Glu Glu Glu			
565	570	575	
Asn Val Leu Trp Ser Thr Ser Glu Ser Phe Ser Arg Met Lys Ala Lys			
580	585	590	
Leu Gln Ser Leu Val Gly Lys Glu Met Val Asp Asn Ala Lys Glu Ile			
595	600	605	
Glu Asp Ala Arg Ser Leu Gly Asp Leu Arg Glu Asn Ser Glu Tyr Lys			
610	615	620	
Phe Ala Leu Glu Lys Arg Ala Arg Leu Gln Glu Glu Ile Arg Val Leu			
625	630	635	640
Ser Glu Glu Ile Asn Arg Ala Arg Ile Leu Thr Lys Asp Leu Val Phe			
645	650	655	
Thr Asp Lys Val Gly Val Gly Cys Lys Val Thr Leu Lys Gly Asp Ala			
660	665	670	
Gly Glu Val Val Glu Tyr Thr Ile Leu Gly Pro Trp Asp Ala Asp Pro			
675	680	685	
Asp Ser Cys Ile Leu Ser Leu Gln Ser Lys Leu Ala Gln Asn Met Leu			
690	695	700	
Gly Lys Lys Leu Asn Asp Val Val Ile Leu Gln Gly Lys Glu Tyr Lys			
705	710	715	720
Ile Ser Arg Ile Gln Ser Ile Trp Glu Glu His Gly Ala			
725	730		

<210>792

<211>149

<212>PRT

<213>Chlamydia pneumoniae

<400>792

Thr Lys Met Met Val Ile Val Met Asn Ser Lys Ser Ala Gln Lys Ile			
1	5	10	15
Ile Asp Ser Ile Lys Gln Ile Leu Thr Ile Tyr Asn Ile Asp Phe Asp			
20	25	30	
Pro Ser Phe Gly Ser Ser Leu Ser Ser Asp Ser Asp Ala Asp Tyr Glu			
35	40	45	
Tyr Leu Ile Thr Lys Thr Gln Glu Lys Ile Gln Glu Leu Asp Lys Arg			
50	55	60	
Ala Gln Glu Ile Leu Thr Gln Thr Gly Met Ser Lys Glu Gln Met Glu			
65	70	75	80
Val Phe Ala Asn Asn Pro Asp Asn Phe Ser Pro Glu Glu Trp Leu Ala			
85	90	95	
Leu Glu Lys Val Arg Ser Ser Cys Asp Glu Tyr Arg Lys Glu Thr Glu			
100	105	110	
Asn Leu Ile Asn Glu Ile Thr Leu Asp Leu His Pro Thr Lys Glu Ser			
115	120	125	

Lys Arg Pro Lys Gln Lys Leu Ser Ser Thr Lys Lys Asn Lys Lys Lys
 130 135 140
 Asn Trp Ile Pro Leu
 145
 <210>793
 <211>469
 <212>PRT
 <212>Chlamydia pneumoniae
 <400>793
 Ile Phe Met Lys Ile Thr Val Asn Arg Gly Leu Asp Leu Ser Leu Gln
 1 5 10 15
 Gly Ser Pro Lys Glu Ser Gly Phe Tyr Asn Lys Ile Asp Pro Glu Phe
 20 25 30
 Val Ser Ile Asp Leu Arg Pro Phe Gln Pro Leu Ser Leu Lys Leu Lys
 35 40 45
 Val Glu Gln Gly Asp Ala Val Cys Ser Gly Ala Pro Ile Ala Glu Tyr
 50 55 60
 Lys His Phe Pro Asn Thr Tyr Ile Thr Ser His Val Ser Gly Val Val
 65 70 75 80
 Thr Ala Ile Arg Arg Gly Asn Lys Arg Ser Leu Leu Asp Val Ile Ile
 85 90 95
 Lys Lys Thr Pro Gly Pro Thr Ser Thr Glu Tyr Thr Tyr Asp Leu Gln
 100 105 110
 Thr Leu Ser Arg Ser Asp Leu Ser Glu Ile Phe Lys Glu Asn Gly Leu
 115 120 125
 Phe Ala Leu Ile Lys Gln Arg Pro Phe Asp Ile Pro Ala Ile Pro Thr
 130 135 140
 Gln Thr Pro Arg Asp Val Phe Ile Asn Leu Ala Asp Asn Arg Pro Phe
 145 150 155 160
 Thr Pro Ser Pro Glu Lys His Leu Ala Leu Phe Ser Ser Arg Glu Glu
 165 170 175
 Gly Phe Tyr Val Phe Val Val Gly Val Arg Ala Ile Ala Lys Leu Phe
 180 185 190
 Gly Leu Arg Pro His Ile Val Phe Arg Asp Arg Leu Thr Leu Pro Thr
 195 200 205
 Gln Glu Leu Lys Thr Ile Ala His Leu His Thr Val Ser Gly Pro Phe
 210 215 220
 Pro Ser Gly Ser Pro Ser Ile His Ile His Ser Val Ala Pro Ile Thr
 225 230 235 240
 Asn Glu Lys Glu Val Val Phe Thr Leu Ser Phe Gln Asp Val Leu Thr
 245 250 255
 Ile Gly His Leu Phe Leu Lys Gly Arg Ile Leu His Glu Gln Val Thr
 260 265 270
 Ala Leu Ala Gly Thr Ala Leu Lys Ser Ser Leu Arg Arg Tyr Val Ile
 275 280 285
 Thr Thr Lys Gly Ala Ser Phe Ser Ser Leu Ile Asn Leu Asn Asp Ile
 290 295 300
 Ser Asp Asn Asp Thr Leu Ile Ser Gly Asp Pro Leu Thr Gly Arg Leu
 305 310 315 320
 Cys Lys Lys Glu Glu Glu Pro Phe Leu Gly Phe Arg Asp His Ser Ile
 325 330 335
 Ser Val Leu His Asn Pro Thr Lys Arg Glu Leu Phe Ser Phe Leu Arg
 340 345 350
 Ile Gly Phe Asn Lys Pro Thr Phe Thr Lys Thr Tyr Leu Ser Gly Phe
 355 360 365
 Phe Lys Lys Lys Arg Thr Tyr Thr Asn Pro Asp Thr Asn Leu His Gly
 370 375 380
 Glu Thr Arg Pro Ile Ile Asp Thr Asp Ile Tyr Asp Lys Val Met Pro
 385 390 395 400
 Met Arg Ile Pro Val Val Pro Leu Ile Lys Ala Val Ile Thr Lys Asn
 405 410 415
 Phe Asp Leu Ala Asn Glu Leu Gly Phe Leu Glu Val Cys Gly Glu Asp
 420 425 430
 Phe Ala Leu Pro Thr Leu Ile Asp Pro Ser Lys Thr Glu Met Leu Thr

435 440 445
 Ile Val Lys Glu Ser Leu Ile Glu Tyr Ala Lys Glu Ser Gly Ile Leu
 450 455 460
 Thr Pro His Gln Asp
 465
 <210>794
 <211>313
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>794
 Glu Met Ser Ser Leu Thr Leu Ser Arg Arg Pro Arg Arg Asn Arg Lys
 1 5 10 15
 Thr Ala Ala Ile Arg Asp Leu Leu Ala Glu Thr His Leu Ser Pro Lys
 20 25 30
 Asp Leu Ile Ala Pro Phe Phe Val Lys Tyr Gly Asn Asn Ile Lys Glu
 35 40 45
 Glu Ile Pro Ser Leu Pro Gly Val Phe Arg Tyr Ser Leu Asp Leu Leu
 50 55 60
 Leu Lys Glu Ile Glu Arg Leu Cys Thr Tyr Gly Leu Arg Ala Val Met
 65 70 75 80
 Leu Phe Pro Ile Ile Pro Asp Asp Leu Lys Asp Ala Tyr Gly Ser Tyr
 85 90 95
 Ser Ser Asn Pro Lys Asn Ile Leu Cys His Ser Ile His Glu Ile Lys
 100 105 110
 Asn Ala Phe Pro His Leu Cys Leu Ile Ser Asp Ile Ala Leu Asp Pro
 115 120 125
 Tyr Thr Thr His Gly His Asp Gly Ile Phe Leu Asn Gly Glu Val Leu
 130 135 140
 Asn Asp Glu Ser Val Arg Ile Phe Gly Asn Ile Ala Thr Leu His Ala
 145 150 155 160
 Glu Met Gly Ala Asp Ile Val Ala Pro Ser Asp Met Met Asp Gly Arg
 165 170 175
 Ile Gly Tyr Ile Arg Ser Lys Leu Asp Gln Ser Gly Tyr Ser Lys Thr
 180 185 190
 Ser Ile Met Ser Tyr Ser Val Lys Tyr Ala Ser Cys Leu Tyr Ser Pro
 195 200 205
 Phe Arg Asp Ala Leu Ser Ser His Val Thr Ser Gly Asp Lys Lys Gln
 210 215 220
 Tyr Gln Met Asn Pro Lys Asn Val Leu Glu Ala Leu Leu Glu Ser Ser
 225 230 235 240
 Leu Asp Glu Glu Glu Gly Ala Asp Ile Leu Met Val Lys Pro Ala Gly
 245 250 255
 Leu Tyr Leu Asp Val Ile Tyr Arg Ile Arg Gln Asn Thr Cys Leu Pro
 260 265 270
 Leu Ala Ala Tyr Gln Val Ser Gly Glu Tyr Ala Met Ile Leu Ser Ala
 275 280 285
 Phe Gln Gln Gly Trp Leu Asp Lys Glu Thr Leu Phe His Glu Ser Leu
 290 295 300
 Ile Ala Ile Lys Arg Leu Ala Gln Ile
 305 310
 <210>795
 <211>128
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>795
 Phe Ser Gly Arg Cys Pro Phe Ser Phe Glu Val Phe Met Leu Gly Lys
 1 5 10 15
 Glu Glu Glu Phe Thr Cys Lys Gln Lys Gln Cys Leu Ser His Phe Val
 20 25 30
 Thr Asn Leu Thr Ser Asp Val Phe Ala Leu Lys Asn Leu Pro Glu Val
 35 40 45
 Val Lys Gly Ala Leu Phe Ser Lys Tyr Ser Arg Ser Val Leu Gly Leu
 50 55 60
 Arg Ala Leu Leu Leu Lys Glu Phe Leu Ser Asn Glu Glu Asp Gly Asp

65 70 75 80
 Val Cys Asp Glu Ala Tyr Asp Phe Glu Thr Asp Val Gln Lys Ala Ala
 85 90 95
 Asp Phe Tyr Gln Arg Val Leu Asp Asn Phe Gly Asp Asp Ser Val Gly
 100 105 110
 Glu Leu Gly Gly Ala Pro Gly Tyr Gly Lys Cys Leu Tyr Phe Gly Cys
 115 120 125
 <210>796
 <211>431
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>796
 Glu Ser Leu Ala Glu His Leu Ala Met Glu Asn Val Ser Ile Leu Ala
 1 5 10 15
 Ala Lys Val Leu Glu Asp Ala Arg Ile Gly Gly Ser Pro Leu Glu Lys
 20 25 30
 Ser Thr Arg Tyr Val Tyr Phe Asp Gln Lys Val Arg Gly Glu Tyr Leu
 35 40 45
 Tyr Tyr Arg Asp Pro Ile Leu Met Thr Ser Ala Phe Lys Asp Met Phe
 50 55 60
 Leu Gly Thr Cys Asp Phe Leu Phe Asp Thr Tyr Ser Ala Leu Ile Pro
 65 70 75 80
 Gln Val Arg Ala Tyr Phe Glu Lys Leu Tyr Pro Lys Asp Ser Lys Thr
 85 90 95
 Pro Ala Ser Ala Tyr Ala Thr Ser Leu Arg Ala Lys Val Leu Asp Cys
 100 105 110
 Ile Arg Gly Leu Leu Pro Ala Ala Thr Leu Thr Asn Leu Gly Phe Phe
 115 120 125
 Gly Asn Gly Arg Phe Trp Gln Asn Leu Ile His Lys Leu Gln Gly His
 130 135 140
 Asn Leu Ala Glu Leu Arg Arg Leu Gly Asp Glu Ser Leu Thr Glu Leu
 145 150 155 160
 Met Lys Val Ile Pro Ser Phe Val Ser Arg Ala Glu Pro His His His
 165 170 175
 His His Gln Ala Met Met Gln Tyr Arg Arg Ala Leu Lys Glu Gln Leu
 180 185 190
 Lys Gly Leu Ala Glu Gln Ala Thr Phe Ser Glu Glu Met Ser Ser Ser
 195 200 205
 Pro Ser Val Gln Leu Val Tyr Gly Asp Pro Asp Gly Ile Tyr Lys Val
 210 215 220
 Ala Ala Gly Phe Leu Phe Pro Tyr Ser Asn Arg Ser Leu Thr Asp Leu
 225 230 235 240
 Ile Asp Tyr Cys Lys Lys Met Pro His Glu Asp Leu Val Gln Ile Leu
 245 250 255
 Glu Ser Ser Val Ser Ala Arg Glu Asn Arg Arg His Lys Ser Pro Arg
 260 265 270
 Gly Leu Glu Cys Val Glu Phe Gly Phe Asp Ile Leu Ala Asp Phe Gly
 275 280 285
 Ala Tyr Arg Asp Leu Gln Arg His Arg Thr Leu Thr Gln Glu Arg Gln
 290 295 300
 Leu Leu Ser Thr His His Gly Tyr Asn Phe Pro Val Glu Leu Leu Asp
 305 310 315 320
 Thr Pro Met Glu Lys Ser Tyr Arg Glu Ala Met Glu Arg Ala Asn Glu
 325 330 335
 Thr Tyr Asn Glu Ile Val Gln Glu Phe Pro Glu Glu Ala Gln Tyr Met
 340 345 350
 Val Pro Met Ala Tyr Asn Ile Arg Trp Phe Phe His Val Asn Ala Arg
 355 360 365
 Ala Leu Gln Trp Ile Cys Glu Leu Arg Ser Gln Pro Gln Gly His Gln
 370 375 380
 Asn Tyr Arg Thr Ile Ala Thr Gly Leu Val Arg Glu Val Val Lys Phe
 385 390 395 400
 Asn Pro Met Tyr Glu Leu Phe Phe Lys Phe Val Asp Tyr Ser Asp Il
 405 410 415

Asp Leu Gly Arg Leu Asn Gln Glu Met Arg Lys Glu Pro Thr Thr
 420 425 430

<210>797

<211>292

<212>PRT

<213>Chlamydia pneumoniae

<400>797

Gly Thr Leu Val Leu His Ala Leu Asp Thr Tyr Arg Pro Ser Ile Glu
 1 5 10 15
 Ser Ala Ile Glu Lys Ala Leu Glu Gly Phe Gly Pro Ile Gly His Pro
 20 25 30
 Ile Arg Ser Pro Val Glu Tyr Ala Leu Gln Gly Gly Gly Lys Arg Leu
 35 40 45
 Arg Pro Gly Leu Val Cys Met Met Ala Gln Gly Leu Gly Leu Asn His
 50 55 60
 Asp Val Met Asp Ser Ala Leu Ala Val Glu Phe Val His Thr Ser Thr
 65 70 75 80
 Leu Ile Ala Asp Asp Leu Pro Cys Met Asp Asn Asp Asp Glu Arg Arg
 85 90 95
 Gly Arg Pro Thr Val His Lys Ala Phe Asp Glu Ala Thr Ala Leu Leu
 100 105 110
 Ala Ser Tyr Ala Leu Ile Pro Ala Ala Tyr Ser His Leu Arg Leu Asn
 115 120 125
 Ala Lys Lys Leu Lys Glu Gln Gly Cys Asp Pro Arg Glu Ile Asp Ile
 130 135 140
 Ala Tyr Asn Ile Ile Gly Asp Ile Thr Asp Lys Asn Ile Gly Cys Ser
 145 150 155 160
 Gly Val Leu Gly Gly Gln Tyr Asp Asp Met Phe Phe Ser Asn Arg Gly
 165 170 175
 Gln Glu His Val Gln Ser Ile Met Ile Lys Lys Thr Gly Ser Leu Phe
 180 185 190
 Glu Ile Ala Cys Ile Ser Gly Trp Leu Phe Gly Gly Gly Asp Pro Gln
 195 200 205
 Phe Ala Pro Ile Ile Thr Ser Phe Ser Asn Asn Phe Gly Leu Leu Phe
 210 215 220
 Gln Ile Lys Asp Asp Phe Ser Asp Leu Gln Lys Asp Ser Gln Gln Ile
 225 230 235 240
 Gly Leu Asn Tyr Ala Leu Leu Phe Gly Glu Lys Ala Ala Leu Glu Leu
 245 250 255
 Leu Ala Arg Ser Gln Asn Asn Cys Leu Glu Leu Leu Asp Arg Leu Ser
 260 265 270
 Ala Gly Gly Leu Lys Asn Ser Ser Glu Phe Glu Thr Ile Ile Ser Ser
 275 280 285
 Leu Gly Ser Phe
 290

<210>798

<211>208

<212>PRT

<213>Chlamydia pneumoniae

<400>798

Met Thr Tyr Leu Ala Ser Ser Ile Phe Ser Pro Glu Asp Phe Leu Tyr
 3 5 10 15
 Pro Glu Ile Ile Ser Lys Ala His Tyr Thr Trp Asp Ile Leu Asp Leu
 20 25 30
 Met Asp Gln Met Leu Glu Asn His Val Phe Ser Gly Ile His Gly Thr
 35 40 45
 Val Glu Ser Gly Val Thr Leu Lys Asn Ile Glu Lys Ile Glu Ile Ala
 50 55 60
 Glu Asp Ala Tyr Val Glu Ser Gly Ala Tyr Ile Val Gly Pro Cys Ile
 65 70 75 80
 Leu Gly Ser Gln Thr Glu Val Arg His Gly Ala Tyr Leu Arg Gly Asn
 85 90 95
 Val Ile Thr Gly Ser Arg Cys Val Val Gly His Cys Thr Glu Ile Lys
 100 105 110

Asn Ser Tyr Leu Gly His His Thr Lys Ala Ala His Phe Ala Tyr Leu
 115 120 125
 Gly Asp Ser Val Leu Ser Ser Glu Val Asn Leu Gly Ala Gly Val Arg
 130 135 140
 Cys Ala Asn Phe Arg Leu Asp Gly Arg Asn Ile Tyr Val Arg Ser Thr
 145 150 155 160
 Ser Asp Lys Ser Lys Lys Ile Asp Thr Gly Arg Arg Lys Leu Gly Ala
 165 170 175
 Phe Leu Gly Lys Gly Val Ala Ile Gly Cys Asn Val Val Ile Asn Pro
 180 185 190
 Gly Gln His Ile Leu Pro His Thr Arg Ile Arg Pro Gly Gln Val Ile
 195 200 205

<210>799

<211>241

<212>PRT

<213>Chlamydia pneumoniae

<400>799

Asn Leu Phe Cys Phe His Met Ile Gly Asp Lys Ile Ile Leu Phe Val
 1 5 10 15
 Thr Glu Asp Leu Ser Leu Ser Ser Gln Leu Lys Asp Leu Ala Ser Gln
 20 25 30
 Arg Ser Asp Tyr Gln Ile Leu Val Ser Pro Val Phe Pro Thr Ser Phe
 35 40 45
 Glu Ser Val Ala Ile Phe Cys Glu Tyr Leu Leu Leu Pro Glu Gln Ile
 50 55 60
 Phe Ser Pro Gly Ile Phe Pro Glu Glu Asp Leu Ile Val Leu Phe Asp
 65 70 75 80
 Thr Phe Gln Glu Glu Ala Ile Thr Lys Val Leu Asn Gln Gly Ala Thr
 85 90 95
 Gly Tyr Leu Leu Arg Pro Ile Thr Ala Lys Val Leu Asp Ala Val Ile
 100 105 110
 Arg Ala Phe Leu Arg Gln His Glu Val Leu Glu His Ser Ile Pro Asp
 115 120 125
 Thr Met Thr Phe Gly Asp His Thr Phe Arg Val Leu Asn Leu Val Ile
 130 135 140
 Glu Ser Pro Glu Gly Ser Val Tyr Leu Thr Pro Ser Glu Ala Gly Ile
 145 150 155 160
 Leu Lys Lys Leu Leu Ile Asn Arg Gly His Leu Cys Leu Arg Lys Asn
 165 170 175
 Leu Leu Ala Glu Ile Lys Gly Asn Thr Lys Glu Ile Ile Ala Arg Asn
 180 185 190
 Val Asp Val His Ile Ala Ser Leu Arg Lys Lys Leu Gly Pro Tyr Gly
 195 200 205
 Ser Lys Ile Val Thr Ile Arg Gly Val Gly Tyr Leu Phe Ser Asp Ala
 210 215 220
 Asp Ser Ile Pro Leu Gln Asn His Asp Asn Thr Ala His Pro Ile Glu
 225 230 235 240
 Glu

<210>800

<211>609

<212>PRT

<213>Chlamydia pneumoniae

<400>800

Met Phe Arg Cys Ile Leu Phe Gly Ile Phe Leu Leu Thr Cys Phe Ser
 1 5 10 15
 Ser Gly Gly Val Leu Tyr Tyr Leu Phe Cys Ser His Asp Phe Ser Ile
 20 25 30
 Gly Pro Lys Glu Lys Ser Arg Ser Val Trp Ile Glu Glu Glu Lys Glu
 35 40 45
 Phe Thr Asp Ser Val Leu His His Leu Pro Ser Gln His Gln His Leu
 50 55 60
 His Ile Leu Cys Phe Gln Gly Phe Leu Leu Gln Lys Gln Gln Lys Phe
 65 70 75 80

Ser	Gln	Ala	Glu	Lys	Ile	Phe	Ser	Lys	Val	Tyr	Asp	Glu	Ala	Gln	Asp	25	90	95
Gly	Pro	Phe	Leu	Phe	Lys	Gln	Glu	Ile	Leu	Gly	Ser	Arg	Leu	Ile	Asn	100	105	110
Ser	Phe	Phe	Leu	Gln	Lys	Thr	Asp	Val	Met	Glu	Thr	Ile	Leu	Cys	Leu	115	120	125
Leu	Asn	Gln	Arg	Cys	Pro	Asn	Ser	Pro	Tyr	Tyr	His	Leu	Phe	Lys	Ala	130	135	140
Leu	Val	Cys	Tyr	Lys	Gln	Lys	Leu	Tyr	Arg	Glu	Val	Ile	Glu	Gln	Leu	145	150	155
Ala	Tyr	Trp	Gln	Glu	Glu	Lys	Thr	Arg	Ala	Leu	Ala	Pro	Leu	Leu	Asn	165	170	175
Ile	Ser	Ile	Glu	Gln	Leu	Leu	Thr	Asp	Phe	Leu	Leu	Asp	Tyr	Ile	Ser	180	185	190
Ala	His	Ser	Leu	Ile	Glu	Gln	Lys	Met	Phe	Pro	Glu	Gly	Arg	Val	Ile	195	200	205
Leu	Asn	Arg	Asn	Ile	Asn	Arg	Leu	Leu	Lys	His	Glu	Cys	Glu	Trp	Asn	210	215	220
Ala	Lys	Thr	Tyr	Asp	Arg	Ile	Ala	Ile	Leu	Leu	Ser	Arg	Ser	Tyr	Phe	225	230	235
Leu	Glu	Leu	Val	Glu	Ser	Lys	Ser	Ala	Asp	Ile	Tyr	Phe	Asp	Tyr	Tyr	245	250	255
Glu	Met	Val	Leu	Phe	Tyr	Leu	Lys	Lys	Ile	Tyr	Ile	Leu	Glu	Gln	Cys	260	265	270
Pro	Tyr	Ala	Glu	Leu	Leu	Pro	Glu	Gln	Gln	Leu	Val	Ser	Leu	Ile	Met	275	280	285
Glu	His	Val	Phe	Ile	Leu	Pro	Lys	Asp	Lys	Leu	Tyr	Pro	Leu	Ile	Gln	290	295	300
Leu	Leu	Gln	Met	Trp	Gln	Lys	His	Tyr	Val	His	Pro	Asn	Ser	Ser	Leu	305	310	315
Val	Val	Gln	Ile	Leu	Val	Asp	Arg	Phe	Ser	Thr	His	Met	Glu	Gly	Ala	325	330	335
Ile	Arg	Phe	Cys	Glu	Ala	Leu	Val	Ser	Phe	Ser	Gly	Leu	Glu	Glu	Leu	340	345	350
His	Gln	Gln	Ile	Ile	Thr	Thr	Phe	Glu	Glu	Leu	Leu	Ser	Asn	Lys	Val	355	360	365
Gln	Gln	Ile	Lys	Thr	Glu	Glu	Ala	Lys	Gln	Cys	Val	Ala	Leu	Leu	His	370	375	380
Ile	Leu	Asp	Pro	Ser	Ile	Ser	Ile	Ser	Glu	Lys	Leu	Ala	Leu	Ser	Ser	385	390	395
Asp	Thr	Leu	Gln	Asn	Ile	Val	Ser	Gly	Asp	Asp	Glu	Gln	His	Thr	Lys	405	410	415
Leu	Arg	Asn	Tyr	Leu	Asp	Leu	Trp	Glu	Ala	Ile	Gln	Ser	Tyr	Asp	Ile	420	425	430
Asp	Arg	Gln	Gln	Leu	Val	His	His	Leu	Val	Tyr	Gly	Ala	Lys	Asp	Leu	435	440	445
Trp	Lys	Lys	Gly	Gly	Ser	Asp	Glu	Lys	Ala	Leu	Asn	Leu	Leu	Gln	Leu	450	455	460
Val	Leu	Arg	Phe	Thr	Ser	Tyr	Asp	Ile	Glu	Cys	Glu	Ser	Val	Val	Phe	465	470	475
Leu	Phe	Ile	Lys	Gln	Ala	Tyr	Lys	Gln	Ala	Leu	Ser	Ser	His	Ala	Ile	485	490	495
Ala	Arg	Leu	Leu	Lys	Leu	Glu	Lys	Phe	Ile	Ser	Glu	Ala	Asn	Ile	Pro	500	505	510
Ser	Ile	Val	Ile	Ser	Glu	Ala	Glu	Lys	Ala	Asn	Phe	Leu	Ala	Asp	Ala	515	520	525
Glu	Tyr	Leu	Phe	Ala	His	Glu	Asp	Tyr	Asp	Lys	Cys	Tyr	Leu	Tyr	Ser	530	535	540
Met	Trp	Leu	Thr	Lys	Val	Ala	Pro	Ser	Pro	Gln	Ser	Tyr	Arg	Leu	Ala	545	550	555
Gly	Leu	Cys	Leu	Met	Glu	Asn	Lys	Arg	Tyr	Asp	Glu	Ala	Leu	Glu	Phe	565	570	575
Leu	Cys	Met	Leu	Ser	Pro	Asn	Asp	Ser	Ile	Asn	Asp	Tyr	Lys	Thr	Gln	580	585	590

Lys Ala Leu Ala Phe Cys Gln Lys His Gln Ser Lys Asp Arg Ala Ala
 595 600 605
 Ser

<210>801

<211>395

<212>PRT

<213>Chlamydia pneumoniae

<400>801

Gly Trp Ala Leu His Thr Glu Phe Ala Pro Phe Leu Glu Asp Leu Val
 1 5 10 15
 His Gln Gln Val Ile Ser Pro Leu Asp Ile Ala Phe Ala Ser Lys His
 20 25 30
 Ile Ser Ser Asp Phe Glu Glu Ser Phe Val Phe Leu Ala Val Ser Ser
 35 40 45
 Ala Leu Trp Arg Tyr Gly His Pro Phe Leu Ser Leu Glu Glu Asn Arg
 50 55 60
 Ile Arg Pro Ser Leu Gly Gly Ile Ser Glu Thr Asp Leu Tyr Arg Gly
 65 70 75 80
 Phe His Asn Leu Pro Lys Glu Val Arg Asp Lys Leu Phe Val Val Val
 85 90 95
 Ser Gly Arg Leu Tyr Leu Arg Ser Leu Tyr Thr Ile Arg Ser Lys Leu
 100 105 110
 Leu Asp Lys Leu Ser Leu Leu Cys Ser Ala Thr Pro Asn Tyr Phe Pro
 115 120 125
 Pro Ser Ile Asp Ser Ser Ile Leu Ser Glu Glu Gln Asn Phe Ile Phe
 130 135 140
 Asn Lys Ile Thr Gln Gly Cys Phe Ser Ile Val Ser Gly Gly Pro Gly
 145 150 155 160
 Thr Gly Lys Thr Phe Leu Ala Ala Gln Leu Ile Leu Ser Leu Val Lys
 165 170 175
 Gln Gln Pro Lys Leu Arg Ile Ala Ile Val Ser Pro Thr Gly Lys Ala
 180 185 190
 Thr Ser His Ile Arg Gln Ile Leu Met Lys Tyr Asn Ile Phe Asp Asp
 195 200 205
 Met Val Leu Met Gln Thr Val His His Phe Leu Gln Glu Tyr Ala Tyr
 210 215 220
 Arg Arg Tyr Asn Ser Ile Asp Val Leu Leu Val Asp Glu Gly Ser Met
 225 230 235 240
 Val Thr Phe Asp Leu Leu Tyr Ser Leu Val Gln Thr Leu Gln Gly Tyr
 245 250 255
 Glu Lys Asp Lys Lys Leu Tyr Thr Ser Ser Leu Ile Ile Leu Gly Asp
 260 265 270
 Thr Asn Gln Leu Pro Pro Ile Gly Ile Gly Val Gly Asn Pro Leu Gln
 275 280 285
 Asp Leu Ile Gly Tyr Phe Pro
 290 295

<210>802

<211>205

<212>PRT

<213>Chlamydia pneumoniae

<400>802

Asp Ile Ser His Glu Asn Thr Phe Phe Leu Lys Thr Ser His Arg Ala
 1 5 10 15
 Lys Thr Gly Val Val Asp Gln Leu Thr Gln Ser Val Leu Arg Gly Glu
 20 25 30
 Met Ile Ser Phe Ser Pro Leu Pro Ser Ile Ser Ser Ala Ile Glu Val
 35 40 45
 Leu Lys Asn Arg Phe Val Lys Ser Leu Arg Gln Ser Glu Ala Arg Leu
 50 55 60
 Cys Val Leu Thr Pro Met Arg His Gly Pro Trp Gly Val Leu Asn Leu
 65 70 75 80
 Asn Thr Met Ile His Gln Arg Leu Ala Arg Ser Asp Pro Asp Leu Arg
 85 90 95

Ile Pro Ile Met Val Thr Ser Arg Tyr Glu Thr Trp Gly Leu Phe Asn
 100 105 110
 Gly Asp Thr Gly Leu Leu Cys Leu Lys Thr Gln Lys Leu His Phe Pro
 115 120 125
 Gln His Glu Pro Ile Asp Ser Arg Ala Leu Ser Gln Tyr Val Tyr Asn
 130 135 140
 Tyr Val Met Ser Val His Lys Ser Gln Gly Ser Glu Tyr Asp Glu Val
 145 150 155 160
 Ile Val Ile Ile Pro Lys Gly Ser Glu Val Phe Gly Val Ser Ile Leu
 165 170 175
 Tyr Thr Ala Ile Thr Arg Ala Lys Tyr Arg Val Ser Val Trp Arg Asp
 180 185 190
 Pro Glu Thr Leu His Lys Thr Ile Lys Lys Ser Asn Tyr
 195 200 205

<210>803

<211>283

<212>PRT

<213>Chlamydia pneumoniae

<400>803

Ile Met Ala Thr Ala His Leu Gly Arg Gln Ala Leu Leu His Leu Arg
 1 5 10 15
 Ser Trp Thr Pro Ala Ile Arg Ala Ser Gly Asn Leu Phe Arg Gln Gln
 20 25 30
 Ser Met Ser Leu His Asn Asn Val Leu Phe Ala Gly Asp Ile Val Gly
 35 40 45
 Ala Ile Lys Asn Ser Thr Ala Ile Ser Arg His Ala Leu Gly Ser Ser
 50 55 60
 His Tyr Ala His Ala Ala Leu Gln Lys Thr Glu Gly Phe Leu Gly Ala
 65 70 75 80
 Ala Asp Gly Val Asn Thr Ala Val Ala Gly Ala Met Leu Trp Gly Gln
 85 90 95
 Leu Leu Asn Gly Ser Met Ile Phe Glu Thr Asp Glu Glu Thr Gly Glu
 100 105 110
 Leu Arg Arg Cys Asn Glu Ala Asp Ala Glu Gly Cys Met Thr Gln Lys
 115 120 125
 Leu Gln Arg Arg Ser Ala Leu Thr Ile Thr Gly Lys Val Ala Arg Leu
 130 135 140
 Ala Ser Lys Thr Leu Gly Thr Ala Thr Phe Leu His Glu Met Asp Val
 145 150 155 160
 Val Ser Leu Gly Ala Asn Ala Asn Lys Ile Gly Cys Lys Val Thr Ser
 165 170 175
 Cys Leu Asn Leu Val Ala Thr Gly Cys Ser Leu Thr Glu Ser Ser Ile
 180 185 190
 Ser Leu Tyr Arg Ile Leu Ser Thr Arg Pro Glu Thr Ile Ser Asp Pro
 195 200 205
 Glu Asn Arg Asn Lys Pro Ser Ala Glu Phe Ala Ala Arg Ser Lys Ala
 210 215 220
 Ile Arg Asn Ala Phe Ile Ala Trp Leu Gly Asp Val Val Asp Leu Val
 225 230 235 240
 Cys Asp Ala Leu Gly Thr Leu Ser Leu Phe Leu Pro Ala Ile Leu Gly
 245 250 255
 Val His Ala Val Leu Ile Met Ala Ile Leu Gly Leu Ile Ser Cys Val
 260 265 270
 Ile Asn Phe Val Lys Asp Tyr Ala Lys Ile Gly
 275 280

<210>804

<211>82

<212>PRT

<213>Chlamydia pneumoniae

<400>804

Tyr Thr Lys Lys Thr Ser Ala Glu Lys Arg Ile Leu Thr Ala Gln Lys
 1 5 10 15
 Arg Glu Leu Ile Asn His Ser Phe Lys Ser Lys Val Lys Thr Ile Val
 20 25 30

Lys Lys Phe Glu Ala Ser Leu Lys Leu Asp Asp Thr Gln Ala Thr Leu
 35 40 45
 Ser Asn Leu Gln Ser Val Tyr Ser Val Val Asp Lys Ala Val Lys Arg
 50 55 60
 Gly Ile Phe Lys Asp Asn Lys Ala Ala Arg Ile Lys Ser Lys Ala Thr
 65 70 75 80
 Leu Lys Val Asn Ala Arg Ala Ser
 85

<210>805

<211>407

<212>PRT

<213>Chlamydia pneumoniae

<400>805

Tyr Lys Asp Leu Phe Phe Met Leu Leu Val Arg Lys Trp Leu His Thr
 1 5 10 15
 Cys Phe Lys Tyr Trp Ile Tyr Phe Leu Pro Val Val Thr Leu Leu Leu
 20 25 30
 Pro Leu Val Cys Tyr Pro Phe Leu Ser Ile Ser Gln Lys Ile Tyr Gly
 35 40 45
 Tyr Phe Val Phe Thr Thr Ile Ser Ser Leu Gly Trp Phe Phe Ala Leu
 50 55 60
 Arg Arg Arg Glu Asn Gln Leu Lys Thr Ala Ala Val Gln Leu Leu Gln
 65 70 75 80
 Thr Lys Ile Arg Lys Leu Thr Glu Asn Asn Glu Gly Leu Arg Gln Ile
 85 90 95
 Arg Glu Ser Leu Lys Glu His Gln Gln Glu Ser Ala Gln Leu Gln Ile
 100 105 110
 Gln Ser Gln Lys Leu Lys Asn Ser Leu Phe His Leu Gln Gly Leu Leu
 115 120 125
 Val Lys Thr Lys Gly Glu Gly Gln Lys Leu Glu Thr Leu Leu Leu His
 130 135 140
 Arg Thr Glu Glu Asn Arg Cys Leu Lys Met Gln Val Asp Ser Leu Ile
 145 150 155 160
 Gln Glu Cys Gly Glu Lys Thr Glu Glu Val Gln Thr Leu Asn Arg Glu
 165 170 175
 Leu Ala Glu Thr Leu Ala Tyr Gln Gln Ala Leu Asn Asp Glu Tyr Gln
 180 185 190
 Ala Thr Phe Ser Glu Gln Arg Asn Met Leu Asp Lys Arg Gln Ile Tyr
 195 200 205
 Ile Gly Lys Leu Glu Asn Lys Val Gln Asp Leu Met Tyr Glu Ile Arg
 210 215 220
 Asn Leu Leu Gln Leu Glu Ser Asp Ile Ala Glu Asn Ile Pro Ser Gln
 225 230 235 240
 Glu Ser Asn Ala Val Thr Gly Asn Ile Ser Leu Gln Leu Ser Ser Glu
 245 250 255
 Leu Lys Lys Ile Ala Phe Lys Ala Glu Asn Ile Glu Ala Ala Ser Ser
 260 265 270
 Leu Thr Ala Ser Arg Tyr Leu His Thr Asp Thr Ser Val His Asn Tyr
 275 280 285
 Ser Leu Glu Cys Arg Gln Leu Phe Asp Ser Leu Arg Glu Glu Asn Leu
 290 295 300
 Gly Met Leu Phe Val Tyr Ala Arg Gln Ser Gln Arg Ala Val Phe Ala
 305 310 315 320
 Asn Ala Leu Phe Lys Thr Trp Thr Gly Tyr Cys Ala Glu Asp Phe Leu
 325 330 335
 Lys Phe Gly Ser Asp Ile Val Ile Ser Gly Gly Lys Gln Trp Met Glu
 340 345 350
 Asp Leu His Ser Ser Arg Glu Glu Cys Ser Gly Arg Leu Val Ile Lys
 355 360 365
 Thr Lys Ser Arg Gly His Leu Pro Phe Arg Tyr Cys Leu Met Ala Leu
 370 375 380
 Asn Lys Gly Pro Leu Cys Tyr His Val Leu Gly Val Leu Tyr Pro Leu
 385 390 395 400
 His Lys Glu Val Leu Gln Ser

<210>806

<211>591

<212>PRT

<213>Chlamydia pneumoniae

<400>806

Leu	Thr	Lys	Leu	Ser	Ser	Lys	Ala	Arg	Asn	Pro	Leu	Val	Leu	Phe	Gln
1				5					10					15	
Val	Arg	Lys	Leu	Phe	Met	Asn	Thr	Gln	Asn	Ser	Gln	Ala	Thr	Glu	Val
		20						25					30		
Ser	Ser	Glu	Glu	Ser	Gln	Lys	Lys	Leu	Glu	Glu	Leu	Val	Ala	Leu	
		35				40					45				
Ala	Lys	Glu	Gln	Gly	Phe	Ile	Thr	Tyr	Glu	Glu	Ile	Asn	Glu	Ile	Leu
	50					55					60				
Pro	Met	Ser	Phe	Asp	Thr	Pro	Glu	Gln	Ile	Asp	Gln	Val	Leu	Ile	Phe
	65			70					75					80	
Leu	Thr	Gly	Met	Asp	Ile	Gln	Val	Leu	Asn	Gln	Ile	Asp	Val	Glu	Arg
			85					90					95		
Gln	Lys	Glu	Lys	Lys	Lys	Glu	Ala	Lys	Glu	Leu	Glu	Gly	Leu	Ala	Arg
			100					105					110		
Arg	Thr	Glu	Gly	Thr	Pro	Asp	Asp	Pro	Val	Arg	Met	Tyr	Leu	Lys	Glu
	115					120						125			
Met	Gly	Thr	Val	Pro	Leu	Leu	Thr	Arg	Gln	Glu	Glu	Val	Glu	Ile	Ser
	130				135							140			
Lys	Arg	Ile	Glu	Lys	Ala	Gln	Val	Gln	Ile	Glu	Arg	Ile	Ile	Leu	Arg
	145				150					155				160	
Phe	Arg	Tyr	Ser	Ala	Lys	Glu	Ala	Ile	Ser	Ile	Ala	His	Tyr	Leu	Ile
			165					170					175		
Ser	Gly	Lys	Glu	Arg	Phe	Asp	Lys	Ile	Ile	Ser	Glu	Lys	Glu	Val	Glu
		180				185						190			
Asp	Lys	Thr	His	Phe	Leu	Lys	Leu	Leu	Pro	Lys	Leu	Ile	Thr	Leu	Leu
	195					200						205			
Lys	Glu	Glu	Asp	Thr	Tyr	Leu	Glu	Asn	Leu	Leu	Leu	Ser	Leu	Lys	Gln
	210				215						220				
Pro	Asp	Leu	Ser	Lys	Gln	Glu	Ala	Ala	Lys	Leu	Asn	Asp	Ser	Leu	Glu
	225			230						235				240	
Lys	Cys	Arg	Ile	Arg	Thr	Gln	Ala	Tyr	Leu	Arg	Cys	Phe	His	Cys	Arg
			245					250					255		
His	Asn	Val	Thr	Glu	Asp	Phe	Gly	Glu	Val	Val	Phe	Lys	Ala	Tyr	Asp
		260				265						270			
Ser	Phe	Leu	His	Leu	Glu	Gln	Gln	Ile	Asn	Asp	Leu	Lys	Val	Arg	Ala
	275					280						285			
Glu	Arg	Asn	Lys	Phe	Ala	Ala	Ala	Lys	Leu	Ala	Ala	Ala	Lys	Arg	Lys
	290				295					300					
Leu	Tyr	Lys	Arg	Glu	Val	Ala	Ala	Gly	Arg	Thr	Leu	Glu	Glu	Phe	Lys
	305				310					315				320	
Lys	Asp	Val	Arg	Met	Leu	Gln	Arg	Trp	Met	Asp	Lys	Ser	Gln	Glu	Ala
			325					330					335		
Lys	Lys	Glu	Met	Val	Glu	Ser	Asn	Leu	Arg	Leu	Val	Ile	Ser	Ile	Ala
		340				345						350			
Lys	Lys	Tyr	Thr	Asn	Arg	Gly	Leu	Ser	Phe	Leu	Asp	Leu	Ile	Gln	Glu
	355					360					365				
Gly	Asn	Met	Gly	Leu	Met	Lys	Ala	Val	Glu	Lys	Phe	Glu	Tyr	Arg	Arg
	370				375						380				
Gly	Tyr	Lys	Phe	Ser	Thr	Tyr	Ala	Thr	Trp	Trp	Ile	Arg	Gln	Ala	Val
	385			390					395					400	
Thr	Arg	Ala	Ile	Ala	Asp	Gln	Ala	Arg	Thr	Ile	Arg	Ile	Pro	Val	His
			405					410					415		
Met	Ile	Glu	Thr	Ile	Asn	Lys	Val	Leu	Arg	Gly	Ala	Lys	Lys	Leu	Met
		420				425						430			
Met	Glu	Thr	Gly	Lys	Glu	Pro	Thr	Pro	Glu	Glu	Leu	Ala	Glu	Glu	Leu
	435					440					445				
Gly	Leu	Thr	Pro	Asp	Arg	Val	Arg	Glu	Ile	Tyr	Lys	Ile	Ala	Gln	His
	450				455						460				

Pro Ile Ser Leu Gln Ala Glu Val Gly Glu Gly Ser Glu Ser Ser Phe
 465 470 475 480
 Gly Asp Phe Leu Glu Asp Thr Ala Val Glu Ser Pro Ala Glu Ala Thr
 485 490 495
 Gly Tyr Ser Met Leu Lys Asp Lys Met Lys Glu Val Leu Lys Thr Leu
 500 505 510
 Thr Asp Arg Glu Arg Phe Val Leu Ile His Arg Phe Gly Leu Leu Asp
 515 520 525
 Gly Lys Pro Lys Thr Leu Glu Glu Val Gly Ser Ala Phe Asn Val Thr
 530 535 540
 Arg Glu Arg Ile Arg Gln Ile Glu Ala Lys Ala Leu Arg Lys Met Arg
 545 550 555 560
 His Pro Ile Arg Ser Lys Gln Leu Arg Ala Phe Leu Asp Leu Leu Glu
 565 570 575
 Glu Glu Lys Thr Gly Thr Ser Lys Val Lys Ser Leu Lys Ser Lys
 580 585 590

<210>807

<211>142

<212>PRT

<213>Chlamydia pneumoniae

<400>807

Pro Cys Ile Lys Asn Ile Ala Leu Val Ile Ala Ile Glu Arg Tyr Gln
 1 5 10 15
 Leu Ile Ile Ser Lys Phe Arg Met Trp Leu Phe Leu Gly Cys Ser Val
 20 25 30
 Glu Glu Arg His Phe Lys Gln Pro Val Leu Ile Ser Val Thr Phe Ser
 35 40 45
 Tyr Asn Glu Val Pro Ser Ala Cys Leu Ser Asp Lys Leu Ser Asp Ala
 50 55 60
 Cys Cys Tyr Leu Glu Val Thr Ser Leu Ile Glu Ile Ala Asn Thr
 65 70 75 80
 Lys Pro Tyr Ala Leu Ile Glu His Leu Ala Asn Glu Leu Phe Asp Ser
 85 90 95
 Leu Val Ile Ser Phe Gly Asp Lys Ala Ser Lys Ile Asp Leu Glu Val
 100 105 110
 Glu Lys Glu Arg Pro Pro Val Pro Asn Leu Leu Asn Pro Ile Lys Phe
 115 120 125
 Thr Ile Ser Lys Glu Leu Cys Pro Ser Pro Val Leu Ser Ala
 130 135 140

<210>808

<211>452

<212>PRT

<213>Chlamydia pneumoniae

<400>808

Arg Ala Met Ser Glu Pro Arg Phe Val Cys Leu Ser Leu Gly Ser Asn
 1 5 10 15
 Leu Gly Asn Arg Phe Lys Asn Leu Gln Ile Ala Arg Thr Leu Leu Gly
 20 25 30
 Glu Gln Ala Val Leu Gly Leu Arg Ser Ser Val Ile Leu Glu Thr Glu
 35 40 45
 Ala Leu Leu Leu Pro Gly Ser Pro Pro Glu Trp Asp Leu Pro Tyr Phe
 50 55 60
 Asn Ser Val Leu Val Gly Glu Thr Thr Leu Ser Leu Arg Glu Leu Leu
 65 70 75 80
 Val Thr Ile Lys Gln Ile Glu Lys Val Val Gly Arg Ala Glu Glu Ser
 85 90 95
 Pro Pro Trp Ser Pro Arg Thr Ile Asp Val Asp Ile Leu Leu Tyr Gly
 100 105 110
 Asp Glu Ser Phe Cys Cys Asp His Thr Glu Ile Thr Ile Pro Leu Ser
 115 120 125
 Asn Leu Leu Ser Arg Pro Phe Leu Ile Ala Leu Ile Ala Ser Leu Cys
 130 135 140
 Pro Tyr Arg Arg Phe Cys Thr Gln Gly Ser Pro Tyr His Asn Phe Thr
 145 150 155 160

Phe Gly Glu Leu Ala His His Leu Pro Ser Pro Pro Gly Met Ile Arg
 165 170 175
 Arg Ser Leu Ser Pro Asp Thr Met Leu Met Gly Val Val Asn Val Thr
 180 185 190
 Asn Asp Ser Met Ser Asp Gly Gly Met Phe Leu Asp Pro Glu Lys Ala
 195 200 205
 Val Ala Gln Ala Glu Lys Leu Phe Thr Glu Gly Ala Ala Val Ile Asp
 210 215 220
 Phe Gly Ala Gln Ala Thr Asn Pro Lys Val Lys Gln Phe Leu Ser Val
 225 230 235 240
 Asp Gln Glu Trp Glu Arg Leu Glu Pro Val Leu Arg Leu Leu Lys Glu
 245 250 255
 Thr Trp Ser Asn Arg Lys Gln Tyr Pro Ile Ile Ser Leu Asp Thr Phe
 260 265 270
 Tyr Pro Glu Ile Ile Leu Arg Ala Met Asp Ile Tyr Pro Ile Gln Trp
 275 280 285
 Ile Asn Asp Val Ser Gly Gly Ser Gln Ser Met Ala Glu Val Ala Arg
 290 295 300
 Asp Cys Glu Leu Ser Leu Val Met Asn His Ser Ser Ser Leu Pro Val
 305 310 315 320
 Asp Pro Lys Asn Ile Leu Ser Phe Ser Val Pro Ile Gly Glu Gln Leu
 325 330 335
 Leu Ser Trp Gly Glu Lys Gln Leu Lys Met Phe Ser Asp Val Gly Leu
 340 345 350
 Asn Ala Asn Gln Val Ile Phe Asp Pro Gly Ile Gly Phe Gly Lys Gly
 355 360 365
 Ala Ala Gln Ser Leu Ala Thr Leu Tyr Glu Ile Ala Lys Phe Lys Arg
 370 375 380
 Leu Gly Cys Pro Ile Leu Ile Gly His Ser Arg Lys Ser Phe Leu Ser
 385 390 395 400
 Leu Phe Gly Asn His Asp Pro Lys Asp Arg Asp Trp Glu Thr Val Gly
 405 410 415
 Leu Ser Ile Leu Leu Gln Gln Gln Gly Val Asp Tyr Leu Arg Val His
 420 425 430
 Asn Val Ala Ala His Gln Lys Ala Leu Ser Val Ala Ala Cys Glu Ala
 435 440 445
 Cys Ala Pro Ile
 450

<210>209

<211>186

<212>PRT

<213>Chlamydia pneumoniae

<400>809

Val Lys Pro Val His Pro Ser Asn Phe Glu Asn Pro Leu Gly Val Glu
 1 5 10 15
 Met Cys Lys Asn Arg Gly Val Arg Gly Ile Val Ala Cys Asp Pro Arg
 20 25 30
 Gly Val Ile Gly Leu Glu Gly Lys Leu Pro Trp His Tyr Pro Glu Asp
 35 40 45
 Leu Gln Phe Phe Ser Glu Thr Ile Gln Lys Phe Pro Ile Val Met Gly
 50 55 60
 Arg Lys Thr Trp Glu Thr Leu Pro Arg Lys Tyr Phe Val Asp Arg Ala
 65 70 75 80
 Val Val Val Phe Ser His Glu Lys Arg Gln Gly Val His Gly Glu Ile
 85 90 95
 Trp Val Thr Ser Leu Glu Glu Phe Leu Leu Leu Asp Leu Ser Ser Pro
 100 105 110
 Thr Phe Leu Ile Gly Gly Gly Glu Leu Tyr Ser Leu Phe Leu Glu Asn
 115 120 125
 Gln Ile Val Arg Asp Phe Phe Ile Ser His Ile Lys Lys Glu Tyr Ala
 130 135 140
 Gly Asp Thr Phe Phe Pro Leu Ser Leu Leu Glu Thr Trp Thr Lys Thr
 145 150 155 160
 Val Leu Arg Asp Thr Gln Lys Ile Thr Thr Cys Tyr Tyr Glu Asn His

165 170 175
 His Ser Gln Asn Thr Lys Asn Ile Ser Leu
 160 185
 <210>810
 <211>264
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>810
 Arg His Gly Pro Lys Leu Cys Leu Glu Ile Pro Lys Arg Ser Gln Arg
 1 5 10 15
 Val Thr Met Lys Ile Thr Thr Val Lys Thr Pro Lys Ile Tyr Pro Tyr
 20 25 30
 Asp Asp Leu Tyr Ser Ile Leu Glu Ser Ser Leu Pro Lys Leu Asn Glu
 35 40 45
 Arg Ser Ile Val Val Ile Thr Ser Lys Ile Val Ser Leu Cys Glu Gly
 50 55 60
 Ala Val Val Glu Leu Glu Lys Val Ser Lys Asp Glu Leu Ile Lys Gln
 65 70 75 80
 Glu Ala Asp Ala Tyr Val Phe Val Glu Lys Tyr Gly Ile Tyr Leu Thr
 85 90 95
 Lys Lys Trp Gly Ile Leu Ile Pro Ser Ala Gly Ile Asp Glu Ser Asn
 100 105 110
 Val Glu Gly Tyr Phe Val Leu Tyr Pro Arg Asp Val Leu Leu Ser Val
 115 120 125
 Asn Thr Leu Gly Asp Trp Leu Arg Asn Phe Tyr His Leu Glu His Cys
 130 135 140
 Gly Ile Ile Ile Ser Asp Ser His Thr Thr Pro Leu Arg Arg Gly Thr
 145 150 155 160
 Met Gly Leu Gly Leu Cys Trp Asn Gly Phe Phe Pro Leu Tyr Asn Tyr
 165 170 175
 Val Gly Lys Pro Asp Cys Phe Gly Arg Ala Leu Lys Met Thr Tyr Ser
 180 185 190
 Asn Leu Leu Asp Gly Leu Ser Ala Ala Val Leu Cys Met Gly Glu
 195 200 205
 Gly Asp Glu Gln Thr Pro Ile Ala Ile Ile Glu Glu Ala Pro Lys Ile
 210 215 220
 Thr Phe His Ser Ser Pro Thr Thr Leu Gln Asp Met Ser Thr Leu Ala
 225 230 235 240
 Ile Ala Glu Asp Glu Asp Leu Tyr Gly Pro Leu Leu Gln Ser Met Ala
 245 250 255
 Trp Glu Thr Pro Ala Pro Thr Ser
 260
 <210>811
 <211>226
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>811
 Gly Ile Met Thr Ser Trp Ile Glu Leu Leu Asp Lys Gln Ile Glu Asp
 1 5 10 15
 Gln His Met Leu Lys His Glu Phe Tyr Gln Arg Trp Ser Glu Gly Lys
 20 25 30
 Leu Glu Lys Gln Gln Leu Gln Ala Tyr Ala Lys Asp Tyr Tyr Leu His
 35 40 45
 Ile Lys Ala Phe Pro Cys Tyr Leu Ser Ala Leu His Ala Arg Cys Asp
 50 55 60
 Asp Leu Gln Ile Arg Arg Gln Ile Leu Glu Asn Leu Met Asp Glu Glu
 65 70 75 80
 Ala Gly Asn Pro Asn His Ile Asp Leu Trp Arg Gln Phe Ala Leu Ser
 85 90 95
 Leu Gly Val Ser Glu Glu Glu Leu Ala Asn His Glu Phe Ser Gln Ala
 100 105 110
 Ala Gln Asp Met Val Ala Thr Phe Arg Arg Leu Cys Asp Met Pro Gln
 115 120 125
 Leu Ala Val Gly Leu Gly Ala Leu Tyr Thr Tyr Glu Ile Gln Ile Pro

130 135 140
 Gln Val Cys Val Glu Lys Ile Arg Gly Leu Lys Glu Tyr Phe Gly Val
 145 150 155 160
 Ser Ala Arg Gly Tyr Ala Tyr Phe Thr Val His Gln Glu Ala Asp Ile
 165 170 175
 Lys His Ala Ser Glu Glu Lys Glu Met Leu Gln Thr Leu Val Gly Arg
 180 185 190
 Glu Asn Pro Asp Ala Val Leu Gln Gly Ser Gln Glu Val Leu Asp Thr
 195 200 205
 Leu Trp Asn Phe Leu Ser Ser Phe Ile Asn Ser Thr Glu Pro Cys Ser
 210 215 220
 Cys Lys
 225
 <210>812
 <211>361
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>612
 Met Glu Thr Lys Arg Ser Ile Tyr Met Asn Leu Pro Asp Arg Lys Lys
 1 5 10 15
 Ala Leu Glu Ala Ala Val Ala Tyr Ile Glu Lys Gln Phe Gly Ala Gly
 20 25 30
 Ser Ile Met Ser Leu Gly Arg His Ser Ala Thr His Glu Ile Ser Thr
 35 40 45
 Ile Lys Thr Gly Ala Leu Ser Leu Asp Leu Ala Leu Gly Ile His Gly
 50 55 60
 Val Pro Lys Gly Arg Val Ile Glu Ile Phe Gly Pro Glu Ser Ser Gly
 65 70 75 80
 Lys Thr Thr Leu Ala Thr His Ile Val Ala Asn Ala Gln Lys Met Gly
 85 90 95
 Gly Val Ala Ala Tyr Ile Asp Ala Glu His Ala Leu Asp Pro Ser Tyr
 100 105 110
 Ala Ser Leu Ile Gly Val Asn Ile Asp Asp Leu Met Ile Ser Gln Pro
 115 120 125
 Asp Cys Gly Glu Asp Ala Leu Ser Ile Ala Glu Leu Leu Ala Arg Ser
 130 135 140
 Gly Ala Val Asp Val Ile Val Ile Asp Ser Val Ala Ala Leu Val Pro
 145 150 155 160
 Lys Ser Glu Leu Glu Gly Asp Ile Gly Asp Val His Val Gly Leu Gln
 165 170 175
 Ala Arg Met Met Ser Gln Ala Leu Arg Lys Leu Thr Ala Thr Leu Ser
 180 185 190
 Arg Ser Gln Thr Cys Ala Val Phe Ile Asn Gln Ile Arg Glu Lys Ile
 195 200 205
 Gly Val Ser Phe Gly Asn Pro Glu Thr Thr Thr Gly Gly Arg Ala Leu
 210 215 220
 Lys Phe Tyr Ser Ser Ile Arg Leu Asp Ile Arg Arg Ile Gly Ser Ile
 225 230 235 240
 Lys Gly Ser Asp Asn Ser Asp Ile Gly Asn Arg Ile Lys Val Lys Val
 245 250 255
 Ala Lys Asn Lys Leu Ala Pro Pro Phe Arg Ile Ala Glu Phe Asp Ile
 260 265 270
 Leu Phe Asn Glu Gly Ile Ser Ser Ala Gly Cys Ile Leu Asp Leu Ala
 275 280 285
 Val Glu Tyr Asn Ile Ile Glu Lys Lys Gly Ser Trp Phe Asn Tyr Gln
 290 295 300
 Glu Lys Lys Leu Gly Gln Gly Arg Glu Phe Val Arg Glu Glu Leu Lys
 305 310 315 320
 Arg Asn Arg Lys Leu Phe Glu Glu Ile Glu Lys Arg Ile Tyr Asp Val
 325 330 335
 Ile Ala Ala Asn Lys Thr Pro Ser Val His Ala Asn Glu Thr Pro Gln
 340 345 350
 Glu Val Pro Ala Gln Thr Val Glu Ala
 355 360

<210>813

<211>180

<212>PRT

<213>Chlamydia pneumoniae

<400>813

Met Thr Asp Pro Lys Ile Glu Lys Ser Ala Leu Arg Lys Leu Phe Ile
 1 5 10 15
 Ser Ile Arg Arg Asp Leu Ser Glu Glu Arg Lys His Glu Ala Ser Ser
 20 25 30
 Ala Val Ala Ser Phe Val Arg Ser Phe Ser Lys Glu Ser Val Val Leu
 35 40 45
 Ser Phe Val Ser Phe Asn His Glu Ile Asp Met Gln Glu Ala Asn Arg
 50 55 60
 Ile Leu Ile Gln Lys Cys Thr Leu Ala Leu Pro Lys Ile Asp Gln Glu
 65 70 75 80
 Asn Leu Tyr Pro Val Leu Ile Pro Ser Ile Asp Asp Leu Ile Ser Val
 85 90 95
 Val His Pro Lys Asp Pro Phe Ser Lys Gln Thr Pro Ile Ser Ser Asp
 100 105 110
 Lys Ile Thr His Val Leu Val Pro Gly Leu Ala Phe Asp Gln Gln Gly
 115 120 125
 Tyr Arg Leu Gly Tyr Gly His Gly Phe Tyr Asp Arg Trp Leu Ala Gln
 130 135 140
 His Pro Tyr Pro Ser Ile Arg Thr Ile Gly Ile Gly Tyr Cys Glu Gln
 145 150 155 160
 Lys Ile Asp Arg Leu Pro Gln Glu Ser His Asp Ile Pro Leu Ser Gln
 165 170 175
 Ile Tyr Leu Cys
 180

<210>814

<211>428

<212>PRT

<213>Chlamydia pneumoniae

<400>814

Met Asp Ile Lys Lys Leu Phe Cys Leu Phe Leu Cys Ser Ser Leu Ile
 1 5 10 15
 Ala Met Ser Pro Ile Tyr Gly Lys Thr Gly Asp Tyr Glu Lys Leu Thr
 20 25 30
 Leu Thr Gly Ile Asn Ile Ile Asp Arg Asn Gly Leu Ser Glu Thr Ile
 35 40 45
 Cys Ser Lys Glu Lys Leu Lys Lys Tyr Thr Lys Val Asp Phe Leu Ala
 50 55 60
 Pro Gln Pro Tyr Gln Lys Val Met Arg Met Tyr Lys Asn Lys Arg Gly
 65 70 75 80
 Asp Asn Val Ser Cys Leu Thr Ala Tyr His Thr Asn Gly Gln Ile Lys
 85 90 95
 Gln Tyr Leu Glu Cys Leu Asn Asn Arg Ala Tyr Gly Arg Tyr Arg Glu
 100 105 110
 Trp His Val Asn Gly Asn Ile Lys Ile Gln Ala Glu Val Ile Gly Gly
 115 120 125
 Ile Ala Asp Leu His Pro Ser Ala Glu Ser Gly Trp Leu Phe Asp Gln
 130 135 140
 Thr Thr Phe Ala Tyr Asn Asp Glu Gly Ile Leu Glu Ala Ala Ile Val
 145 150 155 160
 Tyr Glu Lys Gly Leu Leu Glu Gly Ser Ser Val Tyr Tyr His Thr Asn
 165 170 175
 Gly Asn Ile Trp Lys Glu Cys Pro Tyr His Lys Gly Val Pro Gln Gly
 180 185 190
 Lys Phe Leu Thr Tyr Thr Ser Ser Gly Lys Leu Leu Lys Glu Gln Asn
 195 200 205
 Tyr Gln Gln Gly Lys Arg His Gly Leu Ser Ile Arg Tyr Ser Glu Asp
 210 215 220
 Ser Glu Glu Asp Val Leu Ala Trp Glu Glu Tyr His Glu Gly Arg Leu
 225 230 235 240

Leu	Lys	Ala	Glu	Tyr	Leu	Asp	Pro	Gln	Thr	His	Glu	Ile	Tyr	Ala	Thr
				245					350					255	
Ile	His	Glu	Gly	Asn	Gly	Ile	Gln	Ala	Ile	Tyr	Gly	Lys	Tyr	Ala	Val
				260				265						270	
Ile	Glu	Thr	Arg	Ala	Phe	Tyr	Arg	Gly	Glu	Pro	Tyr	Gly	Lys	Val	Thr
				275			280					285			
Arg	Phe	Asp	Asn	Ser	Gly	Thr	Gln	Ile	Val	Gln	Thr	Tyr	Asn	Asa	Leu
		290			295						300				
Gln	Gly	Ala	Lys	His	Gly	Glu	Glu	Phe	Ser	Phe	Ile	Leu	Arg	Gln	Gly
305				310						315					320
Asn	Pro	Ser	Cys	Phe	Leu	Asn	Trp	His	Glu	Gly	Ile	Leu	Asn	Gly	Ile
				325					330					335	
Val	Lys	Thr	Trp	Tyr	Pro	Gly	Gly	Thr	Leu	Glu	Ser	Cys	Lys	Glu	Leu
				340				345					350		
Val	Asn	Asn	Lys	Lys	Ser	Gly	Leu	Leu	Thr	Ile	Tyr	Tyr	Pro	Glu	Gly
		355				360						365			
Gln	Ile	Met	Ala	Thr	Glu	Glu	Tyr	Asp	Asn	Asp	Leu	Leu	Ile	Lys	Gly
				370			375				380				
Glu	Tyr	Phe	Arg	Pro	Gly	Asp	Arg	His	Pro	Tyr	Ser	Lys	Ile	Asp	Arg
385					390					395					400
Gly	Cys	Gly	Thr	Ala	Val	Phe	Phe	Ser	Ser	Ala	Gly	Thr	Ile	Thr	Lys
				405				410						415	
Lys	Ile	Pro	Tyr	Gln	Asp	Gly	Lys	Pro	Leu	Leu	Asn				
				420				425							

<310>815

<211>151

<212>PRT

<213>Chlamydia pneumoniae

<400>815

Thr	Thr	Ile	Tyr	Ile	Lys	Leu	Leu	Gly	Arg	Leu	Met	Lys	Lys	Trp	Ile
1				5				10						15	
Ser	Ile	Leu	Ile	Leu	Ser	Phe	Leu	Ser	Leu	Leu	Ser	Ile	Leu	Pro	Val
				20				25					30		
Leu	Ala	Ile	Thr	Ile	Asn	His	Val	Lys	Ile	Ser	Gln	Arg	Trp	Ser	Asp
		35				40					45				
Leu	Asn	Ser	Gln	Ile	Leu	Thr	Leu	Lys	Val	Ile	Arg	Asp	His	Glu	Asp
50					55						60				
Gln	Val	Ile	Lys	His	Asn	Ala	Arg	Ile	Ser	Lys	Asp	Arg	Asn	Asn	Leu
65					70					75					80
Ser	Ile	Glu	Ser	Leu	Asn	Ala	Ser	Cys	Lys	Gln	Leu	Arg	Pro	Leu	Ser
				85				90						95	
Lys	Glu	Arg	Glu	Arg	Leu	Asn	Lys	Leu	Asn	Ser	Asn	Ser	Leu	Leu	Ala
			100					105					110		
Gln	Ser	Lys	Glu	Val	Trp	Glu	Arg	Lys	Arg	Ala	Leu	Glu	Lys	Ser	Asn
		115				120						125			
His	Gln	Leu	Val	Trp	Asn	Cys	Glu	Gln	Met	His	Asn	Asp	Phe	Ala	Phe
		130				135						140			
Cys	Ala	Ser	Arg	Ala	Ser	Tyr									
145					150										

<210>816

<211>464

<212>PRT

<213>Chlamydia pneumoniae

<400>816

Ala	Met	Asn	Phe	Lys	Leu	Pro	Val	Tyr	His	Ile	Gly	Leu	Thr	Lys	Ala
1				5				10						15	
Glu	Asn	Asn	Thr	Ile	Lys	Ile	Ala	Ile	Leu	Gln	Lys	Thr	Cys	Lys	Gly
			20					25					30		
Trp	Ile	Val	Cys	His	Cys	Glu	Gln	Ile	Pro	Glu	Gly	Lys	Thr	Trp	Ser
		35				40						45			
Leu	Pro	Lys	Lys	Tyr	Phe	Ala	Ala	Pro	Thr	Thr	Phe	Ser	Leu	Gln	Gly
50					55						60				
Ser	Asp	Ile	Leu	Val	Lys	Ser	Ser	Ser	Ser	Ser	Ser	Leu	Lys	Asn	Arg
65					70					75					80

Asn Ile Leu Lys Val Ala Leu Thr Asn Leu Glu Ala Ser Leu Ala Leu
 85 90 95
 Pro Trp Glu Ser Leu Ile Val Gln Pro Gln Leu Gly Lys Pro Thr Asp
 100 105 110
 Arg Gly Glu Thr Pro Leu Thr Leu Trp Ile Ala Gln Lys Asn Thr Leu
 115 120 125
 Lys Lys Glu Leu Ser Phe Leu Ser Gln Ala Gln Ile Phe Pro Asp Lys
 130 135 140
 Leu Ser Cys Arg Ala Ala Asp Ile Phe Phe Leu Ala Glu Gln Ser Pro
 145 150 155 160
 Leu Lys Ser Leu Pro Ala Tyr Leu Leu Ile Tyr Gly Gly Ser Glu Glu
 165 170 175
 Val Thr Cys Ile Phe Val Lys Asn His Ala Ile Ala Val Ala Arg Ser
 180 185 190
 Phe Ser Asn His Ser Thr Lys Lys Ser Cys Asp Asp Ile His Ala Thr
 195 200 205
 Leu Gln Tyr Ile Gln Glu Thr Phe Pro Gln Thr Val Leu Pro Ala Ile
 210 215 220
 His Val Ala Gln Ile Ser Pro Asn Leu Gln Xas Ile Leu Glu Gln Lys
 225 230 235 240
 Leu Ser Leu Pro Leu Val Val Cys Gln Ser Met Thr Tyr Gly Val Glu
 245 250 255
 Asp Glu Asp Trp Glu Ile Tyr Gly Asp Thr Ile Ala Ala Ala His His
 260 265 270
 Gly Ala Ser Arg Arg Pro Leu Thr Phe Pro Tyr Asp Ala Thr Ser Val
 275 280 285
 Ser Pro Ala Ala Gln Lys His Trp Leu Leu Arg Ser Ser Leu Leu Ile
 290 295 300
 Gly Lys Tyr Ala Leu Met Ala Thr Val Val Val Ser Leu Gly Ser Val
 305 310 315 320
 Leu Lys Leu Lys Ser Leu Ser Ser Ser Ala Ser Asn His Phe Ala Phe
 325 330 335
 Ala Cys Pro Glu Glu Gly Val Leu Pro Arg Ser Leu Lys Ala Ala Glu
 340 345 350
 Lys Thr Val Lys Ala Ile Gly Lys Lys Asn Ser Ala Ser Asn Tyr Pro
 355 360 365
 Leu Leu Pro Thr Ile Pro Thr Ser Glu Gln Thr Leu Lys Phe Leu Leu
 370 375 380
 Ala Leu Gly Lys Ser Ser Pro Ser Ile Lys Phe Ser Tyr Phe Ser Tyr
 385 390 395 400
 Thr Met Thr Ser Tyr Pro Ser Lys Asp Asn Pro Ser Leu Pro Tyr Ser
 405 410 415
 Ala Leu Val Glu Val Lys Gly Gln Gly Gln Pro Glu Asp Ile Pro Gln
 420 425 430
 Phe Leu Lys Lys Ile Ser Ser His Pro Lys Leu Gln His Val Ser Glu
 435 440 445
 Ser Leu Glu Asp Gln Arg Ser Phe Lys Leu Gln Phe Thr Leu Ser Ser
 450 455 460

<210>817

<211>130

<212>PRT

<213>Chlamydia pneumoniae

<400>817

Met Ala Ala Pro Ile Phe Ile Lys Asn Ile Leu Leu Arg Ser Ser Ile
 1 5 10 15
 Val Tyr Ala Pro Leu Ala Gly Phe Ser Asp Tyr Pro Tyr Arg Cys Met
 20 25 30
 Ser Ala Leu Tyr Gln Pro Gly Leu Met Phe Cys Glu Met Val Lys Val
 35 40 45
 Glu Gly Ile Leu Tyr Ala Pro Glu Arg Thr Ser Lys Leu Leu Asp Tyr
 50 55 60
 Asn Glu Asn Met Arg Pro Ile Gly Ala Gln Leu Cys Gly Ser Asn Pro
 65 70 75 80
 Glu Thr Ser Gly Glu Ala Ala Lys Ile Leu Glu Gly Leu Gly Phe Asp

85 90 95
 Leu Ile Asp Leu Asn Cys Gly Cys Pro Thr Asp Lys Ile Thr Lys Asp
 100 105 110
 Gly Ser Gly Ser Gly Leu Phe Glu Asp Ala Arg Ala Tyr Trp Glu Asp
 115 120 125
 Phe Arg
 130
 <210>818
 <211>235
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>818
 Ile Val Asp Val Leu Gln Ile Lys Ser Pro Lys Met Ala Val Gly Gln
 1 5 10 15
 Val Phe Leu Lys Thr Pro Glu Leu Ile Gly Arg Ile Leu Asp Lys Ile
 20 25 30
 Ile Asp Ser Val Ser Ile Pro Val Thr Val Lys Ile Arg Ser Gly Trp
 35 40 45
 Asp Met Glu His Ile Asn Val Glu Asp Thr Val Arg Ile Ile Arg Asp
 50 55 60
 Ala Gly Ala Ser Ala Val Phe Val His Gly Arg Thr Arg Ala Gln Gly
 65 70 75 80
 Tyr His Gly Pro Ser Lys Gln Glu Tyr Ile Ser Arg Ala Lys Ala Ala
 85 90 95
 Ala Gly Lys Glu Phe Pro Val Phe Gly Asn Gly Asp Ile Phe Ser Pro
 100 105 110
 Glu Ala Ala Gln Ala Met Leu Thr Thr Gly Cys Asp Gly Val Leu Val
 115 120 125
 Ala Arg Gly Thr Leu Gly Ala Pro Trp Ile Gly Lys Gln Ile Gln Asp
 130 135 140
 Tyr Leu Thr Thr Gly Ser Tyr Glu Lys Ile Pro Phe Ile Lys Arg Lys
 145 150 155 160
 Ala Ala Phe Leu Glu His Met Arg Leu Val Glu Asp Tyr Tyr Gln Ser
 165 170 175
 Glu Thr Lys Phe Leu Ser Glu Thr Arg Lys Leu Cys Gly His Tyr Leu
 180 185 190
 Ile Ser Ala Ala Lys Val Arg Phe Leu Arg Ser Ser Leu Ala Lys Ala
 195 200 205
 Thr Ser Tyr Gln Glu Val Tyr Gln Leu Val Asn Asp Tyr Glu Glu Ala
 210 215 220
 Asp Asp Ser Ser Leu Glu Thr Phe Val Lys Cys
 225 230 235
 <210>819
 <211>827
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>819
 Met Lys Lys Ser Leu Ile Ile Val Glu Ser Pro Ala Lys Ile Lys Thr
 1 5 10 15
 Leu Gln Lys Leu Leu Gly Ser Glu Phe Val Phe Ala Ser Ser Ile Gly
 20 25 30
 His Ile Val Asp Leu Pro Ala Lys Glu Phe Gly Ile Asp Val Asp His
 35 40 45
 Asp Phe Glu Pro Gln Tyr Gln Val Leu Pro Asp Lys Gln Glu Val Ile
 50 55 60
 Asn His Ile Arg Lys Leu Ala Ala Lys Cys Glu Lys Val Tyr Leu Ser
 65 70 75 80
 Pro Asp Pro Asp Arg Glu Gly Glu Ala Ile Ala Trp His Ile Ala Asn
 85 90 95
 Gln Leu Pro Asp Ser Pro Leu Ile Gln Arg Val Ser Phe Asn Ala Ile
 100 105 110
 Thr Lys Asn Ala Val Thr Glu Ala Leu Lys His Pro Arg Thr Ile Asp
 115 120 125
 Met Ala Leu Val Asn Ala Gln Gln Ala Arg Arg Leu Leu Asp Arg Ile

130 135 140
 Val Gly Tyr Lys Ile Ser Pro Ile Leu Ser Arg Lys Leu Gln Gln Arg
 145 150 155
 Ser Gly Ile Ser Ala Gly Arg Val Gln Ser Val Ala Leu Lys Leu Val
 165 170 175
 Val Asp Arg Glu Lys Ala Ile Asp Ala Phe Val Pro Val Glu Tyr Trp
 180 185 190
 Asn Leu Arg Val Leu Met Gln Asp Pro Lys Thr Thr Lys Thr Phe Trp
 195 200 205
 Ala His Leu Tyr Ala Val Gln Gly Lys Lys Trp Glu Lys Glu Ile Pro
 210 215 220
 Glu Gly Lys Thr Glu Asn Asp Val Leu Leu Ile Asn Ser Glu Glu Lys
 225 230 235 240
 Ala Arg His Tyr Ala Glu Leu Leu Glu Lys Ser Ser Tyr Thr Ile Thr
 245 250 255
 Arg Val Glu Ala Lys Ala Lys Arg Arg Phe Ala Pro Pro Pro Phe Ile
 260 265 270
 Thr Ser Thr Leu Gln Gln Glu Ala Ser Arg His Phe Arg Phe Ser Ala
 275 280 285
 Ser Arg Thr Met Ser Ile Ala Gln Thr Leu Tyr Glu Gly Val Asp Leu
 290 295 300
 Asp Ser Glu Asp Ser Thr Gly Leu Ile Thr Tyr Met Arg Thr Asp Ser
 305 310 315 320
 Val Arg Val Asp Pro Glu Ala Leu Thr Thr Val Arg Glu Tyr Ile Gln
 325 330 335
 Gln Thr Phe Gly Lys Glu Tyr Leu Pro Glu Lys Ala Asn Val Tyr Thr
 340 345 350
 Thr Lys Lys Met Thr Gln Asp Ala His Glu Ala Ile Arg Pro Thr Asp
 355 360 365
 Ile Asn Leu Thr Pro Asp Lys Leu Lys Asn Lys Leu Ser Asp Asp Gln
 370 375 380
 Phe Lys Val Tyr Asn Leu Ile Trp Lys Arg Phe Val Ala Ser Gln Ile
 385 390 395 400
 Thr Pro Ala Ile Tyr Asp Thr Leu Ala Val Gln Ile Thr Thr Asp Thr
 405 410 415
 Glu Ile Asp Leu Arg Ala Ser Gly Ser Leu Leu Lys Phe Lys Gly Phe
 420 425 430
 Leu Ala Val Tyr Glu Glu Lys Gln Asp Asp Glu Asn Asp Gln Glu Glu
 435 440 445
 Asp His Pro Leu Pro Pro Leu His Ala Gln Asp Ala Leu Ile Lys Glu
 450 455 460
 Glu Val Ser Gln Glu Gln Ala Phe Thr Lys Pro Leu Pro Arg Phe Thr
 465 470 475 480
 Glu Ala Ser Leu Val Lys Glu Leu Glu Lys Ser Gly Ile Gly Arg Pro
 485 490 495
 Ser Thr Tyr Ala Thr Ile Met Asn Lys Ile Gln Ser Arg Glu Tyr Thr
 500 505 510
 Thr Lys Glu Asn Gln Arg Leu Arg Pro Thr Glu Leu Gly Lys Ile Ile
 515 520 525
 Ser Gln Phe Leu Glu Thr Asn Phe Pro Arg Ile Met Asp Ile Gly Phe
 530 535 540
 Thr Ala Leu Met Glu Asp Glu Leu Glu Leu Ile Ala Asp Asn Lys Lys
 545 550 555 560
 Pro Trp Lys Leu Leu Leu Gln Glu Phe Trp Thr Thr Phe Leu Pro Val
 565 570 575
 Val Ile Thr Ala Glu Lys Glu Ala Val Ile Pro Arg Ile Leu Thr Asn
 580 585 590
 Ile Glu Cys Ser Lys Cys His Lys Gly Lys Leu Val Lys Ile Trp Ser
 595 600 605
 Lys Asn Ser Tyr Phe Tyr Gly Cys Ser Glu Tyr Pro Glu Cys Asp Tyr
 610 615 620
 Arg Thr Ser Glu Glu Glu Leu Ala Phe Asn Lys Glu Asp Tyr Ala Glu
 625 630 635 640
 Asp Thr Pro Trp Asp Ser Pro Cys Pro Leu Cys Gly Gly Val Met Lys

<212>PRT

<213>Chlamydia pneumoniae

<400>821

Ile Phe Lys Gly Asn Ser Lys Arg Leu Tyr Asp Ser Ser Ala Leu Asp
 1 5 10 15
 Met Phe Gln Gln Lys Gln Lys Leu Ser Leu Lys Tyr Leu Pro Ser Leu
 20 25 30
 Arg Met Gln Gln Gly Leu Gln Met Leu Gln Ser Pro Leu Thr Glu Leu
 35 40 45
 Ser Ser Tyr Val Val Gln Glu Ile Ile Asp Asn Pro Phe Phe Asp Leu
 50 55 60
 Ser Ser Leu Glu Glu Glu Glu Trp Ser Pro Cys Tyr Arg Pro Thr Asn
 65 70 75 80
 Ser Thr Phe Ser Tyr Leu Asn Gln Thr Pro Gly Pro Gln Glu Ser Leu
 85 90 95
 Tyr Thr Arg Leu Leu Pro Gln Ile Glu Glu Ala Phe Ser Thr Ala Glu
 100 105 110
 Glu Arg Phe Ile Ala His Gln Ile Ala Gly Asn Leu Ser Asp Glu Gly
 115 120 125
 Leu Phe Leu Arg Asn Pro Glu Asp Phe Ala Gln Glu Leu Glu Leu Pro
 130 135 140
 Leu Glu Lys Ile His Lys Val Trp Asp Thr Ile Gln Asn Leu Ser Pro
 145 150 155 160
 Glu Gly Ile Ala Ser Pro Ser Leu Gln Ser Tyr Trp Met Lys Leu Leu
 165 170 175
 Arg Asn Ser Ser His Gln Gln Ala Tyr Ser Ile Val Arg Asp Cys Tyr
 180 185 190
 Pro Leu Met Thr Asn Cys Glu Phe Ala Pro Ile Met Lys Lys Phe Ser
 195 200 205
 Leu Ser Leu Ser Glu Leu Arg Asn Ile Leu Lys Lys Ala Leu Gly Ser
 210 215 220
 Ile Pro Trp Cys Pro Ala Ala Ala Cys Thr Val Lys Pro Met Val Ser
 225 230 235 240
 Thr Pro Leu Pro Asp Ile Tyr Leu Phe Tyr Ser Ser Gly Ser Trp Lys
 245 250 255
 Ile Glu Val Ser Thr Arg Gly Leu Pro Ser Ile Lys Leu Asn Lys Glu
 260 265 270
 Thr Phe His Phe Tyr Glu His Leu Pro Lys Glu Glu Gln Lys Asn Leu
 275 280 285
 Ser Gln Gln Ile Leu Ser Ala Lys Trp Leu Ile Lys Asn Leu Arg Lys
 290 295 300
 Arg Glu Gln Thr Leu Leu Gln Val Met Glu Thr Leu Leu Pro Lys Gln
 305 310 315 320
 Glu Asp Phe Leu Leu Gly Lys Ile Pro Ala Pro Tyr Pro Leu Gly Ile
 325 330 335
 Lys Asp Leu Ala Glu Asp Leu Ser Phe His Glu Ser Thr Ile Phe Arg
 340 345 350
 Ala Ile Glu Asn Lys Ala Val Ala Ala Pro Ile Gly Ile Phe Pro Leu
 355 360 365
 Lys His Leu Phe Pro Arg Gly Ile His Gln Asp Ser Ser His Ser Lys
 370 375 380
 Glu Asn Val Leu Gln Trp Ile Arg Gln Trp Ile Ala Thr Glu Gln Thr
 385 390 395 400
 Pro Leu Ser Asp Ser Val Ile Ser Asp Arg Ile Thr Ala Lys Gly Ile
 405 410 415
 Pro Cys Ala Arg Arg Thr Val Ala Lys Tyr Arg Ala Gln Leu Lys Ile
 420 425 430
 Leu Pro Ala Asn Lys Arg Lys Lys Leu Phe Tyr Ile Arg Ser Ser Asn
 435 440 445
 Ser His Phe Arg Asp Arg Gln Phe
 450 455

<210>822

<211>644

<212>PRT

<213>Chlamydia pneumoniae

<400>822

Lys Leu Gly Leu Ile Met Thr Cys Ile Ser Glu Leu Asn Glu Ala Gln
1 5 10 15
Arg Lys Ala Val Thr Ala Pro Leu Asn Pro Val Leu Val Leu Ala Gly
30 35 40 45
Ala Gly Ala Gly Lys Thr Arg Val Val Thr Tyr Arg Ile Leu His Leu
50 55 60
Ile Asn Gln Gly Ile Ala Pro Arg Glu Ile Leu Ala Val Thr Phe Thr
65 70 75 80
Asn Lys Ala Ala Arg Glu Lys Glu Arg Ile Val Asn Gln Cys Ala
85 90 95
Ser Thr Asn Glu Phe Asp Val Pro Met Val Cys Thr Phe His Ser Leu
100 105 110
Gly Val Phe Ile Leu Arg Arg Ser Ile Asn Leu Leu Asn Arg Glu Asn
115 120 125
Asn Phe Thr Ile Tyr Asp Gln Ser Asp Ala Glu Lys Leu Ile Lys His
130 135 140
Ala Leu Gln Gln His Asn Leu Lys Pro Asn Leu Ala Ser Lys Ile Gln
145 150 155 160
Ala His Val Ser Gln Ala Lys Asn Arg Leu Leu Phe Pro Glu Asp Leu
165 170 175
Asp Pro Asn Asp Tyr Ile Asp Pro Val Val Ser Ile Tyr Gln Glu Tyr
180 185 190
Gln Lys Lys Leu Ile Glu Ala Asn Ala Leu Asp Phe Asp Asp Leu Leu
195 200 205
Phe Leu Thr Val Arg Leu Leu Arg Glu Ser Pro Glu Ala Gln Glu Leu
210 215 220
Tyr Asn Gln Leu Trp Lys Ala Leu Leu Ile Asp Glu Tyr Gln Asp Thr
225 230 235 240
Asn His Ala Gln Tyr Thr Leu Met Gln Leu Leu Ser Lys Gln His Arg
245 250 255
Asn Val Phe Ala Val Gly Asp Pro Asp Gln Ser Ile Tyr Ser Trp Arg
260 265 270
Gly Ala Asn Ile His Asn Ile Leu Asn Phe Glu Asn Asp Tyr Pro Asn
275 280 285
Ala Lys Val Leu Cys Leu Glu Glu Asn Tyr Arg Ser Tyr Gly Asn Ile
290 295 300
Leu Asn Ala Ala Asn Ala Leu Ile Lys Asn Asn Ala Ser Arg Leu Glu
305 310 315 320
Lys Glu Leu Arg Ser Val Lys Gly Pro Gly Glu Lys Ile Arg Leu Phe
325 330 335
Leu Gly Ser Thr Asp Arg Glu Glu Ala Asp Phe Val Ala Ala Glu Ile
340 345 350
Leu Gln Leu His Arg Val Gly Asn Ile Lys Leu Arg Asp Ile Cys Ile
355 360 365
Phe Tyr Arg Thr Asn Ser Gln Ser Arg Thr Phe Glu Asp Ala Leu Leu
370 375 380
Arg Arg Arg Ile Pro Tyr Glu Ile Ile Gly Gly Leu Ser Phe Tyr Lys
385 390 395 400
Arg Lys Glu Ile Gln Asp Ile Leu Ala Phe Leu Arg Ile Phe Ile Ser
405 410 415
Lys Ser Asp Ile Val Ala Phe Asp Arg Thr Val Asn Leu Pro Lys Arg
420 425 430
Gly Ile Gly Ser Thr Thr Ile Phe Ala Leu Thr Gln Tyr Ala Ile Ala
435 440 445
Gln Gly Leu Pro Ile Leu Lys Ala Cys Gln Gln Ala Leu Asp Thr Lys
450 455 460
Asp Val Lys Leu Ser Lys Lys Gln Gln Glu Gly Leu Gln Glu Tyr Leu
465 470 475 480
Ala Leu Phe Pro Gln Ile Glu His Ala Tyr Asn Thr Leu Ser Leu Arg
485 490 495
Asp Phe Ile Glu Ser Val Val Arg Ile Thr Gly Tyr Leu Glu Ile Leu

Lys Glu Asp Ala Asp Thr Phe Lys Asp Arg Lys Ser Asn Leu Glu Glu
 500 505 510
 Leu Tyr His Lys Ala Leu Glu Ser Glu Gln Gln Asn Pro Lys Thr His
 515 520 525
 Leu Glu Leu Phe Leu Asp Asp Leu Ala Leu Lys Gly Ser Asp Asp Asp
 530 535 540
 Leu Asn Leu Thr Ala Asp Arg Val Asn Leu Met Thr Leu His Asn Gly
 545 550 555 560
 Lys Gly Leu Glu Phe Arg Val Ser Phe Leu Val Gly Leu Glu Glu Gln
 565 570 575
 Leu Leu Pro His Ala Asn Ser Leu Gly Gly Thr Tyr Glu Asn Ile Glu
 580 585 590
 Glu Glu Arg Arg Leu Cys Tyr Val Gly Ile Thr Arg Ala Gln Asp Leu
 595 600 605
 Leu Tyr Leu Thr Ala Ala Gln Val Arg Ser Leu Trp Gly Thr Val Arg
 610 615 620
 Met Met Lys Pro Ser Arg Phe Leu Lys Glu Ile Pro Lys Asp Tyr Met
 625 630 635 640
 Ile Gln Val Arg

<210>B23

<211>236

<212>PRT

<213>Chlamydia pneumoniae

<400>823

Met Gln Asn Ala Thr Ile Asp Gln Leu Pro Val Ser Trp Gln Glu Gln
 1 5 10 15
 Leu Pro Leu Cys Trp Arg Glu Gln Leu Lys Glu Glu Trp Ser Lys Pro
 20 25 30
 Tyr Met Gln Gln Leu Leu Ile Phe Leu Lys Gln Glu Tyr Lys Glu His
 35 40 45
 Thr Val Tyr Pro Glu Glu Asn Cys Val Phe Ser Ala Leu Arg Ser Thr
 50 55 60
 Pro Phe Asp Gln Val Arg Val Val Ile Leu Gly Gln Asp Pro Tyr Pro
 65 70 75 80
 Gly Lys Gly Gln Ala His Gly Leu Ser Phe Ser Val Pro Glu Gly Gln
 85 90 95
 Arg Leu Pro Pro Ser Leu Ile Asn Ile Phe Arg Glu Leu Lys Thr Asp
 100 105 110
 Leu Gly Ile Glu Asn His Lys Gly Cys Leu Gln Ser Trp Ala Asn Gln
 115 120 125
 Gly Ile Leu Leu Leu Asn Thr Val Leu Thr Val Arg Ala Gly Glu Pro
 130 135 140
 Phe Ser His Ala Gly Lys Gly Trp Glu Leu Phe Thr Asp Ala Ile Val
 145 150 155 160
 Thr Lys Leu Ile Gln Glu Arg Thr His Ile Ile Phe Val Leu Trp Gly
 165 170 175
 Ala Ala Ala Arg Lys Lys Cys Glu Leu Leu Phe Asn Ser Lys His Gln
 180 185 190
 His Ala Val Leu Ser Ser Pro His Pro Ser Pro Leu Ala Ala His Arg
 195 200 205
 Gly Phe Phe Gly Cys Ser His Phe Ser Lys Ile Asn Tyr Leu Leu Asn
 210 215 220
 Lys Leu Asn Lys Pro Met Ile Asn Trp Lys Leu Pro
 225 230 235

<210>824

<211>206

<212>PRT

<213>Chlamydia pneumoniae

<400>824

Met Lys Ile Val Ile Ala Ser Ser His Gly Tyr Lys Ile Arg Glu Thr
 1 5 10 15
 Lys Thr Phe Leu Lys Arg Leu Gly Asp Phe Asp Ile Phe Ser Leu Ser
 20 25 30

WO 9927115
 Asp Phe Pro Asp Tyr Lys Leu Pro Gln Glu Gln Glu Asp Ser Ile Thr
 35 40 45
 Ala Asn Ala Leu Thr Lys Gly Ile His Ala Ala Asn His Leu Gly Cys
 50 55 60
 Trp Val Ile Ala Asp Asp Thr Met Leu Arg Val Pro Ala Leu Asn Gly
 65 70 75 80
 Leu Pro Gly Pro Leu Ser Ala Asn Phe Ala Gly Val Gly Ala Tyr Asp
 85 90 95
 Lys Asp His Arg Lys Lys Leu Leu Asp Leu Met Ser Ser Leu Glu Ser
 100 105 110
 Leu Val Asp Arg Ser Ala Tyr Phe Glu Cys Cys Val Val Leu Val Ser
 115 120 125
 Pro Asn Gln Glu Ile Phe Lys Thr Tyr Gly Ile Cys Glu Gly Tyr Ile
 130 135 140
 Ser His Gln Glu Lys Gly Ser Ser Gly Phe Gly Tyr Asp Pro Ile Phe
 145 150 155 160
 Val Lys Tyr Asp Tyr Lys Gln Thr Phe Ala Glu Leu Ser Glu Asp Val
 165 170 175
 Lys Asn Gln Val Ser His Arg Ala Lys Ala Leu Gln Lys Leu Ala Pro
 180 185 190
 His Leu Gln Ser Leu Phe Glu Lys His Leu Leu Thr Arg Asp
 195 200 205

<210>825

<211>424

<212>PRT

<213>Chlamydia pneumoniae

<400>825

Leu Met Phe Phe Gln Phe Leu Ser Phe Thr Met Lys Lys Ile Phe Tyr
 1 5 10 15
 Ser Phe Val Leu Leu Ser Cys Ile Phe Pro Tyr Val Gly Cys Ala Gln
 20 25 30
 Val Phe Val Gly Leu Asp Arg Ile Phe Ser Glu Gly Glu Tyr Thr Arg
 35 40 45
 Cys Ile Gln Gly Lys Lys Ile Ala Leu Ile Ser His Ser Ala Ala Ile
 50 55 60
 Asn Ser Arg Gly Gln Asp Ala Leu Ser Val Phe Tyr Ser Arg Lys His
 65 70 75 80
 Asp Cys Thr Val Glu Ile Leu Cys Thr Leu Glu His Gly Tyr Tyr Gly
 85 90 95
 Ala Thr Pro Thr Glu Thr Val Gly Asn Gln Pro Ser Arg Tyr Pro Asn
 100 105 110
 Leu Arg Ser Val Ser Leu Tyr Gly Val Lys Glu Val Pro Lys Glu Val
 115 120 125
 Ala Glu His Cys Asp Val Phe Val Tyr Asp Val Gln Asp Ile Gly Val
 130 135 140
 Arg Ser Tyr Ser Phe Val Thr Val Leu Met Gln Ile Val Lys Ala Ser
 145 150 155 160
 Glu Arg Tyr Gly Lys Gln Leu Ile Val Leu Asp Arg Pro Asn Pro Met
 165 170 175
 Gly Gly Arg Ile Val Asp Gly Pro Leu Pro Asn Pro Thr Thr Ser Gly
 180 185 190
 Ser Leu Ala Ile Pro Tyr Cys Tyr Gly Met Thr Pro Gly Glu Leu Ala
 195 200 205
 Leu Phe Phe Lys Lys Thr Tyr Ala Pro Asn Ala Asn Val Val Val Ile
 210 215 220
 Pro Met Lys Gly Trp Asn Arg Ser Met Thr Phe Asp Glu Thr Gly Leu
 225 230 235 240
 Ile Trp Met Pro Thr Ser Pro Gln Met Pro Asp Pro Gln Ser Pro Phe
 245 250 255
 Phe Tyr Ala Ala Thr Gly Ile Leu Gly Ala Leu Ser Val Ala Ser Ile
 260 265 270
 Gly Val Gly Tyr Thr Leu Pro Phe Lys Val Leu Gly Ala Pro Trp Met
 275 280 285
 Asp Gly Glu Lys Val Ala Asp Glu Leu Asn Arg Met Lys Leu Pro Gly

290 295 300
 Val Leu Phe Leu Pro Phe Phe Tyr Glu Pro Phe Phe Gly Lys Tyr Lys
 305 310 315 320
 Met Glu Met Cys Ser Gly Val Leu Leu Val Leu Glu Asp Pro Lys Ile
 325 330 335
 Phe Tyr Pro Val Glu Thr Gln Cys Thr Ile Trp Gly Val Leu Lys Ala
 340 345 350
 Leu Tyr Pro Lys Gln Val Glu Gln Thr Leu Lys Ser Ile Glu Arg Ile
 355 360 365
 Pro Ala Arg Arg Ser Ser Ile Cys Asn Leu Phe Gly Gly Asp Glu Phe
 370 375 380
 Leu Ser Ile Ser His Lys Glu Arg Tyr Ile Val Trp Pro Leu Arg Arg
 385 390 395 400
 Leu Cys Lys Glu Ser Arg Glu Ser Phe His Gln Leu Arg Ser Ser Cys
 405 410 415
 Leu Leu Ser Glu Tyr Ala Glu Ser
 420
 <210>826
 <211>527
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>826
 Arg Val Val Trp Val Phe Lys Ser Gln Phe Glu Gly Leu Ser Ala Leu
 1 5 10 15
 Lys Arg Gly Val His Ala Leu Thr Lys Ala Val Thr Pro Ala Phe Gly
 20 25 30
 Pro Arg Gly Tyr Asn Val Val Ile Lys Lys Gly Lys Ala Pro Ile Val
 35 40 45
 Leu Thr Lys Asn Gly Ile Arg Ile Ala Lys Glu Ile Ile Leu Gln Asp
 50 55 60
 Ala Phe Glu Ser Leu Gly Val Lys Leu Ala Lys Glu Ala Leu Leu Lys
 65 70 75 80
 Val Val Glu Gln Thr Gly Asp Gly Ser Thr Thr Ala Leu Val Val Ile
 85 90 95
 Asp Ala Leu Phe Thr Gln Gly Leu Lys Gly Ile Ala Ala Gly Leu Asp
 100 105 110
 Pro Gln Glu Ile Lys Ala Gly Ile Leu Leu Ser Val Glu Met Val Tyr
 115 120 125
 Gln Gln Leu Gln Arg Gln Ala Ile Glu Leu Gln Ser Pro Lys Asp Val
 130 135 140
 Leu His Val Ala Met Val Ala Ala Asn His Asp Val Thr Leu Gly Thr
 145 150 155 160
 Val Val Ala Thr Val Ile Ser Gln Ala Asp Leu Lys Gly Val Phe Ser
 165 170 175
 Ser Lys Asp Ser Gly Ile Ser Lys Thr Arg Gly Leu Gly Lys Arg Val
 180 185 190
 Lys Ser Gly Tyr Leu Ser Pro Tyr Phe Val Thr Arg Pro Glu Thr Xaa
 195 200 205
 Asp Val Val Trp Glu Glu Ala Leu Val Leu Ile Leu Ser His Ser Leu
 210 215 220
 Val Ser Leu Ser Glu Glu Leu Ile Arg Tyr Leu Glu Leu Ile Ser Glu
 225 230 235 240
 Gln Asn Thr His Pro Leu Val Ile Ile Ala Glu Asp Phe Asp Gln Asn
 245 250 255
 Val Leu Arg Thr Leu Ile Leu Asn Lys Leu Arg Asn Gly Leu Pro Val
 260 265 270
 Cys Ala Val Lys Ala Pro Gly Ser Arg Glu Leu Arg Gln Val Val Leu
 275 280 285
 Glu Asp Leu Ala Ile Leu Thr Gly Ala Thr Leu Ile Gly Gln Glu Ser
 290 295 300
 Glu Asn Cys Glu Ile Pro Val Ser Leu Asp Val Leu Gly Arg Val Lys
 305 310 315 320
 Gln Val Met Ile Thr Lys Glu Thr Phe Thr Phe Leu Glu Gly Gly Gly
 325 330 335

Asp Ala Glu Ile Ile Gln Ala Arg Lys Gln Glu Leu Cys Leu Ala Ile
 340 345 350
 Ala Gly Ser Thr Ser Glu Ser Glu Cys Gln Glu Leu Glu Glu Arg Leu
 355 360 365
 Ala Ile Phe Ile Gly Ser Ile Pro Gln Val Gln Ile Thr Ala Asp Thr
 370 375 380
 Asp Thr Glu Gln Arg Glu Arg Gln Phe Gln Leu Glu Ser Ala Leu Arg
 385 390 395 400
 Ala Thr Lys Ala Ala Met Lys Gly Gly Ile Val Pro Gly Gly Gly Val
 405 410 415
 Ala Phe Leu Arg Ala Ala His Ala Ile Glu Val Pro Ala Asn Leu Ser
 420 425 430
 Ser Gly Met Thr Phe Gly Phe Glu Thr Leu Leu Gln Ala Val Arg Thr
 435 440 445
 Pro Leu Lys Val Leu Ala Gln Asn Cys Gly Arg Ser Ser Glu Glu Val
 450 455 460
 Ile His Thr Ile Leu Ser His Glu Asn Pro Arg Phe Gly Tyr Asn Gly
 465 470 475 480
 Met Thr Asp Thr Phe Glu Asp Leu Val Asp Ala Gly Ile Cys Asp Pro
 485 490 495
 Leu Ile Val Thr Thr Ser Ser Leu Lys Cys Ala Val Ser Val Ser Cys
 500 505 510
 Leu Leu Leu Thr Ser Ser Phe Phe Ile Ser Ser Arg Thr Lys Thr
 515 520 525

<210>827

<211>189

<212>PRT

<213>Chlamydia pneumoniae

<400>827

Ser Leu Val Arg Asn Asn Lys Arg Val Glu Glu Glu Val Phe Met Thr
 1 5 10 15
 Leu Ser Leu Val Gly Lys Glu Ala Pro Asp Phe Val Ala Gln Ala Val
 20 25 30
 Val Asn Gly Glu Thr Cys Thr Val Ser Leu Lys Asp Tyr Leu Gly Lys
 35 40 45
 Tyr Val Val Leu Phe Phe Tyr Pro Lys Asp Phe Thr Tyr Val Cys Pro
 50 55 60
 Thr Glu Leu His Ala Phe Gln Asp Ala Leu Gly Glu Phe His Thr Arg
 65 70 75 80
 Gly Ala Glu Val Ile Gly Cys Ser Val Asp Asp Ile Ala Thr His Gln
 85 90 95
 Gln Trp Leu Ala Thr Lys Lys Lys Gln Gly Gly Ile Glu Gly Ile Thr
 100 105 110
 Tyr Pro Leu Leu Ser Asp Glu Asp Lys Val Ile Ser Arg Ser Tyr His
 115 120 125
 Val Leu Lys Pro Glu Glu Glu Leu Ser Phe Arg Gly Val Phe Leu Ile
 130 135 140
 Asp Lys Gly Glu Ile Ile Arg His Leu Val Val Asn Asp Leu Pro Leu
 145 150 155 160
 Gly Arg Ser Ile Glu Glu Glu Leu Arg Thr Leu Asp Ala Leu Ile Phe
 165 170 175
 Phe Glu Thr Asn Gly Leu Val Cys Pro Ala Lys Leu Ala
 180 185

<210>828

<211>136

<212>PRT

<213>Chlamydia pneumoniae

<400>828

Arg Phe Asp Leu Ile Phe Gln Met Lys Phe Thr Val Ala Leu Phe Gly
 1 5 10 15
 Glu Ala Glu Lys Gly Ser Tyr Asp Thr Ala Tyr Phe Cys Arg Ser Leu
 20 25 30
 Val Asp Leu His Asn Tyr Leu Gly Asp Val Ser Ser Pro Gly Ile Thr
 35 40 45

Leu Ala Ile Lys Thr Leu Leu Ser Asp Tyr Asn Val Val Tyr Phe Arg
 50 55 60
 Val Arg Glu Glu Gly Tyr Cys Val Asp Ser Tyr Phe Phe Gly Leu His
 65 70 75 80
 Phe Leu Asn Thr Gln Thr Thr Leu Lys Asn Ile Ile Ala Ile Gly Leu
 85 90 95
 Pro Gly Val Gly Asn Gln His Ile Ile Glu Ala Ser Arg Ser Leu Cys
 100 105 110
 Gln Lys His Asn Ser Leu Leu Leu Phe Phe Asp His Asp Leu Tyr Asp
 115 120 125
 Leu Leu Thr Phe Asn Gln Pro Xaa
 130 135

<210>829

<211>205

<212>PRT

<213>Chlamydia pneumoniae

<400>829

Met His Ala Lys Leu Ser Phe Phe Ile Leu Leu Ser Leu Leu Phe Ser
 1 5 10 15
 Gly Ile Asp Cys Ser Arg Leu His Ala Ala Gly Arg Ser Pro Ser Leu
 20 25 30
 Gln Gly Val Leu Ala Glu Ile Glu Asp Ile Ser Ala Lys Leu Ala Ser
 35 40 45
 His Glu Val Glu Ile Val Met Leu Ser Glu Arg Leu Asp Glu Gln Asp
 50 55 60
 Ser Lys Phe Gln Lys Trp Thr Ala Ala Lys Pro Glu Thr Leu Ala Gln
 65 70 75 80
 Lys Ile Arg Glu Leu Glu Ser Asp Gln Lys Ala Leu Ala Lys Thr Leu
 85 90 95
 Ala Val Leu Thr Thr Ser Val Lys Asp Leu Gln Thr Asn Leu Gln Ser
 100 105 110
 Lys Leu Gln Glu Ile Gln Lys Asp His Arg Ala Leu Ala Gln Asp Leu
 115 120 125
 Arg Leu Val Arg Arg Ser Leu Ala Leu Val Asp Ser Ser Ser Pro
 130 135 140
 Gly Ala Tyr Ala Asp Phe Ser Asp Pro Val Pro Glu Asn Ile Tyr Ile
 145 150 155 160
 Val Arg Glu Gly Asp Ser Leu Ser Lys Ile Ala Lys Lys Tyr Lys Leu
 165 170 175
 Ser Val Thr Glu Leu Lys Lys Ile Asn Lys Leu Asp Ser Asp Ala Ile
 180 185 190
 Tyr Ala Gly Gln Arg Leu Cys Leu Gln Arg Asn Lys Gln
 195 200 205

<210>830

<211>192

<212>PRT

<213>Chlamydia pneumoniae

<400>830

Met Asn Ile His Ser Leu Trp Lys Leu Cys Thr Leu Leu Ala Leu Leu
 1 5 10 15
 Ala Leu Pro Ala Cys Ser Leu Ser Pro Asn Tyr Gly Trp Glu Asp Ser
 20 25 30
 Cys Asn Thr Cys His His Thr Arg Arg Lys Lys Pro Ser Ser Phe Gly
 35 40 45
 Phe Val Pro Leu Tyr Thr Glu Glu Asp Phe Asn Pro Asn Phe Thr Phe
 50 55 60
 Gly Glu Tyr Asp Ser Lys Glu Glu Lys Gln Tyr Lys Ser Ser Gln Val
 65 70 75 80
 Ala Ala Phe Arg Asn Ile Thr Phe Ala Thr Asp Ser Tyr Thr Ile Lys
 85 90 95
 Gly Glu Glu Asn Leu Ala Ile Leu Thr Asn Leu Val His Tyr Met Lys
 100 105 110
 Lys Asn Pro Lys Ala Thr Leu Tyr Ile Glu Gly His Thr Asp Glu Arg
 115 120 125

Gly Ala Ala Ser Tyr Asn Leu Ala Leu Gly Ala Arg Arg Ala Asn Ala
 130 135 140
 Ile Lys Glu His Leu Arg Lys Gln Gly Ile Ser Ala Asp Arg Leu Ser
 145 150 155 160
 Thr Ile Ser Tyr Gly Lys Glu His Pro Leu Asn Ser Gly His Asn Glu
 165 170 175
 Leu Ala Trp Gln Gln Asn Arg Arg Thr Glu Phe Lys Ile His Ala Arg
 180 185 190

<210>831

<211>431

<212>PRT

<213>Chlamydia pneumoniae

<400>831

Met Leu Arg Gln Leu Cys Phe Gln Val Phe Phe Phe Cys Phe Ala Ser
 1 5 10 15
 Leu Val Tyr Ala Glu Glu Leu Glu Val Val Val Arg Ser Glu His Ile
 20 25 30
 Thr Leu Pro Ile Glu Val Ser Cys Gln Thr Asp Thr Lys Asp Pro Lys
 35 40 45
 Ile Gln Lys Tyr Leu Ser Ser Leu Thr Glu Ile Phe Cys Lys Asp Ile
 50 55 60
 Ala Leu Gly Asp Cys Leu Gln Pro Thr Ala Ala Ser Lys Glu Ser Ser
 65 70 75 80
 Ser Pro Leu Ala Ile Ser Leu Arg Leu His Val Pro Gln Leu Ser Val
 85 90 95
 Val Leu Leu Gln Ser Ser Lys Thr Pro Gln Thr Leu Cys Ser Phe Thr
 100 105 110
 Ile Ser Gln Asn Leu Ser Val Asp Arg Gln Lys Ile His His Ala Ala
 115 120 125
 Asp Thr Val His Tyr Ala Leu Thr Gly Ile Pro Gly Ile Ser Ala Gly
 130 135 140
 Lys Ile Val Phe Ala Leu Ser Ser Leu Gly Lys Asp Gln Lys Leu Lys
 145 150 155 160
 Gln Gly Glu Leu Trp Thr Thr Asp Tyr Asp Gly Lys Asn Leu Ala Pro
 165 170 175
 Leu Thr Thr Glu Cys Ser Leu Ser Ile Thr Pro Lys Trp Val Gly Val
 180 185 190
 Gly Ser Asn Phe Pro Tyr Leu Tyr Val Ser Tyr Lys Tyr Gly Val Pro
 195 200 205
 Lys Ile Phe Leu Gly Ser Leu Glu Asn Thr Glu Gly Lys Lys Val Leu
 210 215 220
 Pro Leu Lys Gly Asn Gln Leu Met Pro Thr Phe Ser Pro Arg Lys Lys
 225 230 235 240
 Leu Leu Ala Phe Val Ala Asp Thr Tyr Gly Asn Pro Asp Leu Phe Ile
 245 250 255
 Gln Pro Phe Ser Leu Thr Ser Gly Pro Met Gly Arg Pro Arg Arg Leu
 260 265 270
 Leu Asn Glu Asn Phe Gly Thr Gln Gly Asn Pro Ser Phe Asn Pro Glu
 275 280 285
 Gly Ser Gln Leu Val Phe Ile Ser Asn Lys Asp Gly Arg Pro Arg Leu
 290 295 300
 Tyr Ile Met Ser Leu Asp Pro Glu Pro Gln Ala Pro Arg Leu Leu Thr
 305 310 315 320
 Lys Lys Tyr Arg Asn Ser Ser Cys Pro Ala Trp Ser Pro Asp Gly Lys
 325 330 335
 Lys Ile Ala Phe Cys Ser Val Ile Lys Gly Val Arg Gln Ile Cys Ile
 340 345 350
 Tyr Asp Leu Ser Ser Gly Glu Asp Tyr Gln Leu Thr Thr Ser Pro Thr
 355 360 365
 Asn Lys Glu Ser Pro Ser Trp Ala Ile Asp Ser Arg His Leu Val Phe
 370 375 380
 Ser Ala Gly Asn Ala Glu Glu Ser Glu Leu Tyr Leu Ile Ser Leu Val
 385 390 395 400
 Thr Lys Lys Thr Asn Lys Ile Ala Ile Gly Val Gly Glu Lys Arg Phe

405 410 415
 Pro Ser Trp Gly Ala Phe Pro Gln Gln Pro Ile Lys Arg Thr Leu
 420 425 430
 <210>832
 <211>194
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>832
 Asn Asp Thr Pro Leu Cys Thr Thr Gln Pro Gln Lys Gln Ala Lys Cys
 1 5 10 15
 Ser Pro Pro Gln Glu Asn Val Gln Lys Ala Leu Gln Lys Pro Ile Pro
 20 25 30
 Lys Val Ile Lys Thr Glu Pro Pro Lys Pro Ser Pro Ala Pro Thr Val
 35 40 45
 Ala Lys Lys Thr Thr Ala Thr Glu Lys Pro Pro Pro Ser Thr Thr Lys
 50 55 60
 Lys Asn Thr Gln Leu Ser Lys Thr Gln Leu Gln Thr Leu Ser Glu Val
 65 70 75 80
 Ala Gln Ala Leu Ser Leu His Val Asp Lys Ile Glu Lys Ser Glu Thr
 85 90 95
 Ser Leu Lys Asn Ile Ser Trp Pro Ser Thr Ala Gln Leu Thr Met His
 100 105 110
 Ser Glu Leu Lys Ala Thr Gln Glu Asp Glu Leu Cys Glu Leu Phe Arg
 115 120 125
 Thr His Ile Ala Leu Pro Ser Lys Gly Tyr Val Arg Ile Lys Leu Val
 130 135 140
 Leu Ser Pro Asn Gly Glu Ile Gln Glu Cys Ser Phe Leu Ser Glu Val
 145 150 155 160
 Ser Ala Ala Asp Lys Gln Leu Leu Thr Gln Arg Ile His Ala Leu Pro
 165 170 175
 Phe Gln Lys Phe Leu Glu Lys Tyr Lys Val Ser Lys Asn Ile Ile Phe
 180 185 190
 Ser Tyr

<210>833
 <211>135
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>833
 Met Lys Tyr Arg Phe Thr Glu Glu Ile Glu Glu Glu Pro Leu Val Asn
 1 5 10 15
 Leu Thr Pro Leu Ile Asp Ile Val Phe Val Ile Leu Met Ala Phe Ile
 20 25 30
 Val Ala Val Pro Leu Ile Lys Leu Asp Ser Ile Ala Leu Ala Pro Gly
 35 40 45
 Thr Gln Glu Gln Glu Val Leu Ser Ser Glu Asn Asp Ser Ile Ala Val
 50 55 60
 Ile Lys Val Phe Ala Asp His Ser Leu Thr Leu Asn Glu His Pro Ile
 65 70 75 80
 Thr Leu Gln Glu Leu Thr Val Arg Leu Thr Leu Leu His Lys Ala Tyr
 85 90 95
 Pro Glu Lys Thr Pro Leu Leu Leu Gln Asp Gly Glu Thr Ser Phe Arg
 100 105 110
 Thr Tyr Gln Asn Val Lys Asn Ala Ile Glu Ala Ala Gly Phe His Glu
 115 120 125
 Leu His Val Ala Leu Gln Asn
 130 135

<210>834
 <211>232
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>834
 Met Val His Phe Ser His Asn Pro Ile Ile Gln Ala Tyr Thr Glu Ala
 1 5 10 15

Asp Phe Phe Gly Lys Ser Ile Phe Phe Cys Leu Leu Ile Leu Ser Val
 20 25 30
 Cys Thr Trp Thr Val Leu His Gln Lys Leu Ala Ile Gln Lys Asn Phe
 35 40 45
 Leu Lys Ala Gly Lys Ser Leu Lys Asp Phe Leu Ile Lys Asn Arg His
 50 55 60
 Ala Pro Leu Ser Leu Asp Ile His Pro Glu Leu Ser Pro Phe Ala Asp
 65 70 75 80
 Leu Tyr Phe Thr Ile Lys Arg Gly Thr Leu Glu Leu Leu Asp Lys Asn
 85 90 95
 Arg Gln Ser Ala Pro Asp Arg Gly Pro Ile Leu Ser Ser Glu Asp Ile
 100 105 110
 Gln Ser Leu Glu Thr Leu Leu Gly Ala Ile Met Pro Lys Tyr Lys Ala
 115 120 125
 Leu Leu His Lys Asn Ser Phe Ile Pro Ala Thr Thr Ile Ser Leu Ala
 130 135 140
 Pro Phe Leu Gly Leu Leu Gly Thr Val Trp Gly Ile Leu Val Ala Phe
 145 150 155 160
 Thr His Ile Ser Ser Gly Ser Ser Gly Asn Ser Ala Ile Met Glu Gly
 165 170 175
 Leu Ala Thr Ala Leu Gly Thr Thr Ile Ile Gly Leu Phe Val Ala Ile
 180 185 190
 Pro Ser Leu Ile Ala Phe Asn Tyr Leu Lys Ala His Ser Ser Glu Leu
 195 200 205
 Ile Ser Glu Ile Glu Gln Thr Ala Tyr Leu Leu Leu Asn Ser Ile Glu
 210 215 220
 Val Lys Tyr Arg Asn Thr Asn Leu
 225 230

<210>835

<211>135

<212>PRT

<213>Chlamydia pneumoniae

<400>835

Leu Lys Ala Ile Ser Glu Gly Ile Ala Thr Lys Ser Pro Ile Ile Val
 1 5 10 15
 Val Pro Arg Ala Val Ala Ser Pro Ser Ile Met Ala Glu Phe Pro Leu
 20 25 30
 Leu Pro Glu Leu Met Trp Val Lys Ala Thr Lys Ile Pro His Thr Val
 35 40 45
 Pro Lys Ser Pro Arg Lys Gly Ala Lys Leu Ile Val Val Ala Gly Ile
 50 55 60
 Lys Leu Phe Leu Cys Lys Arg Ala Leu Tyr Phe Gly Met Met Ala Pro
 65 70 75 80
 Arg Ser Val Ser Lys Asp Trp Ile Ser Ser Glu Glu Arg Met Gly Pro
 85 90 95
 Arg Ser Gly Ala Asp Cys Arg Phe Leu Ser Lys Ser Ser Lys Val Pro
 100 105 110
 Arg Phe Ile Val Lys Tyr Lys Ser Ala Lys Gly Leu Ser Ser Gly Trp
 115 120 125
 Ile Ser Arg Asp Arg Gly Ala
 130 135

<210>836

<211>676

<212>PRT

<213>Chlamydia pneumoniae

<400>836

Ile Ile Gln Val Glu Asn Ser Phe Leu Arg Val Ala Thr Ser Leu Asp
 1 5 10 15
 Tyr Arg His Ser Asp Trp Gly Ser Arg Phe Thr Ala Ser Lys Gly Ser
 20 25 30
 His Ile Tyr Trp Lys Asn Pro Gly Glu Ile Gly Ser Pro Leu Lys Ile
 35 40 45
 Ser Trp Gln Leu Pro Lys Gly Phe Val Val Glu Glu Glu His Trp Pro
 50 55 60

Thr Pro Lys Val Phe Glu Glu Glu Gly Thr Thr Phe Phe Gly Tyr Glu
 65 70 75 80
 Asp Ser Ala Leu Ile Val Ala Asp Val Arg Ala Pro Glu Gly Tyr Thr
 85 90 95
 Pro Gly Gln Glu Val Glu Leu Arg Ala Gln Val Glu Trp Leu Ala Cys
 100 105 110
 Gly Asp Ser Cys Leu Pro Gly Asn Val Asp Leu Lys Leu Thr Leu Pro
 115 120 125
 Tyr Glu Glu Lys Glu Pro Ser Leu Tyr Pro Asp Thr His Ala Glu Phe
 130 135 140
 Thr Lys Thr Leu His Ala Gln Pro Arg Val Leu Glu Asn Asp His Ser
 145 150 155 160
 Val Gln Val Ala Gln Gly Lys Gly Asn Glu Ile Ile Leu Asn Ile Ser
 165 170 175
 Lys Lys Ile Asn Ala Thr Lys Ala Trp Phe Val Ser Glu Lys Ala Asp
 180 185 190
 Lys Leu Phe Ala Tyr Ala Glu Thr Ser Tyr Ser Gly Gly Thr Gly Thr
 195 200 205
 Ala Trp Arg Leu Lys Val Lys Asn Leu Ser Gly Val Gln Lys Asn Glu
 210 215 220
 Lys Leu His Gly Ile Leu Leu Leu Ala Asp His Thr Gly Arg Pro Val
 225 230 235 240
 Glu Ser Leu Thr Ile His Ser Glu Val Leu Gly Gln Thr Gly Ser Ala
 245 250 255
 Val Ala Gly Leu Ser Gln Tyr Ile Thr Ile Leu Ile Met Ala Phe Leu
 260 265 270
 Gly Gly Val Leu Leu Asn Ile Met Pro Cys Val Leu Pro Leu Val Thr
 275 280 285
 Leu Lys Val Tyr Gly Leu Ile Lys Ser Ala Gly Glu His Arg Ser Ser
 290 295 300
 Val Ile Ala Asn Gly Leu Trp Phe Thr Leu Gly Val Val Gly Cys Phe
 305 310 315 320
 Trp Gly Leu Ala Gly Val Ala Phe Ile Leu Lys Val Leu Gly His Asn
 325 330 335
 Ile Gly Trp Gly Phe Gln Leu Gln Glu Pro Met Phe Val Ala Thr Leu
 340 345 350
 Ile Ile Val Phe Phe Leu Phe Ala Leu Ser Ser Leu Gly Leu Phe Glu
 355 360 365
 Met Gly Thr Met Phe Ala Asn Leu Gly Gly Lys Leu Gln Ser Ser Glu
 370 375 380
 Met Lys Ser Ser Asn Asn Lys Ala Val Gly Ala Phe Phe Asn Gly Ile
 385 390 395 400
 Leu Ala Thr Leu Val Thr Thr Pro Cys Thr Gly Pro Phe Leu Gly Ser
 405 410 415
 Val Leu Gly Leu Val Met Ser Leu Ser Phe Leu Gln Gln Leu Leu Ile
 420 425 430
 Phe Thr Ala Ile Gly Leu Gly Met Ala Ser Pro Tyr Leu Val Phe Ser
 435 440 445
 Val Phe Pro Lys Met Leu Ser Val Leu Pro Lys Pro Gly Gly Trp Met
 450 455 460
 Ser Thr Phe Lys Gln Leu Thr Gly Phe Met Leu Leu Val Thr Val Thr
 465 470 475 480
 Trp Leu Val Trp Ile Phe Gly Ser Glu Thr Ser Thr Thr Ser Val Val
 485 490 495
 Val Leu Leu Gly Gly Leu Trp Leu Ala Gly Leu Gly Ala Trp Ile Leu
 500 505 510
 Gly Arg Trp Gly Thr Pro Val Ser Pro Lys Lys Gln Arg Val Cys Ala
 515 520 525
 Ser Leu Leu Phe Phe Ala Phe Leu Gly Gly Ala Ile Ser Val Ser Gly
 530 535 540
 Leu Ala Ser His Tyr Phe Ala Glu Pro Gln Gln Thr Val Ser Val Asn
 545 550 555 560
 Glu Asp Ser Leu Trp Gln Pro Phe Ser Leu Glu Lys Leu Ala Gln Leu
 565 570 575

Arg Ala Gln Gly Arg Pro Val Phe Val Asn Phe Thr Ala Lys Trp Cys
580 585 590
Leu Thr Cys Gln Met Asn Lys Pro Val Leu Tyr Gly Asp Ala Val Gln
595 600 605
Lys Met Phe Glu Thr His Gly Ile Val Thr Leu Glu Ala Asp Trp Thr
610 615 620
Arg Lys Asp Pro Gly Ile Thr Glu Glu Leu Ala Arg Leu Gly Arg Ala
625 630 635 640
Ser Val Pro Ser Tyr Val Tyr Tyr Pro Gly Asp Asn Ser Ala Pro Val
645 650 655
Val Leu Pro Xaa Lys Ile Thr Gln Asn Leu Leu Glu Asp Val Val Ser
660 665 670
Arg Phe Val Arg
675

<210>837

<211>261

<212>PRT

<213>Chlamydia pneumoniae

<400>837

Val Asp Leu Ala Asp Ala His Val His Leu Ser Asp Asp Ala Phe Glu
1 5 10 15
Glu Asp Ile Asn Ser Val Leu Gln Arg Ala Gln Asp Ser Gly Val Ser
20 25 30
Leu Val Val Asn Val Thr Thr Thr Glu Lys Glu Leu Asn Arg Ser Phe
35 40 45
Ala Tyr Ala Glu Arg Phe Pro Lys Ile Arg Phe Cys His Val Gly Gly
50 55 60
Thr Pro Pro Gln Asp Val Asp Gln Asp Ile Glu Glu Asp Tyr Arg Asn
65 70 75 80
Phe His Ala Ala Ala His Ser Lys Lys Leu Ala Ala Ile Gly Glu Val
85 90 95
Gly Leu Asp Tyr Cys Phe Ala Thr Glu Glu Gly Ile Ala Arg Gln Lys
100 105 110
Glu Val Leu Gln Arg Tyr Leu Ala Leu Ser Leu Glu Cys Glu Leu Pro
115 120 125
Leu Val Val His Cys Arg Gly Ala Phe Asn Asp Phe Phe Arg Met Leu
130 135 140
Asp Gln Tyr Tyr His Asn Asp Pro Arg Ser Arg Pro Gly Met Leu His
145 150 155 160
Cys Phe Thr Gly Thr Leu Glu Glu Ala Gln Glu Leu Ile Ser Arg Gly
165 170 175
Trp Phe Ile Ser Ile Ser Gly Ile Val Thr Phe Lys Asn Ala Gln Asp
180 185 190
Leu Arg Asp Leu Val Val Glu Leu Pro Leu Glu His Leu Leu Ile Glu
195 200 205
Thr Asp Ala Pro Phe Leu Ala Pro Val Pro Tyr Arg Gly Lys Lys Asn
210 215 220
Glu Pro Ala His Val Leu His Thr Ile Asn Ala Val Ala Asn Val Lys
225 230 235 240
Gly Met Phe Pro Gln Glu Leu Ala Ala Leu Ala Tyr Lys Asn Val Leu
245 250 255
Arg Phe Leu His Gly
260

<210>838

<211>297

<212>PRT

<213>Chlamydia pneumoniae

<400>838

Met Ser Arg His Glu Ile Cys Pro Glu Val Ser His Lys Lys Gly Lys
1 5 10 15
Tyr Tyr Ser Thr Phe Ile Phe Arg Cys Ile His Ser Leu Ala Gly Ile
20 25 30
Ala Phe Thr Phe Phe Leu Cys Glu His Leu Phe Thr Asn Met L u Ala
35 40 45

Ser Ser Tyr Phe Ser Gln Gly Lys Gly Phe Val Ala Met Val Asn Gly
 50 55 60
 Phe His Lys Ile Pro Gly Leu Lys Ile Ile Glu Val Ala Gly Leu Val
 65 70 75 80
 Leu Pro Phe Leu Cys His Ala Ile Ile Gly Ile Val Tyr Leu Phe Gln
 25 90 95
 Gly Lys Ser Asn Cys Tyr Ser Gly Asp Gly Ser Arg Pro His Leu Arg
 100 105 110
 Tyr Ala Lys Asn Tyr Ser Tyr Thr Trp Gln Arg Trp Thr Ala Trp Ile
 115 120 125
 Leu Leu Phe Gly Ile Ala Phe His Val Val His Leu Arg Phe Ile Arg
 130 135 140
 Tyr Pro Val His Val Asp Ile His Gly Thr Thr Tyr Tyr Ala Val Asp
 145 150 155 160
 Ile Gln Pro Ser Arg Tyr Asp Val Ile Val Arg Gly Thr Lys Gly Phe
 165 170 175
 Leu Thr Leu Asn Leu Pro Asn Thr Glu Ala Ser Ser Ile Glu Val Ser
 180 185 190
 Arg His Asp Leu Gly Gly Ala Asp Ala Ala Leu Leu Ser Glu Arg Asn
 195 200 205
 Ser Tyr Leu Leu Thr Pro Ser Ala Gly Thr Ala Phe Leu Tyr Val Val
 210 215 220
 Arg Asp Ala Leu Gly Ser Leu Phe Ile Ala Leu Leu Tyr Thr Ile Leu
 225 230 235 240
 Val Ile Ala Ala Ala Phe His Gly Phe Asn Gly Leu Trp Thr Phe Cys
 245 250 255
 Cys Arg Trp Gly Val Val Val Ser Leu Arg Met Gln Gly Val Leu Arg
 260 265 270
 Ile Val Cys Tyr Leu Ala Met Ile Val Val Thr Phe Met Gly Val Ser
 275 280 285
 Ala Val Trp Asn Leu Tyr Ser Val Ala
 290 295

<210>839

<211>626

<212>PRT

<213>Chlamydia pneumoniae

<400>839

Met Asp Glu Asn Arg Lys Val Ile Val Val Gly Gly Gly Leu Ala Gly
 1 5 10 15
 Leu Ser Ala Ala Met Gln Leu Ala Asn Leu Gly Ile Ile Val Glu Leu
 20 25 30
 Val Ser Leu Thr Lys Val Lys Arg Ser His Ser Val Cys Ala Gln Gly
 35 40 45
 Gly Ile Asn Ala Ala Leu Asn Leu Lys Pro Glu Glu Asp Ser Pro
 50 55 60
 Tyr Val His Ala Tyr Asp Thr Ile Lys Gly Gly Asp Phe Leu Ala Asp
 65 70 75 80
 Gln Pro Pro Val Leu Glu Met Cys Leu Ala Ala Pro Arg Ile Ile Lys
 85 90 95
 Met Leu Asp Asn Phe Gly Cys Pro Phe Asn Arg Gly Pro Ser Gly Asn
 100 105 110
 Leu Asp Val Arg Arg Phe Gly Gly Thr Leu Tyr His Arg Thr Val Phe
 115 120 125
 Cys Gly Ala Ser Thr Gly Gln Gln Leu Met Tyr Thr Leu Asp Glu Gln
 130 135 140
 Val Arg Arg Arg Glu His Ala Gly Arg Val Ile Lys Arg Glu Asn His
 145 150 155 160
 Glu Phe Val Arg Leu Val Thr Asp His Ser Gly Arg Ala Cys Gly Ile
 165 170 175
 Ile Leu Met Asn Leu Phe Asn Asn Arg Leu Glu Ile Leu Arg Gly Asp
 180 185 190
 Ala Val Ile Ile Ala Thr Gly Gly Pro Gly Val Ile Phe Lys Met Ser
 195 200 205
 Thr Asn Ser Thr Phe Cys Thr Gly Ala Ala Asn Gly Arg Leu Phe Leu

210	215	220
Gln Gly Met Ala Tyr	Ala Asn Pro Glu Phe Ile	Gln Ile His Pro Thr
225	230	235
Ala Ile Pro Gly Arg	Asp Lys Leu Arg Leu Ile	Ser Glu Ser Val Arg
245	250	255
Gly Glu Gly Gly Arg	Val Trp Val Pro Gly Asp	Ser Ser Lys Arg Ile
260	265	270
Val Phe Pro Asp Gly	Ser Glu Arg Pro Cys Gly	Glu Thr Gly Ala Pro
275	280	285
Trp Tyr Phe Leu Glu	Asp Met Tyr Pro Ala Tyr	Gly Asn Leu Val Ser
290	295	300
Arg Asp Val Gly Ala	Arg Ala Ile Leu Arg	Val Cys Glu Ala Gly Leu
305	310	315
Gly Ile Asp Gly Arg	Met Glu Ala Tyr Leu	Asp Val Thr His Leu Pro
325	330	335
Glu Lys Thr Arg His	Lys Leu Glu Val Val	Leu Asp Ile Tyr Lys Lys
340	345	350
Phe Thr Gly Glu Asp	Pro Asn Thr Val Pro	Met Arg Ile Phe Pro Ala
355	360	365
Val His Tyr Ser Met	Gly Gly Ala Trp Val	Asp Trp Pro Ala Ala Asp
370	375	380
Asp Pro Asp Arg Asp	Ser Arg Phe Arg Gln	Met Thr Asn Ile Pro Gly
385	390	395
Cys Phe Asn Cys Gly	Glu Ser Asp Phe Gln	Tyr His Gly Ala Asn Arg
405	410	415
Leu Gly Ala Asn Ser	Leu Leu Ser Cys Leu	Phe Ala Gly Leu Val Ser
420	425	430
Gly Asp Glu Ala Ser	Arg Phe Ile Glu Ala	Phe Gly Ala Ser Gln Ala
435	440	445
Thr Ser Ser Asp Phe	Asp Arg Ala Leu Gln	Gln Glu Lys Glu Glu Asn
450	455	460
Ala Arg Leu Leu Ser	Ala Ser Gly Lys Glu	Asn Ile Phe Val Leu His
465	470	475
Glu Glu Ile Ala Lys	Ile Met Val Arg Asn	Val Thr Val Lys Arg Asn
485	490	495
Asn Arg Asp Leu Gln	Glu Thr Met Asp Lys	Leu Lys Glu Phe Arg Glu
500	505	510
Arg Leu Lys Asn Val	Ser Val Leu Asp Ser	Ser Pro Phe Ala Asn Lys
515	520	525
Ser Phe His Phe Val	Arg Gln Met Gly Pro	Met Leu Glu Leu Ala Leu
530	535	540
Ala Ile Thr Lys Gly	Ala Leu Leu Arg Asn	Glu Phe Arg Gly Ser His
545	550	555
Tyr Lys Pro Glu Phe	Pro Glu Arg Asp Asp	Glu His Trp Leu Lys Thr
565	570	575
Thr Val Ala Val Tyr	Ala Pro Glu Glu Pro	Glu Ile Ser Tyr Leu Pro
580	585	590
Val Asp Thr Arg His	Val Ala Pro Thr Leu	Arg Asp Tyr Thr Lys Ser
595	600	605
Ser Thr Gly Lys Ile	Glu Leu Thr Asn Ile	Pro Asp Asn Ile Arg Leu
610	615	620
Pro Ile		

625
 <210>B4D
 <211>27D
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>24D

Leu Ile Ile Ser Val	Tyr Pro Tyr Arg	Lys Arg Glu Met	Met Glu Asn
1	5	10	15
Leu Glu Thr Phe	Ile Leu Lys Ile	Tyr Arg Gly Val	Pro Gly Lys Gln
20	25	30	
Tyr Trp Glu Ser	Phe Glu Leu Pro	Leu His Pro Gly	Glu Asn Val Ile
35	40	45	

Ser Ala Leu Met Glu Ile Glu Lys Arg Pro Val Asn Ile Leu Gly Glu
 50 55 60
 Lys Val Asn Pro Val Val Trp Glu Gln Gly Cys Leu Glu Glu Val Cys
 65 70 75 80
 Gly Ser Cys Ser Ile Leu Val Asn Gly Val Pro Arg Gln Ala Cys Thr
 85 90 95
 Ala Leu Ile Gln Glu Tyr Ile Asp Ala Thr Gln Ser Arg Glu Ile Val
 100 105 110
 Leu Ala Pro Leu Thr Lys Phe Pro Leu Ile Arg Asp Leu Ile Val Asp
 115 120 125
 Arg Ser Ile Met Phe Asp Asn Leu Glu Arg Ile Gln Gly Trp Val Ala
 130 135 140
 Ala Asp Ile Glu Gly Glu Thr Phe Gly Pro Gln Val Thr Gln Glu Gln
 145 150 155 160
 Gln Glu Leu Leu Tyr Ala Leu Ser Gln Cys Met Thr Cys Gly Cys Cys
 165 170 175
 Thr Glu Ala Cys Pro Gln Ile Asp Asn Lys Ser Asp Phe Ile Gly Pro
 180 185 190
 Ala Ala Ile Ser Gln Ala Arg Tyr Phe Asn Thr Tyr Pro Gly Asp Lys
 195 200 205
 Gln Ser Lys Lys Arg Trp Arg Ala Leu Met Gly Lys Gly Gly Ile Glu
 210 215 220
 Gly Cys Gly Gln Ala His Asn Cys Val Arg Val Cys Pro Lys Lys Leu
 225 230 235 240
 Pro Leu Thr Glu Ser Ile Ser Ala Val Gly Arg Glu Ile Ser Lys Phe
 245 250 255
 Ser Leu Arg Ser Leu Phe Ser Ala Leu Phe Lys Lys Lys Lys
 260 265 270

<210>841

<211>998

<212>PRT

<213>Chlamydia pneumoniae

<400>841

Thr Cys Leu Arg Ser Ser Arg Lys Ile Val Val Glu Asp Ile Ser Asp
 1 5 10 15
 Arg Asn Met Tyr Ser Cys Tyr Ser Lys Gly Ile Ser His Asn Tyr Leu
 20 25 30
 Leu His Pro Met Ser Arg Leu Asp Ile Phe Val Phe Asp Ser Leu Ile
 35 40 45
 Ala Asn Gln Asp Gln Asn Leu Leu Glu Glu Ile Phe Cys Ser Glu Asp
 50 55 60
 Thr Val Leu Phe Lys Ala Tyr Arg Thr Thr Ala Leu Gln Ser Pro Leu
 65 70 75 80
 Ala Ala Lys Asn Leu Asn Ile Ala Arg Lys Val Ala Asn Tyr Ile Leu
 85 90 95
 Ala Asp Asn Gly Glu Ile Asp Thr Val Lys Leu Val Glu Ala Ile His
 100 105 110
 His Leu Ser Gln Cys Thr Tyr Pro Leu Gly Pro His Arg His Asn Glu
 115 120 125
 Ala Gln Asp Arg Glu His Leu Leu Lys Met Leu Lys Ala Leu Lys Glu
 130 135 140
 Asn Pro Lys Leu Lys Glu Ser Ile Lys Thr Leu Phe Val Pro Ser Tyr
 145 150 155 160
 Ser Thr Ile Gln Asn Leu Ile Arg His Thr Leu Ala Leu Asn Pro Gln
 165 170 175
 Thr Ile Leu Ser Thr Ile His Val Arg Gln Ala Ala Leu Thr Ala Leu
 180 185 190
 Phe Thr Tyr Leu Arg Gln Asp Val Gly Ser Cys Phe Ala Thr Ala Pro
 195 200 205
 Ala Ile Leu Ile His Gln Glu Tyr Pro Glu Arg Phe Leu Lys Asp Leu
 210 215 220
 Asn Asp Leu Ile Ser Ser Gly Lys Leu Ser Arg Ile Val Asn Gln Arg
 225 230 235 240
 Glu Ile Ala Val Pro Ile Asn Leu Ser Gly Cys Ile Gly Glu Leu Phe

755 760 765
 Glu Asn Phe Cys Asn Lys Tyr Ala Leu Gln His Val Val His Asp Phe
 770 775 780
 His Asp Phe Cys Ser Asp His Ser Leu Thr Leu Pro Glu Leu Tyr Asp
 785 790 795 800
 Lys Gly Ser Arg Phe Leu Ser Ser Leu Phe Thr Lys Asp Lys Thr Val
 805 810 815
 Ala Leu Ile Tyr Ile Arg Arg Leu Leu Tyr Leu Met Val Arg Glu Val
 820 825 830
 Pro Tyr Val Ser Glu Gln Gln Leu Pro Glu Val Leu Asp Asn Val Ser
 835 840 845
 Ser Tyr Leu Gly Ile Ser Ser Arg Ile Thr Tyr Glu Lys Phe Arg Ser
 850 855 860
 Leu Ile Glu Glu Thr Ile Pro Lys Met Thr Leu Leu Ser Ser Ala Asp
 865 870 875 880
 Leu Arg His Ile Tyr Lys Gly Leu Leu Met Gln Ser Tyr Gln Lys Ile
 885 890 895
 Tyr Thr Glu Glu Asp Thr Tyr Leu Arg Leu Thr Thr Ala Met Arg His
 900 905 910
 His Asn Leu Ala Tyr Pro Ala Pro Leu Leu Phe Ala Asp Ser Asn Trp
 915 920 925
 Pro Ser Ile Tyr Phe Gly Phe Ile Leu Asn Pro Gly Thr Thr Glu Ile
 930 935 940
 Asp Leu Trp Lys Phe Asn Tyr Ala Gly Leu Gln Gly Gln Pro Leu Asp
 945 950 955 960
 Asn Ile Gln Glu Leu Phe Ala Thr Ser Arg Pro Trp Thr Leu Tyr Ala
 965 970 975
 Asn Pro Ile Asp Tyr Gly Met Pro Pro Pro Pro Gly Tyr Arg Ser Arg
 980 985 990
 Leu Pro Lys Glu Phe Phe
 995

<210>342

<211>616

<212>PRT

<213>Chlamydia pneumoniae

<400>842

Arg His His Leu Ile Asn Ile Lys Gly Ile Ser Ile Met Lys His Thr
 1 5 10 15
 Phe Thr Lys Arg Val Leu Phe Phe Phe Phe Leu Val Ile Pro Ile Pro
 20 25 30
 Leu Leu Leu Asn Leu Met Val Val Gly Phe Phe Ser Phe Ser Ala Ala
 35 40 45
 Lys Ala Asn Leu Val Gln Val Leu His Thr Arg Ala Thr Asn Leu Ser
 50 55 60
 Ile Glu Phe Glu Lys Lys Leu Thr Ile His Lys Leu Phe Leu Asp Arg
 65 70 75 80
 Leu Ala Asn Thr Leu Ala Leu Lys Ser Tyr Ala Ser Pro Ser Ala Glu
 85 90 95
 Pro Tyr Ala Gln Ala Tyr Asn Glu Met Met Ala Leu Ser Asn Thr Asp
 100 105 110
 Phe Ser Leu Cys Leu Ile Asp Pro Phe Asp Gly Ser Val Arg Thr Lys
 115 120 125
 Asn Pro Gly Asp Pro Phe Ile Arg Tyr Leu Lys Gln His Pro Glu Met
 130 135 140
 Lys Lys Lys Leu Ser Ala Ala Val Gly Lys Ala Phe Leu Leu Thr Ile
 145 150 155 160
 Pro Gly Lys Pro Leu Leu His Tyr Leu Ile Leu Val Glu Asp Val Ala
 165 170 175
 Ser Trp Asp Ser Thr Thr Thr Ser Gly Leu Leu Val Ser Phe Tyr Pro
 180 185 190
 Met Ser Phe Leu Gln Lys Asp Leu Phe Gln Ser Leu His Ile Thr Lys
 195 200 205
 Gly Asn Ile Cys Leu Val Asn Lys Tyr Gly Glu Val Leu Phe Cys Ala
 210 215 220

Gln Asp Ser Glu Ser Ser Phe Val Phe Ser Leu Asp Leu Pro Asn Leu
 225 230 235 240
 Pro Gln Phe Gln Ala Arg Ser Pro Ser Ala Ile Glu Ile Glu Lys Ala
 245 250 255
 Ser Gly Ile Leu Gly Gly Glu Asn Leu Ile Thr Val Ser Ile Asn Lys
 260 265 270
 Lys Arg Tyr Leu Gly Leu Val Leu Asn Lys Ile Pro Ile Glu Gly Thr
 275 280 285
 Tyr Thr Leu Ser Leu Val Pro Val Ser Asp Leu Ile Gln Ser Ala Leu
 290 295 300
 Lys Val Pro Leu Asn Ile Cys Phe Phe Tyr Val Leu Ala Phe Leu Leu
 305 310 315 320
 Met Trp Trp Ile Phe Ser Lys Ile Asn Thr Lys Leu Asn Lys Pro Leu
 325 330 335
 Gln Glu Leu Thr Phe Cys Met Glu Ala Ala Trp Arg Gly Asn His Asn
 340 345 350
 Val Arg Phe Glu Pro Gln Pro Tyr Gly Tyr Glu Phe Asn Glu Leu Gly
 355 360 365
 Asn Ile Phe Asn Cys Thr Leu Leu Leu Leu Leu Asn Ser Ile Glu Lys
 370 375 380
 Ala Asp Ile Asp Tyr His Ser Gly Glu Lys Leu Gln Lys Glu Leu Gly
 385 390 395 400
 Ile Leu Ser Ser Leu Gln Ser Ala Leu Leu Ser Pro Asp Phe Pro Thr
 405 410 415
 Phe Pro Lys Val Thr Phe Ser Ser Gln His Leu Arg Arg Arg Gln Leu
 420 425 430
 Ser Gly His Phe Asn Gly Trp Thr Val Gln Asp Gly Gly Asp Thr Leu
 435 440 445
 Leu Gly Ile Ile Gly Leu Ala Gly Asp Ile Gly Leu Pro Ser Tyr Leu
 450 455 460
 Tyr Ala Leu Ser Ala Arg Ser Leu Phe Leu Ala Tyr Ala Ser Ser Asp
 465 470 475 480
 Val Ser Leu Gln Lys Ile Ser Lys Asp Thr Ala Asp Ser Phe Ser Lys
 485 490 495
 Thr Thr Glu Gly Asn Glu Ala Val Val Ala Met Thr Phe Ile Lys Tyr
 500 505 510
 Val Glu Lys Asp Arg Ser Leu Glu Leu Leu Ser Leu Ser Glu Gly Ala
 515 520 525
 Pro Thr Met Phe Leu Gln Arg Gly Glu Ser Phe Val Arg Leu Pro Leu
 530 535 540
 Glu Thr His Gln Ala Leu Gln Pro Gly Asp Arg Leu Ile Cys Leu Thr
 545 550 555 560
 Gly Gly Glu Asp Ile Leu Lys Tyr Phe Ser Gln Leu Pro Ile Glu Glu
 565 570 575
 Leu Leu Lys Asp Pro Leu Asn Pro Leu Asn Thr Glu Asn Leu Ile Asp
 580 585 590
 Ser Leu Thr Met Met Leu Asn Asn Glu Thr Glu His Ser Ala Asp Gly
 595 600 605
 Thr Leu Thr Ile Leu Ser Phe Ser
 610 615

<210>843

<211>629

<212>PRT

<213>Chlamydia pneumoniae

<400>843

Asn Asn Arg Val Pro Phe Val Val Cys Cys Ala Val Ala Ile Ile Ala
 1 5 10 15
 Pro Leu Gly Ile Asn Ile Val Trp Leu Asn Leu Asp Gln Tyr Arg Thr
 20 25 30
 Ile Val Ser Ala Ile Ser Thr Ala Leu Lys Glu Asn Ala Ala Phe Lys
 35 40 45
 Ala Asn Thr Leu Thr Gln Ile Val Pro Leu Asn Val Asp Val Leu Ser
 50 55 60
 Leu Phe Ser Asp Val Leu Asp Leu Asp Ala Gly Ile Pro Glu Thr Pro

65	70	75	80
Asn Val Leu Leu Ser Asn Glu Met Gln Lys Val Phe Gln Gly Ile Tyr			
	85	90	95
Asn Glu Ile Ser Leu Ile Lys Val Phe Pro Asn Gly Asp Lys Ile Val			
	100	105	110
Val Ala Ser Ser Ile Pro Glu His Leu Gly Glu Asn Tyr Asn His Lys			
	115	120	125
Ile Asp Ile Pro Lys Asn Thr Pro Phe Leu Ala Ala Leu Lys Gln Ser			
	130	135	140
Pro Lys Asn Gln Glu Val Phe Ser Val Met Gln Ala Asn Val Phe Asp			
	145	150	155
Ala Lys Thr Gln Glu Leu Gln Gly Ile Leu Tyr Thr Thr Phe Ser Ala			
	165	170	175
Glu Ser Leu Leu Lys Asp Leu Leu Ile Asn Lys Gln Ser Tyr Leu Thr			
	180	185	190
Val Lys Thr Ala Ile Leu Ser Lys Tyr Gly Val Ile Leu Lys Ala Ser			
	195	200	205
Asp Pro Ala Leu His Leu His Thr Val Tyr Pro Asp Met Thr Lys Glu			
	210	215	220
Lys Phe Cys Gln Val Phe Leu Asn Asp Asp Pro Cys Pro Ile Asp Ser			
	225	230	235
Glu Leu Gly Pro Leu Thr Leu Ser Pro Leu Asp Ile Gly Glu Asn Phe			
	245	250	255
Tyr Ser Phe Lys Ile Lys Asp Thr Glu Ile Trp Gly Cys Ile Glu Asn			
	260	265	270
Val Pro Ser Ile Asp Ile Ala Val Leu Ser Tyr Ala Lys Lys Glu Glu			
	275	280	285
Ser Phe Ala Pro Leu Trp Arg Arg Ala Arg Met Tyr Thr Ala Tyr Phe			
	290	295	300
Phe Cys Ile Leu Leu Gly Ser Leu Ile Ala Phe Ile Val Ala Arg Arg			
	305	310	315
Leu Ser Leu Pro Ile Arg Lys Leu Ala Thr Ala Met Ile Glu Ser Arg			
	325	330	335
Lys Asn Lys Asn Cys Leu Tyr Thr Asp Asp Ser Leu Gly Phe Glu Ile			
	340	345	350
Asn Arg Leu Gly His Ile Phe Asn Ala Met Val Glu Asn Leu His Lys			
	355	360	365
Gln Gln His Leu Ala Lys Thr Asn Phe Glu Met Lys Glu Asn Ala Gln			
	370	375	380
Asn Ala Leu His Leu Gly Glu Gln Ala Gln Gln Arg Leu Leu Pro Asn			
	385	390	395
Thr Leu Pro Ser Tyr Pro His Ile Glu Leu Ala Lys Ala Tyr Ile Pro			
	405	410	415
Ala Ile Thr Val Gly Gly Asp Phe Phe Asp Val Phe Val Val Gly Glu			
	420	425	430
Gly Ser Lys Ala Arg Leu Phe Leu Ile Val Ala Asp Ala Ser Gly Lys			
	435	440	445
Gly Val Asn Ala Cys Gly Tyr Ser Leu Phe Leu Lys Asn Met Leu Arg			
	450	455	460
Thr Phe Leu Ser Arg Ser Ser Ser Leu Gln Gln Ala Ile Gln Glu Thr			
	465	470	475
Ser Arg Leu Phe Tyr Asn Asn Thr Lys Asn Ser Gly Met Phe Val Thr			
	485	490	495
Leu Cys Val Tyr Cys Tyr His Gln Thr Ser Asn Thr Met Glu Tyr Tyr			
	500	505	510
Ser Cys Gly His Pro Pro Ala Cys Tyr Leu Asp Pro Asp Gly Glu Thr			
	515	520	525
Ser Trp Leu Phe His Pro Gly Met Ala Leu Gly Phe Leu Pro Glu Val			
	530	535	540
Ala Asn Ile Thr Ser Lys Leu Phe His Pro Lys Pro Gly Ser Leu Phe			
	545	550	555
Val Leu Tyr Ser Asp Gly Ile Thr Glu Ala His Asn Asn Asn Asn Asp			
	565	570	575
Met Phe Gly Glu Glu Arg Leu Gln Ala Ala Ile Gln Gly Leu Thr Gly			

580 585 590
 Lys Ser Ala Ala Asp Ala Val His Arg Leu Met Leu Ser Val Lys Thr
 595 600 605
 Phe Val Gly Asn Ser His Gln His Asp Asp Ile Thr Leu Leu Ile Leu
 610 615 620
 Lys Val Leu Ala Ser
 625
 <210>844
 <211>195
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>844
 Lys Ser Ser Lys His Arg Ser Phe Leu Leu Lys Lys Ser Gly Gly Asn
 1 5 10 15
 Gln Val Ser Leu Tyr Gln Lys Trp Trp Asn Ser Gln Leu Lys Lys Ser
 20 25 30
 Leu Cys Tyr Ser Thr Val Ala Ala Leu Ile Phe Met Ile Pro Ser Gln
 35 40 45
 Glu Ser Phe Ala Asp Ser Leu Ile Asp Leu Asn Leu Gly Leu Asp Pro
 50 55 60
 Ser Val Glu Cys Leu Ser Gly Asp Gly Ala Phe Ser Val Gly Tyr Phe
 65 70 75 80
 Thr Lys Ala Gly Ser Thr Pro Val Glu Tyr Gln Pro Phe Lys Tyr Asp
 85 90 95
 Val Ser Lys Lys Thr Phe Thr Ile Leu Ser Val Glu Thr Ala Asn Gln
 100 105 110
 Ser Gly Tyr Ala Tyr Gly Ile Ser Tyr Asp Gly Thr Ile Thr Val Gly
 115 120 125
 Thr Cys Ser Leu Gly Ala Gly Lys Tyr Asn Gly Ala Lys Trp Ser Ala
 130 135 140
 Asp Gly Thr Leu Thr Pro Leu Thr Gly Ile Thr Gly Gly Thr Ser His
 145 150 155 160
 Thr Glu Ala Arg Ala Ile Ser Lys Asp Thr Gln Val Ile Glu Gly Phe
 165 170 175
 Ser Tyr Asp Ala Ser Gly Gln Pro Lys Ala Val Gln Trp Ala Ser Gly
 180 185 190
 Gly Leu Gln
 195
 <210>845
 <211>115
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>845
 Cys Phe Arg Ala Thr Gln Gly Cys Ala Val Gly Lys Arg Arg Xaa Thr
 1 5 10 15
 Val Thr Gln Leu Ala Asp Ile Ser Gly Gly Ser Arg Ser Ser Tyr Ala
 20 25 30
 Tyr Ala Ile Ser Asp Asp Gly Thr Ile Ile Val Gly Ser Met Glu Ser
 35 40 45
 Thr Ile Thr Arg Lys Thr Thr Ala Val Lys Trp Val Asn Asn Val Pro
 50 55 60
 Thr Tyr Leu Gly Thr Leu Gly Gly Asp Ala Ser Thr Gly Leu Tyr Ile
 65 70 75 80
 Ser Gly Asp Gly Thr Val Ile Val Gly Ala Ala Asn Thr Ala Thr Val
 85 90 95
 Thr Asn Gly Asn Gln Glu Ser His Ala Tyr Met Tyr Lys Asp Asn Gln
 100 105 110
 Met Lys Asp
 115
 <210>846
 <211>162
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>846

Gly Thr Leu Gly Gly Ala Asn Ser Ser Ala Thr Gly Val Ser Ser Asp
 1 5 10 15
 Gly Ser Val Ile Val Gly Gln Ala Gln Thr Ala Asp Lys Ser Val His
 20 25 30
 Ala Phe Gln Tyr Tyr Asn Gly Glu Met Lys Asp Leu Gly Thr Leu Gly
 35 40 45
 Gly Thr Ser Ser Thr Ala Lys Thr Val Ser Pro Asp Gly Lys Val Ile
 50 55 60
 Met Gly Arg Ser Gln Ile Ala Asp Gly Ser Trp His Ala Phe Met Cys
 65 70 75 80
 His Thr Asp Phe Ser Ser Asn Asn Val Leu Phe Asp Leu Asp Asn Thr
 85 90 95
 Tyr Lys Thr Leu Arg Glu Asn Gly Arg Gln Leu Asn Ser Ile Phe Asn
 100 105 110
 Leu Gln Asn Met Met Leu Gln Arg Ala Ser Asp His Glu Phe Thr Glu
 115 120 125
 Phe Gly Arg Ser Asn Ile Ala Leu Gly Ala Gly Leu Tyr Val Asn Ala
 130 135 140
 Leu Gln Asn Leu Pro Ser Lys Leu Ala Ala Gln Tyr Phe Gly Ile Ala
 145 150 155 160
 Tyr Lys Ile Arg Pro Lys Tyr Arg Leu Gly Val Phe Leu Asp His Asn
 165 170 175
 Phe Ser Ser His Val Ser
 180

<210>847

<211>244

<212>PRT

<213>Chlamydia pneumoniae

<400>847

Gln His Asn Ile Leu Glu Ser His Thr Lys Tyr Val Leu Asn Ile Val
 1 5 10 15
 Trp Gly Cys Phe Trp Thr Ile Ile Ser Ala Pro Thr Phe Pro Asn Asn
 20 25 30
 Phe Asn Val Ser His Asn Arg Leu Trp Met Gly Ala Phe Ile Gly Trp
 35 40 45
 Gln Asp Ser Asp Ala Leu Gly Ser Ser Val Lys Val Ser Phe Gly Tyr
 50 55 60
 Gly Lys Gln Lys Ala Thr Ile Thr Arg Glu Gln Leu Glu Asn Thr Glu
 65 70 75 80
 Ala Gly Ser Gly Glu Ser His Phe Glu Gly Val Ala Ala Gln Ile Glu
 85 90 95
 Gly Arg Tyr Gly Lys Ser Leu Gly Gly His Val Arg Val Gln Pro Phe
 100 105 110
 Leu Gly Leu Gln Phe Val His Ile Thr Arg Lys Glu Tyr Thr Glu Asn
 115 120 125
 Ala Val Gln Phe Pro Val His Tyr Asp Pro Ile Asp Tyr Ser Thr Gly
 130 135 140
 Val Val Tyr Leu Gly Ile Gly Ser His Ile Ala Leu Val Asp Ser Leu
 145 150 155 160
 His Val Gly Thr Arg Met Gly Met Glu Gln Asn Phe Ala Ala His Thr
 165 170 175
 Asp Arg Phe Ser Gly Ser Ile Ala Ser Ile Gly Asn Phe Val Phe Glu
 180 185 190
 Lys Leu Asp Val Thr His Thr Arg Ala Phe Ala Glu Met Arg Val Asn
 195 200 205
 Tyr Glu Leu Pro Tyr Leu Gln Ser Leu Asn Leu Ile Leu Arg Val Asn
 210 215 220
 Gln Gln Pro Leu Gln Gly Val Met Gly Phe Ser Ser Asp Leu Arg Tyr
 225 230 235 240
 Ala Leu Gly Phe

<210>846

<211>687

<212>PRT

<213>Chlamydia pneumoniae

<400>848

Ser	Glu	Leu	Tyr	Ser	Ser	Tyr	Leu	Gln	Pro	Cys	Leu	Asn	Met	Ser	Ile
1				5				10						15	
Val	Arg	Asn	Ser	Ala	Leu	Pro	Leu	Pro	Cys	Leu	Ser	Arg	Ser	Glu	Thr
		20						25						30	
Phe	Lys	Lys	Val	Arg	Ser	His	Met	Lys	Phe	Met	Lys	Val	Leu	Thr	Pro
		35					40					45			
Trp	Ile	Tyr	Arg	Lys	Asp	Leu	Trp	Val	Thr	Ala	Phe	Leu	Leu	Thr	Ala
	50				55						60				
Ile	Pro	Gly	Ser	Phe	Ala	His	Thr	Leu	Val	Asp	Ile	Ala	Gly	Glu	Pro
	65				70					75				80	
Arg	His	Ala	Ala	Gln	Ala	Thr	Gly	Val	Ser	Gly	Asp	Gly	Lys	Ile	Val
				85					90					95	
Ile	Gly	Met	Lys	Val	Pro	Asp	Asp	Pro	Phe	Ala	Ile	Thr	Val	Gly	Phe
		100						105					110		
Gln	Tyr	Ile	Asp	Gly	His	Leu	Gln	Pro	Leu	Glu	Ala	Val	Arg	Pro	Gln
		115					120						125		
Cys	Ser	Val	Tyr	Pro	Asn	Gly	Ile	Thr	Pro	Asp	Gly	Thr	Val	Ile	Val
	130					135					140				
Gly	Thr	Asn	Tyr	Ala	Ile	Gly	Met	Gly	Ser	Val	Ala	Val	Lys	Trp	Val
	145				150					155				160	
Asn	Gly	Lys	Val	Ser	Glu	Leu	Pro	Met	Leu	Pro	Asp	Thr	Leu	Asp	Ser
				165				170						175	
Val	Ala	Ser	Ala	Val	Ser	Ala	Asp	Gly	Arg	Val	Ile	Gly	Gly	Asn	Arg
				180				185					190		
Asn	Ile	Asn	Leu	Gly	Ala	Ser	Val	Ala	Val	Lys	Trp	Glu	Asp	Asp	Val
	195						200						205		
Ile	Thr	Gln	Leu	Pro	Ser	Leu	Pro	Asp	Ala	Met	Asn	Ala	Cys	Val	Asn
	210				215							220			
Gly	Ile	Ser	Ser	Asp	Gly	Ser	Ile	Ile	Val	Gly	Thr	Met	Val	Asp	Val
	225				230					235				240	
Ser	Trp	Arg	Asn	Thr	Ala	Val	Gln	Trp	Ile	Gly	Asp	Gln	Leu	Ser	Val
				245				250						255	
Ile	Gly	Thr	Leu	Gly	Gly	Thr	Thr	Ser	Val	Ala	Ser	Ala	Ile	Ser	Thr
		260					265						270		
Asp	Gly	Thr	Val	Ile	Val	Gly	Gly	Ser	Glu	Asn	Ala	Asp	Ser	Gln	Thr
	275					280						285			
His	Ala	Tyr	Ala	Tyr	Lys	Asn	Gly	Val	Met	Ser	Asp	Ile	Gly	Thr	Leu
	290				295						300				
Gly	Gly	Phe	Tyr	Ser	Leu	Ala	His	Ala	Val	Ser	Ser	Asp	Gly	Ser	Val
	305				310					315				320	
Ile	Val	Gly	Val	Ser	Thr	Asn	Ser	Glu	His	Arg	Tyr	His	Ala	Phe	Gln
				325				330						335	
Tyr	Ala	Asp	Gly	Gln	Met	Val	Asp	Leu	Gly	Thr	Leu	Gly	Gly	Pro	Glu
		340					345						350		
Ser	Tyr	Ala	Gln	Gly	Val	Ser	Gly	Asp	Gly	Lys	Val	Ile	Val	Gly	Arg
		355					360					365			
Ala	Gln	Val	Pro	Ser	Gly	Asp	Trp	His	Ala	Phe	Leu	Cys	Pro	Phe	Gln
	370				375						380				
Ala	Pro	Ser	Pro	Ala	Pro	Val	His	Gly	Gly	Ser	Thr	Val	Val	Thr	Ser
	385				390					395				400	
Gln	Asn	Pro	Arg	Gly	Met	Val	Asp	Ile	Asn	Ala	Thr	Tyr	Ser	Ser	Leu
				405				410						415	
Lys	Asn	Ser	Gln	Gln	Gln	Leu	Gln	Arg	Leu	Leu	Ile	Gln	His	Ser	Ala
		420					425						430		
Lys	Val	Glu	Ser	Val	Ser	Ser	Gly	Ala	Pro	Ser	Phe	Thr	Ser	Val	Lys
		435					440					445			
Gly	Ala	Ile	Ser	Lys	Gln	Ser	Pro	Ala	Val	Gln	Asn	Asp	Val	Gln	Lys
	450				455						460				
Gly	Thr	Phe	Leu	Ser	Tyr	Arg	Ser	Gln	Val	His	Gly	Asn	Val	Gln	Asn
	465				470					475				480	
Gln	Gln	Leu	Leu	Thr	Gly	Ala	Phe	Met	Asp	Trp	Lys	Leu	Ala	Ser	Ala
				485					490					495	

WO 99/27105

Pro Lys Cys Gly Phe Lys Val Ala Leu His Tyr Gly Ser Gln Asp Ala
 500 505 510
 Leu Val Glu Arg Ala Ala Leu Pro Tyr Thr Glu Gln Gly Leu Gly Ser
 515 520 525
 Ser Val Leu Ser Gly Phe Gly Gly Gln Val Gln Gly Arg Tyr Asp Phe
 530 535 540
 Asn Leu Gly Glu Thr Val Val Leu Gln Pro Phe Met Gly Ile Gln Val
 545 550 555 560
 Leu His Leu Ser Arg Glu Gly Tyr Ser Glu Lys Asn Val Arg Phe Pro
 565 570 575
 Val Ser Tyr Asp Ser Val Ala Tyr Ser Ala Ala Thr Ser Phe Met Gly
 580 585 590
 Ala His Val Phe Ala Ser Leu Ser Pro Lys Met Ser Thr Ala Ala Thr
 595 600 605
 Leu Gly Val Glu Arg Asp Leu Asn Ser His Ile Asp Glu Phe Lys Gly
 610 615 620
 Ser Val Ser Ala Met Gly Asn Phe Val Leu Glu Asn Ser Thr Val Ser
 625 630 635 640
 Val Leu Arg Pro Phe Ala Ser Leu Ala Met Tyr Tyr Asp Val Arg Gln
 645 650 655
 Gln Gln Leu Val Thr Leu Ser Val Val Met Asn Gln Gln Pro Leu Thr
 660 665 670
 Gly Thr Leu Ser Leu Val Ser Gln Ser Ser Tyr Asn Leu Ser Phe
 675 680 685

<210>849

<211>828

<212>PRT

<213>Chlamydia pneumoniae

<400>849

Val Leu Ile Leu Thr Trp Ile Asn Val Leu Thr Lys Leu Gly Leu Asn
 1 5 10 15
 Met Ser Lys Lys Ile Lys Val Leu Gly His Leu Thr Leu Cys Thr Leu
 20 25 30
 Phe Arg Gly Val Leu Cys Ala Ala Ala Leu Ser Asn Ile Gly Tyr Ala
 35 40 45
 Ser Thr Ser Gln Glu Ser Pro Tyr Gln Lys Ser Ile Glu Asp Trp Lys
 50 55 60
 Gly Tyr Thr Phe Thr Asp Leu Glu Leu Leu Ser Lys Glu Gly Trp Ser
 65 70 75 80
 Glu Ala His Ala Ile Ser Gly Asn Gly Ser Arg Ile Val Gly Ala Ser
 85 90 95
 Gly Ala Gly Gln Gly Ser Val Thr Ala Val Ile Trp Glu Ser His Leu
 100 105 110
 Ile Lys His Leu Gly Thr Leu Gly Gly Glu Ala Ser Ser Ala Glu Gly
 115 120 125
 Ile Ser Asn Asp Gly Glu Val Val Val Gly Trp Ser Asp Thr Arg Glu
 130 135 140
 Gly Tyr Thr His Ala Phe Val Phe Asp Gly Arg Asp Met Lys Asp Leu
 145 150 155 160
 Gly Thr Leu Gly Ala Thr Tyr Ser Val Ala Arg Gly Val Ser Gly Asp
 165 170 175
 Gly Ser Ile Ile Val Gly Val Ser Ala Thr Ala Arg Gly Glu Asp Tyr
 180 185 190
 Gly Met Ala Ser Trp Cys Gln Val Gly Lys Arg Glu Asn Gln Thr Ile
 195 200 205
 Glu Val Val Ala Ser Arg Ser Leu Gly Leu Arg Arg Met Gln Ser Leu
 210 215 220
 Arg Met Val Arg
 225

<210>850

<211>173

<212>PRT

<213>Chlamydia pneumoniae

<400>850

Ser Cys Cys Leu Lys Val Ser Gly Ser Glu Ala Asn Ala Ile Ser Glu
 1 5 10 15
 Asp Gly Thr Val Ile Val Gly Arg Gly Glu Ile Ser Arg Asn His Ile
 20 25 30
 Val Ala Val Lys Trp Asn Lys Asn Ala Val Tyr Ser Leu Gly Thr Leu
 35 40 45
 Gly Gly Ser Val Ala Ser Ala Glu Ala Ile Ser Ala Asn Gly Lys Val
 50 55 60
 Ile Val Gly Trp Ser Thr Thr Asn Asn Gly Glu Thr His Ala Phe Met
 65 70 75 80
 His Lys Asp Glu Thr Met His Asp Leu Gly Thr Leu Gly Gly Gly Phe
 85 90 95
 Ser Val Ala Thr Gly Val Ser Ala Asp Gly Arg Ala Ile Val Gly Phe
 100 105 110
 Ser Ala Val Lys Thr Gly Glu Ile His Ala Phe Tyr Tyr Ala Glu Gly
 115 120 125
 Glu Met Glu Asp Leu Thr Thr Leu Gly Gly Glu Glu Ala Arg Val Phe
 130 135 140
 Asp Ile Ser Ser Glu Gly Asn Asp Ile Ile Gly Ser Ile Lys Thr Asp
 145 150 155 160
 Ala Gly Ala Glu Arg Ala Tyr Leu Phe His Ile His Lys
 165 170

<210>851

<211>349

<212>PRT

<213>Chlamydia pneumoniae

<400>851

Val Val Phe Glu Ile Ile Phe Val Val Arg Val Pro Met Lys Lys Thr
 1 5 10 15
 Cys Cys Gln Asn Tyr Arg Ser Ile Gly Val Val Phe Ser Val Val Leu
 20 25 30
 Phe Val Leu Thr Thr Gln Thr Leu Phe Ala Gly His Phe Ile Asp Ile
 35 40 45
 Gly Thr Ser Gly Leu Tyr Ser Trp Ala Arg Gly Val Ser Gly Asp Gly
 50 55 60
 Arg Val Val Val Gly Tyr Glu Gly Gly Asn Ala Phe Lys Tyr Val Asp
 65 70 75 80
 Gly Glu Lys Phe Leu Glu Gly Leu Val Pro Arg Ser Glu Ala Leu
 85 90 95
 Val Phe Lys Ala Ser Tyr Asp Gly Ser Val Ile Ile Gly Ile Ser Asp
 100 105 110
 Gln Asp Pro Ser Cys Arg Ala Val Lys Trp Val Asn Gly Ala Leu Val
 115 120 125
 Asp Leu Gly Ile Phe Ser Glu Gly Met Gln Ser Phe Ala Glu Gly Val
 130 135 140
 Ser Ser Asp Gly Lys Thr Ile Val Gly Cys Leu Tyr Ser Asp Asp Thr
 145 150 155 160
 Glu Thr Asn Phe Ala Val Lys Trp Asp Glu Thr Gly Met Val Val Leu
 165 170 175
 Pro Asn Leu Pro Glu Asp Arg His Ser Cys Ala Trp Asp Ala Ser Glu
 180 185 190
 Asp Gly Ser Val Ile Val Gly Asp Ala Met Gly Ser Glu Glu Ile Ala
 195 200 205
 Lys Ala Val Tyr Trp Lys Asp Gly Glu Gln His Leu Leu Ser Asn Ile
 210 215 220
 Pro Gly Ala Lys Arg Ser Ser Ala His Ala Val Ser Lys Asp Gly Ser
 225 230 235 240
 Phe Ile Val Gly Glu Phe Ile Ser Glu Glu Asn Glu Val His Ala Phe
 245 250 255
 Val Tyr His Asn Gly Val Ile Lys Asp Ile Gly Thr Leu Gly Gly Asp
 260 265 270
 Tyr Ser Val Ala Thr Gly Val Ser Arg Asp Gly Lys Val Ile Val Gly
 275 280 285
 His Ser Thr Arg Thr Asp Gly Glu Tyr Arg Ala Phe Lys Tyr Val Asp

WO 99/27105

290 295 300
 Gly Arg Met Ile Asp Leu Gly Thr Leu Gly Gly Ser Ala Ser Phe Ala
 305 310 315 320
 Phe Gly Val Ser Asp Asp Gly Lys Thr Ile Val Gly Lys Phe Glu Thr
 325 330 335
 Glu Leu Gly Glu Cys His Ala Phe Ile Tyr Leu Asp Asp
 340 345
 <210>852
 <211>354
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>852
 Lys Arg Glu Glu Asn Met Ala Ala Ile Lys Gln Ile Leu Arg Ser Met
 1 5 10 15
 Leu Ser Gln Ser Ser Leu Trp Met Val Leu Phe Ser Leu Tyr Ser Leu
 20 25 30
 Ser Gly Tyr Cys Tyr Val Ile Thr Asp Lys Pro Glu Asp Asp Phe His
 35 40 45
 Ser Ser Ser Ala Val Lys Trp Asp His Trp Gly Lys Thr Thr Leu Ser
 50 55 60
 Arg Leu Ser Asn Lys Lys Ala Ser Ala Lys Ala Val Ser Gly Thr Gly
 65 70 75 80
 Ala Thr Thr Val Gly Phe Ile Lys Asp Thr Trp Ser Arg Thr Tyr Ala
 85 90 95
 Val Arg Trp Asn Tyr Trp Gly Thr Lys Glu Leu Pro Thr Ser Ser Trp
 100 105 110
 Val Lys Lys Ser Lys Ala Thr Gly Ile Ser Ser Asp Gly Ser Ile Ile
 115 120 125
 Ala Gly Ile Val Glu Asn Glu Leu Ser Gln Ser Phe Ala Val Thr Trp
 130 135 140
 Lys Asn Asn Glu Met Tyr Leu Leu Pro Ser Thr Trp Ala Val Gln Ser
 145 150 155 160
 Lys Ala Tyr Gly Ile Ser Ser Asp Gly Ser Val Ile Val Gly Ser Ala
 165 170 175
 Lys Asp Ala Trp Ser Arg Thr Phe Ala Val Lys Trp Thr Gly His Glu
 180 185 190
 Ala Gln Val Leu Pro Val Gly Trp Ala Val Lys Ser Val Ala Asn Ser
 195 200 205
 Val Ser Ala Asn Gly Ser Ile Ile Val Gly Ser Val Gln Asp Ala Ser
 210 215 220
 Gly Ile Leu Tyr Ala Val Lys Trp Glu Gly Asn Thr Ile Thr His Leu
 225 230 235 240
 Gly Thr Leu Gly Gly Tyr Ser Ala Ile Ala Lys Ala Val Ser Asn Asn
 245 250 255
 Gly Lys Val Ile Val Gly Arg Ser Glu Thr Tyr Tyr Gly Glu Val His
 260 265 270
 Ala Phe Cys His Lys Asn Gly Val Met Ser Asp Leu Gly Thr Leu Gly
 275 280 285
 Gly Ser Tyr Ser Ala Ala Lys Gly Val Ser Ala Thr Gly Lys Val Ile
 290 295 300
 Val Gly Met Ser Thr Thr Ala Asn Gly Lys Leu His Ala Phe Lys Tyr
 305 310 315 320
 Val Gly Gly Arg Met Ile Asp Leu Gly Glu Tyr Ser Trp Lys Glu Ala
 325 330 335
 Cys Ala Asn Ala Val Ser Ile Asp Gly Glu Ile Ile Val Gly Val Gln
 340 345 350
 Ser Glu

<210>853

<211>452

<212>PRT

<213>Chlamydia pneumoniae

<400>853

Met Phe Glu Ala Val Ile Ala Asp Ile Gln Ala Arg Glu Ile Leu Asp

1	5	10	15
Ser Arg Gly Tyr	Pro Thr Leu His Val	Lys Val Thr Thr	Ser Thr Gly
20	25	30	
Ser Val Gly Glu	Ala Arg Val Pro	Ser Gly Ala Ser Thr	Gly Lys Lys
35	40	45	
Glu Ala Leu Glu	Phe Arg Asp Thr	Asp Ser Pro Arg Tyr	Gln Gly Lys
50	55	60	
Gly Val Leu Gln	Ala Val Lys Asn Val	Lys Glu Ile Leu Phe	Pro Leu
65	70	75	80
Val Lys Gly Cys	Ser Val Tyr Glu	Gln Ser Leu Ile	Asp Ser Leu Met
85	90	95	
Met Asp Ser Asp	Gly Ser Pro Asn Lys	Glu Thr Leu Gly	Ala Asn Ala
100	105	110	
Ile Leu Gly Val	Ser Leu Ala Thr	Ala His Ala Ala	Ala Thr Leu
115	120	125	
Arg Arg Pro Leu	Tyr Arg Tyr Leu	Gly Gly Cys Phe	Ala Cys Ser Leu
130	135	140	
Pro Cys Pro Met	Met Asn Leu Ile	Asn Gly Gly Met	His Ala Asp Asn
145	150	155	160
Gly Leu Gly Phe	Gln Glu Phe Met	Ile Arg Pro Ile	Gly Ala Ser Ser
165	170	175	
Ile Lys Glu Ala	Val Asn Met Gly	Ala Asp Val Phe	His Thr Leu Lys
180	185	190	
Lys Leu Leu His	Glu Arg Gly Leu	Ser Thr Gly Val	Gly Asp Glu Gly
195	200	205	
Gly Phe Ala Pro	Asn Leu Ala Ser	Asn Glu Glu Ala	Leu Glu Leu Leu
210	215	220	
Leu Leu Ala Ile	Glu Lys Ala Gly	Phe Thr Pro Gly	Lys Asp Ile Ser
225	230	235	240
Leu Ala Leu Asp	Cys Ala Ala Ser	Ser Phe Tyr Asn	Val Lys Thr Gly
245	250	255	
Thr Tyr Asp Gly	Arg His Tyr Glu	Glu Gln Ile Ala	Ile Leu Ser Asn
260	265	270	
Leu Cys Asp Arg	Tyr Pro Ile Asp	Ser Ile Glu Asp	Gly Leu Ala Glu
275	280	285	
Glu Asp Tyr Asp	Gly Trp Ala Leu	Leu Thr Glu Val	Leu Gly Glu Lys
290	295	300	
Val Gln Ile Val	Gly Asp Leu Phe	Val Thr Asn Pro	Glu Leu Ile
305	310	315	320
Leu Glu Gly Ile	Ser Asn Gly Leu	Ala Asn Ser Val	Leu Ile Lys Pro
325	330	335	
Asn Gln Ile Gly	Thr Leu Thr Glu	Thr Val Tyr Ala	Ile Lys Leu Arg
340	345	350	
Lys Trp Leu Ala	Ile Leu Gln Leu	Phe Leu Ile Ala	Gln Glu Lys Leu
355	360	365	
Arg Thr Leu Arg	Leu Gln Ile Leu	Leu Leu Leu Pro	Ser Thr Leu Val Lys
370	375	380	
Ser Lys Gln Ala	Leu Tyr His Val	Leu Ser Val Leu	Gln Asn Thr Ile
385	390	395	400
Asp Ser Trp Lys	Leu Lys Lys Ser	Leu Asp Pro Lys	Gln Phe Ser Gln
405	410	415	
Ile Leu Met Tyr	Phe Leu Thr Arg	Ile Leu Arg Asn	Arg Gly Ile Phe
420	425	430	
Ser Ile Ser Ile	Leu Ser Pro Asn	Gln Glu Tyr Ile	Ala Asp Leu Trp
435	440	445	
Ala Leu Ser Phe			
450			

<210>854

<211>84

<212>PRT

<213>Chlamydia pneumoniae

<400>854

Asn Ser Val Cys Tyr	Gln Val Ala Gln	Met Ala Gly Tyr	Thr Thr Ile
1	5	10	15

WO 99/27105

Ile Ser His Arg Ser Gly Glu Thr Thr Asp Thr Thr Ile Ala Asp Leu
 20 25 30
 Ala Val Ala Phe Asn Ala Gly Gln Ile Lys Thr Gly Ser Leu Ser Arg
 35 40 45
 Ser Gln Arg Val Ala Lys Tyr Asn Arg Leu Met Glu Ile Glu Glu Glu
 50 55 60
 Leu Gly Ser Glu Ala Ile Phe Thr Asp Ser Asn Val Phe Ser Tyr Glu
 65 70 75 80
 Asp Ser Glu Glu

<210>855

<211>285

<212>PRT

<213>Chlamydia pneumoniae

<400>855

Pro Phe Glu Glu Ala Gln Lys Tyr Phe Arg Lys Val Ile Tyr Val Ser
 1 5 10 15
 Ala Thr Pro Gly Asp Thr Glu Val Gln Glu Ser Ser Gly His Ile Val
 20 25 30
 Gln Gln Ile Ile Arg Pro Thr Gly Ile Pro Asp Pro Met Pro Glu Ile
 35 40 45
 Arg Pro Ala Thr Gly Gln Val Asp Asp Leu Leu Glu Glu Ile Arg Leu
 50 55 60
 Arg Leu Ser Gln Lys His Glu Lys Ile Leu Val Ile Ser Ile Thr Lys
 65 70 75 80
 Lys Leu Ala Glu Asp Met Ala Gly Phe Leu Ser Glu Leu Glu Ile Pro
 85 90 95
 Ala Ala Tyr Leu His Ser Gly Ile Glu Thr Ala Glu Arg Thr Gln Ile
 100 105 110
 Leu Thr Asp Leu Arg Ser Gly Val Ile Asp Val Leu Ile Gly Val Asn
 115 120 125
 Leu Leu Arg Glu Gly Leu Asp Leu Pro Glu Val Ser Leu Val Ala Ile
 130 135 140
 Leu Asp Ala Asp Lys Gln Gly Phe Leu Arg Ser Thr Ser Ser Leu Ile
 145 150 155 160
 Gln Phe Cys Gly Arg Ala Ala Arg Asn Ile Asn Gly Lys Val Ile Phe
 165 170 175
 Tyr Ala Asp Gln Lys Thr Arg Ser Ile Glu Glu Thr Leu Arg Glu Thr
 180 185 190
 Glu Arg Arg Arg Gln Ile Gln Leu Asp Tyr Asn Lys Glu His Asn Ile
 195 200 205
 Val Pro Lys Pro Ile Ile Lys Ala Ile Phe Ala Asn Pro Ile Leu Gln
 210 215 220
 Thr Ser Lys Asp Ser Glu Ser Pro Lys Glu Ser Gln Arg Pro Leu Ser
 225 230 235 240
 Lys Glu Asp Leu Glu Glu Gln Ile Lys Lys Tyr Glu Ala Leu Met Gln
 245 250 255
 Arg Ala Ala Lys Glu Phe Arg Phe Asn Glu Ala Ala Lys Tyr Arg Asp
 260 265 270
 Ala Met Gln Ala Cys Lys Glu Gln Leu Leu Tyr Leu Phe
 275 280 285

<210>856

<211>372

<212>PRT

<213>Chlamydia pneumoniae

<400>856

Ile Ile Phe Thr Met Thr Phe Gln Leu His Ala Pro Phe Ala Pro Cys
 1 5 10 15
 Gly Asp Gln Pro Glu Ala Ile Ala Arg Leu Ser Ala Gly Val Arg Asn
 20 25 30
 Gln Val Lys Ser Gln Val Leu Leu Gly Thr Thr Gly Ser Gly Lys Thr
 35 40 45
 Phe Thr Ile Ala Asn Val Val Ala Asn Val Asn Leu Pro Thr Leu Val
 50 55 60

Leu Ala His Asn Lys Thr Leu Ala Ala Gln Leu Tyr Gln Glu Phe Arg
 65 70 75 80
 Glu Phe Phe Pro Asn Asn Ala Val Glu Tyr Phe Ile Ser Tyr Tyr Asp
 85 90 95
 Tyr Tyr Gln Pro Glu Ala Tyr Ile Ala Arg Ser Asp Thr Tyr Ile Glu
 100 105 110
 Lys Ser Leu Leu Ile Asn Asp Glu Ile Asp Lys Leu Arg Leu Ser Ala
 115 120 125
 Thr Arg Ser Ile Leu Glu Arg Asp Thr Leu Ile Val Ser Ser Val
 130 135 140
 Ser Cys Ile Tyr Gly Ile Gly Ser Pro Glu Asn Tyr Thr Ser Met Ala
 145 150 155 160
 Leu Val Leu Glu Val Gly Lys Glu Tyr Pro Arg Asn Ile Leu Thr Ala
 165 170 175
 Gln Leu Val Lys Met His Tyr Gln Ala Ser Pro Ile Pro Gln Arg Ser
 180 185 190
 Ala Phe Arg Glu Arg Gly Ser Val Ile Asp Ile Phe Pro Ala Tyr Glu
 195 200 205
 Ser Glu Leu Ala Leu Arg Leu Glu Phe Leu Asn Asp Thr Leu Thr Ser
 210 215 220
 Ile Glu Tyr Ser Asp Pro Leu Thr Met Ile Pro Lys Glu Ser Val Pro
 225 230 235 240
 Ser Ala Thr Leu Tyr Pro Gly Ser His Tyr Val Ile Pro Glu Ala Ile
 245 250 255
 Arg Glu Gln Ala Ile Arg Thr Ile Gln Glu Glu Leu Glu Glu Arg Met
 260 265 270
 Ala Phe Phe Asp Asp Arg Pro Ile Glu Lys Asp Arg Ile Phe His Arg
 275 280 285
 Thr Thr His Asp Ile Glu Met Ile Lys Glu Ile Gly Phe Cys Lys Gly
 290 295 300
 Ile Glu Asn Tyr Ser Arg His Phe Thr Gly Ala Pro Pro Gly Ala Pro
 305 310 315 320
 Pro Thr Cys Leu Leu Asp Tyr Phe Pro Glu Asp Phe Leu Leu Ile Ile
 325 330 335
 Asp Glu Ser His Gln Thr Leu Pro Gln Ile Arg Ala Met Tyr Arg Gly
 340 345 350
 Asp Gln Ser Arg Lys Gln Ser Leu Val Glu Tyr Gly Phe Arg Phe Pro
 355 360 365
 Ser Gly Leu Arg
 370

<210>857

<211>344

<212>PRT

<213>Chlamydia pneumoniae

<400>857

Met Asn Lys Lys Lys Arg Val Leu Thr Gly Asp Arg Pro Thr Gly Lys
 1 5 10 15
 Leu His Leu Gly His Trp Val Gly Ser Ile Lys Asn Arg Leu Glu Leu
 20 25 30
 Gln Asn Ser Pro Glu Tyr Asp Cys Phe Phe Ile Ile Ala Asp Leu His
 35 40 45
 Thr Leu Thr Thr Lys Ile Arg Lys Glu Glu Val Leu Asp Val Asp Asn
 50 55 60
 His Ile Tyr Glu Val Leu Ala Asp Trp Leu Ser Val Gly Ile Asp Pro
 65 70 75 80
 Thr Lys Ser Ile Ile Tyr Leu Gln Ser Ala Ile Pro Glu Ile Tyr Glu
 85 90 95
 Leu His Leu Leu Phe Ser Met Leu Ile Ser Ile Asn Arg Val Met Gly
 100 105 110
 Ile Pro Ser Leu Lys Asp Met Ala Arg Asn Ala Ser Ile Glu Glu Gly
 115 120 125
 Ser Leu Ser Tyr Gly Leu Ile Gly Tyr Pro Ile Leu Gln Ser Ala Asp
 130 135 140
 Ile Leu Leu Ala Lys Ala Gln Phe Val Pro Val Gly Lys Asp Asn Glu

145 150 155 160
 Ala His Val Glu Leu Thr Arg Asp Ile Ala Arg Asn Phe Asn Arg Leu
 Tyr Gly Gln Val Phe Pro Glu Pro Glu Val Leu Gln Gly Glu Leu Thr
 Ser Leu Val Gly Ile Asp Gly Gln Gly Lys Met Ser Lys Ser Ala Asn
 Asn Ala Ile Tyr Leu Ser Asp Ser Asp Ala Thr Ile Thr Glu Lys Val
 Arg Lys Met Tyr Thr Asp Pro Asn Arg Ile Arg Ala Thr Thr Pro Gly
 Arg Val Glu Gly Asn Pro Leu Phe Ile Tyr His Asp Ile Phe Asn Pro
 His Lys Asp Glu Val Glu Glu Phe Lys Ala Arg Tyr Arg Gln Gly Cys
 Ile Lys Asp Ile Glu Val Lys Ala Arg Leu Ala Glu Glu Leu Ile His
 Phe Leu Lys Pro Ile Lys Glu Arg Arg Ser Glu Phe Leu Ser Lys Pro
 Leu Ala Leu Gln Asn Val Leu Glu Asp Gly Thr His Lys Met Arg Glu
 Val Ala Lys Val Thr Met Glu Glu Val His Asp Lys Phe Gly Phe Ser
 His Lys Trp Arg Ser Leu Leu Lys
 340

<210>858

<211>185

<212>PRT

<213>Chlamydia pneumoniae

<400>852

Phe Met Ala Ala Lys Thr Lys Thr Leu Glu Leu Glu Asp Asn Val Phe
 1 5 10 15
 Leu Leu Leu Glu Gly Asn Leu Lys Arg Ile Phe Ala Thr Pro Ile Gly
 20 25 30
 Tyr Thr Thr Phe Arg Glu Phe Gln Asn Val Val Phe Asn Cys Ala Asn
 35 40 45
 Gly Gln Gln Glu Ile Ala Asn Phe Phe Phe Glu Met Leu Ile Asn Gly
 50 55 60
 Lys Leu Thr Gln Glu Leu Ala Pro Gln Gln Lys Gln Ala Ala His Ser
 65 70 75 80
 Leu Ile Ala Glu Phe Met Met Pro Ile Arg Val Ala Lys Asp Ile His
 85 90 95
 Glu Arg Gly Glu Phe Ile Asn Phe Ile Thr Ser Asp Met Leu Thr Gln
 100 105 110
 Gln Glu Arg Cys Ile Phe Leu Asn Arg Leu Ala Arg Val Asp Gly Gln
 115 120 125
 Glu Phe Leu Leu Met Thr Asp Val Gln Asn Thr Cys His Leu Ile Arg
 130 135 140
 His Leu Leu Ala Arg Leu Leu Glu Ala Gln Lys Asn Pro Val Gly Glu
 145 150 155 160
 Lys Asn Leu Gln Glu Ile Gln Glu Glu Ile Thr Ser Leu Lys Asn His
 165 170 175
 Phe Asp Glu Leu Thr Lys Ala Leu Gln
 180 185

<210>859

<211>250

<212>PRT

<213>Chlamydia pneumoniae

<400>859

Met Gly Asn Leu Lys Thr Leu Leu Glu Ser Arg Phe Lys Lys Asn Thr
 1 5 10 15
 Pro Thr Lys Met Glu Ala Leu Ala Arg Lys Arg Met Glu Gly Asp Pro
 20 25 30
 Ser Pro Leu Ala Val Arg Leu Ser Asn Pro Thr Leu Ser Ser Lys Glu

<210>861

<211>593

<212>PRT

<213>Chlamydia pneumoniae

<400>861

Arg Ser Phe His Pro Pro Lys Arg Arg Arg His Leu Ser Ile Ser Asp
 1 5 10 15
 Phe Arg Arg Ser Arg Arg Arg Glu Ile Phe Leu His Thr Ser Ala His
 20 25 30
 Leu Leu Ala Gln Ala Val Leu Arg Leu Trp Pro Asp Ala Ile Pro Thr
 35 40 45
 Ile Gly Pro Val Ile Asp His Gly Phe Tyr Tyr Asp Phe Ala Asn Leu
 50 55 60
 Ser Ile Ser Glu Ser Asp Phe Pro Leu Ile Glu Asp Thr Val Lys Gln
 65 70 75 80
 Ile Val Asp Glu Lys Leu Ala Ile Ser Arg Phe Thr Tyr Gly Asp Lys
 85 90 95
 Gln Gln Ala Leu Ala Gln Phe Pro Gln Asn Pro Phe Lys Thr Gln Leu
 100 105 110
 Ile Arg Glu Leu Pro Glu Asn Glu Glu Ile Ser Ala Tyr Ser Gln Gly
 115 120 125
 Glu Phe Phe Asp Leu Cys Arg Gly Pro His Leu Pro Ser Thr Ala His
 130 135 140
 Val Lys Ala Phe Lys Val Leu Arg Thr Ser Ala Ala Tyr Trp Arg Gly
 145 150 155 160
 Asp Pro Ser Arg Glu Ser Leu Val Arg Ile Tyr Gly Thr Ser Phe Pro
 165 170 175
 Thr Ser Lys Glu Leu Arg Ala His Leu Glu Gln Ile Glu Glu Ala Lys
 180 185 190
 Lys Arg Asp His Arg Val Leu Gly Ala Lys Leu Asp Leu Phe Ser Gln
 195 200 205
 Gln Glu Ser Ser Pro Gly Met Pro Phe Phe His Pro Arg Gly Met Ile
 210 215 220
 Val Trp Asp Ala Leu Ile Arg Tyr Trp Lys Gln Leu His Thr Ala Ala
 225 230 235 240
 Gly Tyr Lys Glu Ile Leu Thr Pro Gln Leu Met Asn Arg Gln Leu Trp
 245 250 255
 Glu Val Ser Gly His Trp Asp Asn Tyr Lys Ala Asn Met Tyr Thr Leu
 260 265 270
 Gln Ile Asp Asp Glu Asp Tyr Ala Ile Lys Pro Met Asn Cys Pro Gly
 275 280 285
 Cys Met Leu Tyr Tyr Lys Thr Arg Leu His Ser Tyr Lys Glu Phe Pro
 290 295 300
 Leu Arg Val Ala Glu Val Gly His Val His Arg Gln Glu Ala Ser Gly
 305 310 315 320
 Ala Leu Ser Gly Leu Met Arg Val Arg Ala Phe His Gln Asp Asp Ala
 325 330 335
 His Val Phe Leu Thr Pro Glu Gln Val Glu Glu Glu Thr Leu Asn Ile
 340 345 350
 Leu Gln Leu Val Ser Thr Leu Tyr Gly Thr Phe Gly Leu Glu Tyr His
 355 360 365
 Leu Glu Leu Ser Thr Arg Pro Glu Lys Asp Thr Ile Gly Asp Asp Ser
 370 375 380
 Leu Trp Glu Leu Ala Thr Asp Ala Leu Asn Arg Ala Leu Val Gln Ser
 385 390 395 400
 Gly Thr Pro Phe Ile Val Arg Pro Gly Glu Gly Ala Phe Tyr Gly Pro
 405 410 415
 Lys Ile Asp Ile His Val Lys Asp Ala Ile Gln Arg Thr Trp Gln Cys
 420 425 430
 Gly Thr Ile Gln Leu Asp Met Phe Leu Pro Glu Arg Phe Glu Leu Glu
 435 440 445
 Tyr Thr Thr Ala Gln Gly Thr Lys Ser Val Pro Val Met Leu His Arg
 450 455 460
 Ala Leu Phe Gly Ser Ile Glu Arg Phe Leu Gly Ile Leu Ile Glu Asn

465 470 475 480
 Phe Lys Gly Arg Phe Pro Leu Trp Leu Ser Pro Glu Gln Val Arg Ile
 485 490 495
 Ile Thr Val Ala Asp Arg His Ile Pro Arg Ala Lys Glu Leu Glu Glu
 500 505 510
 Ala Trp Lys Arg Leu Gly Leu Val Val Thr Leu Asp Asp Ser Ser Glu
 515 520 525
 Ser Val Ser Lys Lys Ile Arg Asn Ala Gln Asn Met Gln Val Asn Tyr
 530 535 540
 Met Ile Thr Leu Gly Asp His Glu Ile Asn Glu Asn Val Leu Ala Val
 545 550 555 560
 Arg Thr Arg Asp Asn Arg Val Ile Asn Asp Val Ser Val Glu Arg Phe
 565 570 575
 Leu Asn Thr Ile Leu Glu Glu Lys Asn Ser Leu Ser Leu Thr Ala Leu
 580 585 590
 Leu

<210>862

<211>90

<212>PRT

<213>Chlamydia pneumoniae

<400>862

Leu Thr Cys Met Phe Trp Ala Leu Arg Ile Phe Leu Leu Thr Asp Ser
 1 5 10 15
 Leu Glu Ser Ser Lys Val Thr Thr Lys Pro Lys Arg Phe His Ala Ser
 20 25 30
 Ser Ser Ser Phe Ala Leu Gly Ile Trp Arg Ser Ala Thr Val Met Ile
 35 40 45
 Arg Thr Cys Ser Gly Leu Asn His Lys Gly Asn Leu Pro Leu Lys Phe
 50 55 60
 Ser Ile Arg Ile Pro Lys Lys Arg Ser Ile Glu Pro Lys Arg Ala Arg
 65 70 75 80
 Cys Asn Ile Thr Gly Thr Leu Leu Val Pro
 85 90

<210>863

<211>90

<212>PRT

<213>Chlamydia pneumoniae

<400>863

Asn Ala Asn Asn Glu Ser Pro Pro Asn Met Glu Ala Trp Asn Lys Met
 1 5 10 15
 Ile Gln Val Thr Cys Asp Gln Lys Asn Tyr Glu Val Leu Glu Gly Thr
 20 25 30
 Thr Ala Ala Glu Leu Ala Lys Gln Leu Lys Asn Ser His Gln Phe Ile
 35 40 45
 Gly Val Leu Ile Asn Glu Arg Pro Arg Asp Leu Ser Thr His Leu Asn
 50 55 60
 Glu Gly Asp Thr Leu Val Phe Leu Thr Ser Glu Asp Pro Glu Asp Glu
 65 70 75 80
 Lys Phe Phe Phe Ile Leu Leu Pro Ile Phe
 85 90

<210>864

<211>310

<212>PRT

<213>Chlamydia pneumoniae

<400>864

Thr Leu Gln Thr Gly Leu His Met Ser Leu Phe Leu Val Phe Leu Thr
 1 5 10 15
 Ala Phe Ile Trp Ser Ser Ser Ph Ala Leu Ser Lys Leu Val Met Asn
 20 25 30
 Ala Ser Ala Pro Ile Ph Ala Thr Gly Ala Arg Met Val Ile Ala Gly
 35 40 45
 Ala Ile Leu Ala Leu Ala Ala Trp Phe Arg Gly Gly Phe Val Gly Ile
 50 55 60

Ser Lys Lys Ile Phe Leu Tyr Ile Val Leu Leu Ala Leu Thr Gly Phe
 65 70 75 80
 Tyr Leu Thr Asn Ile Phe Glu Phe Ile Gly Leu Gln Ser Leu Ser Ser
 85 90 95
 Ser Lys Thr Cys Phe Ile Tyr Gly Leu Ser Pro Leu Met Ser Ala Leu
 100 105 110
 Phe Ser Tyr Ile Gln Leu Lys Glu Lys Val Thr Leu Lys Lys Val Leu
 115 120 125
 Gly Leu Ser Leu Gly Leu Val Ser Tyr Ile Cys Tyr Leu Thr Phe Gly
 130 135 140
 Gly Gly Gly Asp Asp Ser Gln Pro Trp Thr Trp Gln Ile Gly Leu Pro
 145 150 155 160
 Glu Leu Leu Ile Leu Gly Ala Ala Ser Leu Ala Ser Phe Gly Trp Thr
 165 170 175
 Leu Leu Arg Gln Ile Glu Lys Gln Ser Thr Leu Ser Val Thr Ala Ile
 180 185 190
 Asn Ala Tyr Ala Met Leu Ile Ala Gly Met Leu Ser Ile Met His Ser
 195 200 205
 Ala Val Val Glu Pro Trp Arg Pro Leu Pro Val Gln Asp Ile Ser Gln
 210 215 220
 Phe Leu Tyr Ala Thr Leu Ala Leu Val Val Ile Ser Asn Leu Ile Cys
 225 230 235 240
 Tyr Asn Leu Tyr Ala Lys Leu Leu Arg Lys Tyr Ser Ser Thr Phe Leu
 245 250 255
 Ser Phe Cys Asn Leu Val Met Pro Leu Tyr Ser Gly Phe Tyr Gly Trp
 260 265 270
 Ile Leu Leu Gly Glu Lys Gly Val Ser Leu Gly Leu Val Leu Ala Val
 275 280 285
 Ala Phe Met Val Ala Gly Cys Arg Leu Ile Tyr His Glu Glu Phe Arg
 290 295 300
 Gln Gly Tyr Ile Val Ser
 305 310
 <210>865
 <211>118
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>865
 Lys Ser Leu Gln Arg Tyr Glu Arg Ser Glu Thr Gln Gly Ala Arg Val
 1 5 10 15
 Ala Ser Phe Ala Gly Asn Ala Leu Ser Ser Ser Met Gln Met Ser Gln
 20 25 30
 Leu Met His Gly Leu Thr Ala Ala Val Glu Gly Leu Ser Ala Gly Gln
 35 40 45
 Thr Gly Ile Glu Val Ala His His Gln Arg Leu Ala Gly Gln Ala Glu
 50 55 60
 Ala Gln Ala Glu Val Leu Lys Gln Met Ser Ser Val Tyr Gly Gln Gln
 65 70 75 80
 Ala Gly Gln Ala Gly Gln Leu Gln Glu Gln Ala Met Gln Ser Phe Asp
 85 90 95
 Thr Ala Leu Gln Thr Leu Gln Asn Ile Ala Asp Ser Gln Thr Gln Thr
 100 105 110
 Thr Ser Ala Ile Phe Asn
 115
 <210>866
 <211>392
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>866
 Leu Lys Lys Leu Pro Ser Trp Ala Leu Lys Ser Leu Lys Arg Met Pro
 1 5 10 15
 Gln Ser Ala Glu Pro Ser Trp Arg Ser Ile Lys Pro Ile Ile Phe Lys
 20 25 30
 Gly Ala Cys Ile Ala Met Thr Ser Gly Val Ser Gly Ser Ser Ser Gln
 35 40 45

Asp Pro Thr Leu Ala Ala Gln Leu Ala Gln Ser Ser Gln Lys Ala Gly
 50 55 60
 Asn Ala Gln Ser Gly His Asp Thr Lys Asn Val Thr Lys Gln Gly Ala
 65 70 75 80
 Gln Ala Glu Val Ala Ala Gly Gly Phe Glu Asp Leu Ile Gln Asp Ala
 85 90 95
 Ser Ala Gln Ser Thr Gly Lys Lys Glu Ala Thr Ser Ser Thr Thr Lys
 100 105 110
 Ser Ser Lys Gly Glu Lys Ser Glu Lys Ser Gly Lys Ser Lys Ser Ser
 115 120 125
 Thr Ser Val Ala Ser Ala Ser Lys Thr Ala Thr Ala Gln Ala Val Gln
 130 135 140
 Gly Pro Lys Gly Leu Arg Gln Asn Asn Tyr Asp Ser Pro Ser Leu Pro
 145 150 155 160
 Thr Pro Glu Ala Gln Thr Ile Asn Gly Ile Val Leu Lys Lys Gly Met
 165 170 175
 Gly Thr Leu Ala Leu Leu Gly Leu Val Met Thr Leu Met Ala Asn Ala
 180 185 190
 Ala Gly Glu Ser Trp Lys Ala Ser Phe Gln Ser Gln Asn Gln Ala Ile
 195 200 205
 Arg Ser Gln Val Glu Ser Ala Pro Ala Ile Gly Glu Ala Ile Lys Arg
 210 215 220
 Gln Ala Asn His Gln Ala Ser Ala Thr Glu Ala Gln Ala Lys Gln Ser
 225 230 235 240
 Leu Ile Ser Gly Ile Val Asn Ile Val Gly Phe Thr Val Ser Val Gly
 245 250 255
 Ala Gly Ile Phe Ser Ala Ala Lys Gly Ala Thr Ser Ala Leu Lys Ser
 260 265 270
 Ala Ser Phe Ala Lys Glu Thr Gly Ala Ser Ala Ala Gly Gly Ala Ala
 275 280 285
 Ser Lys Ala Leu Thr Ser Ala Ser Ser Ser Val Gln Gln Thr Met Ala
 290 295 300
 Ser Thr Ala Lys Ala Ala Thr Thr Ala Ala Ser Ser Ala Gly Ser Ala
 305 310 315 320
 Ala Thr Lys Ala Ala Ala Asn Leu Thr Asp Asp Met Ala Ala Ala Ala
 325 330 335
 Ser Lys Met Ala Ser Asp Gly Ala Ser Lys Ala Ser Gly Gly Leu Phe
 340 345 350
 Gly Glu Val Leu Asn Lys Pro Asn Trp Ser Glu Lys Val Ser Arg Gly
 355 360 365
 Met Asn Val Val Lys Leu Arg Glu Arg Val Leu His His Leu Gln Glu
 370 375 380
 Met Leu Phe Leu Pro Leu Cys Lys
 385 390

<210>867

<211>496

<212>PRT

<213>Chlamydia pneumoniae

<400>867

Asp Thr Asn Met Ser Ile Ser Ser Ser Ser Gly Pro Asp Asn Gln Lys
 1 5 10 15
 Asn Ile Met Ser Gln Val Leu Thr Ser Thr Pro Gln Gly Val Pro Gln
 20 25 30
 Gln Asp Lys Leu Ser Gly Asn Glu Thr Lys Gln Ile Gln Gln Thr Arg
 35 40 45
 Gln Gly Lys Asn Thr Glu Met Glu Ser Asp Ala Thr Ile Ala Gly Ala
 50 55 60
 Ser Gly Lys Asp Lys Thr Ser Ser Thr Thr Lys Thr Glu Thr Ala Pro
 65 70 75 80
 Gln Gln Gly Val Ala Ala Gly Lys Glu Ser Ser Glu Ser Gln Lys Ala
 85 90 95
 Gly Ala Asp Thr Gly Val Ser Gly Ala Ala Thr Thr Ala Ser Asn
 100 105 110
 Thr Ala Thr Lys Ile Ala Met Gln Thr Ser Ile Glu Glu Ala Ser Lys

115 120 125
 Ser Met Glu Ser Thr Leu Glu Ser Leu Gln Ser Leu Ser Ala Ala Gln
 130 135 140
 Met Lys Glu Val Glu Ala Val Val Val Ala Ala Leu Ser Gly Lys Ser
 145 150 155 160
 Ser Gly Ser Ala Lys Leu Glu Thr Pro Glu Leu Pro Lys Pro Gly Val
 165 170 175
 Thr Pro Arg Ser Glu Val Ile Glu Ile Gly Leu Ala Leu Ala Lys Ala
 180 185 190
 Ile Gln Thr Leu Gly Glu Ala Thr Lys Ser Ala Leu Ser Asn Tyr Ala
 195 200 205
 Ser Thr Gln Ala Gln Ala Asp Gln Thr Asn Lys Leu Gly Leu Glu Lys
 210 215 220
 Gln Ala Ile Lys Ile Asp Lys Glu Arg Glu Glu Tyr Gln Glu Met Lys
 225 230 235 240
 Ala Ala Glu Gln Lys Ser Lys Asp Leu Glu Gly Thr Met Asp Thr Val
 245 250 255
 Asn Thr Val Met Ile Ala Val Ser Val Ala Ile Thr Val Ile Ser Ile
 260 265 270
 Val Ala Ala Ile Phe Thr Cys Gly Ala Gly Leu Ala Gly Leu Ala Ala
 275 280 285
 Gly Ala Ala Val Gly Ala Ala Ala Gly Gly Ala Ala Gly Ala Ala
 290 295 300
 Ala Ala Thr Thr Val Ala Thr Gln Ile Thr Val Gln Ala Val Val Gln
 305 310 315 320
 Ala Val Lys Gln Ala Val Ile Thr Ala Val Arg Gln Ala Ile Thr Ala
 325 330 335
 Ala Ile Lys Ala Ala Val Lys Ser Gly Ile Lys Ala Phe Ile Lys Thr
 340 345 350
 Leu Val Lys Ala Ile Ala Lys Ala Ile Ser Lys Gly Ile Ser Lys Val
 355 360 365
 Phe Ala Lys Gly Thr Gln Met Ile Ala Lys Asn Phe Pro Lys Leu Ser
 370 375 380
 Lys Val Ile Ser Ser Leu Thr Ser Lys Trp Val Thr Val Gly Val Gly
 385 390 395 400
 Val Val Val Ala Ala Pro Ala Leu Gly Lys Gly Ile Met Gln Met Gln
 405 410 415
 Leu Ser Glu Met Gln Gln Asn Val Ala Gln Phe Gln Lys Glu Val Gly
 420 425 430
 Lys Leu Gln Ala Ala Ala Asp Met Ile Ser Met Phe Thr Gln Phe Trp
 435 440 445
 Gln Gln Ala Ser Lys Ile Ala Ser Lys Gln Thr Gly Glu Ser Asn Glu
 450 455 460
 Met Thr Gln Lys Ala Thr Lys Leu Gly Ala Gln Ile Leu Lys Ala Tyr
 465 470 475 480
 Ala Ala Ile Ser Gly Ala Ile Val Ala Gln His Lys Thr Asn Asn Phe
 485 490 495

<210>868

<211>123

<212>FRT

<213>Chlamydia pneumoniae

<400>868

Gly Glu Ile Met Asn Lys Lys Pro Lys Lys Thr Lys Lys Ala Val Gln
 1 5 10 15
 Ser Lys Ala Ala Pro Val Lys Arg Val Pro Glu Glu Ser Gln Glu Ala
 20 25 30
 Ala Ile Gln Gln Leu Glu Leu Ala Val Ser Asp Leu Tyr Lys Glu Leu
 35 40 45
 Pro Leu Ala Gln Thr Phe Ala Ser Leu Thr Asp Lys Asn Gln Ile Asn
 50 55 60
 Ser Ile Ile Ala Ala Leu Ser Gly Thr Leu Glu Ser Leu His Leu Glu
 65 70 75 80
 Glu Leu Thr Gln Gly Leu Phe Pro Ser Ala Gln Glu Asp Ala Asn Phe
 85 90 95

Ala Lys Glu Leu Ser Ser Val Val His Gly Leu Lys Asn Leu Thr Thr
100 105 110
Val Val Asn Lys Gln Met Val Lys Gly Ala Glu
115 120
<210>869
<211>210
<212>PRT
<213>Chlamydia pneumoniae
<400>869
Lys Asn Ala Asn Arg Leu Ala Glu Leu Ala Ala Gln Lys Lys Ala Lys
1 5 10 15
Ala Asp Asp Leu Glu Gln Val His Pro Val Pro Thr Glu Glu Glu Ile
20 25 30
Lys Lys Ala Leu Gly Asn Ile Phe Glu Gly Leu Ser Asn Gly Leu Asp
35 40 45
Leu Gln Gln Ile Leu Gly Leu Ser Asp Tyr Leu Leu Glu Glu Ile Tyr
50 55 60
Thr Val Ala Tyr Thr Phe Tyr Ser Gln Gly Lys Tyr Asn Glu Ala Val
65 70 75 80
Gly Leu Phe Gln Leu Leu Ala Ala Ala Gln Pro Gln Asn Tyr Lys Tyr
85 90 95
Met Leu Gly Leu Ser Ser Cys Tyr His Gln Leu His Leu Tyr Asn Glu
100 105 110
Ala Ala Phe Gly Phe Phe Leu Ala Phe Asp Ala Gln Pro Asp Asn Pro
115 120 125
Ile Pro Pro Tyr Tyr Ile Ala Asp Ser Leu Leu Lys Leu Gln Gln Pro
130 135 140
Glu Glu Ser Asn Asn Phe Leu Asp Val Thr Met Asp Ile Cys Gly Asn
145 150 155 160
Asn Pro Glu Phe Lys Ile Leu Lys Glu Arg Cys Gln Ile Met Lys Gln
165 170 175
Ser Ile Glu Lys Gln Met Ala Gly Glu Thr Lys Lys Ala Pro Thr Lys
180 185 190
Lys Pro Ala Gly Lys Ser Lys Thr Thr Thr Asn Lys Lys Ser Gly Lys
195 200 205
Lys Arg
210

<210>870
<211>580
<212>PRT
<213>Chlamydia pneumoniae
<400>870
Met Ser Thr Arg Arg Pro Ile Gln Leu Leu Asp Pro Leu Thr Ile Asn
1 5 10 15
Gln Ile Ala Ala Gly Glu Val Ile Glu Asn Ser Val Ser Val Val Lys
20 25 30
Glu Leu Ile Glu Asn Ser Leu Asp Ala Gly Ala Asp Glu Ile Glu Ile
35 40 45
Glu Thr Leu Gly Gly Gly Gln Gly Ala Ile Ile Ile Arg Asp Asn Gly
50 55 60
Cys Gly Phe Arg Ala Glu Asp Ile Pro Ile Ala Leu Gln Arg His Ala
65 70 75 80
Thr Ser Lys Ile Arg Glu Phe Ser Asp Ile Phe Ser Leu Asn Ser Phe
85 90 95
Gly Phe Arg Gly Glu Ala Leu Pro Ser Ile Ala Ser Ile Ser Lys Met
100 105 110
Glu Ile Gln Ser Ser Ile Glu Gly Asp Glu Gly Val Arg Thr Val Ile
115 120 125
His Gly Gly Asp Ile Val Ser Cys Glu Pro Cys Ala Arg Gln Leu Gly
130 135 140
Thr Thr Val Ile Val Asn Ser Leu Phe Tyr Asn Val Pro Val Arg Arg
145 150 155 160
Gly Phe Gln Lys Ser Met Gln Ser Asp Arg Leu Gly Ile Arg Lys Leu
165 170 175

Ile Glu Asn Arg Ile Leu Ser Thr Ala Asn Ile Gly Trp Ser Trp Ile
 180 185 190
 Ser Glu Gly His His Glu Ile Gln Ile Ala Lys Gln Gln Gly Phe Gln
 195 200 205
 Glu Arg Val Ala Tyr Val Met Gly Asp His Phe Met Gln Asp Ala Leu
 210 215 220
 Thr Ile Asp Lys Glu Ala Asn Gly Val Arg Ile Val Gly Val Leu Gly
 225 230 235 240
 Ser Pro Ser Phe His Arg Pro Thr Arg Gln Gly Gln Lys Ile Phe Ile
 245 250 255
 Asn Asp Arg Pro Ile Glu Ser Leu Phe Ile Ser Lys Lys Val Gly Asp
 260 265 270
 Ala Tyr Ala Leu Leu Leu Pro Leu His Arg Tyr Pro Val Phe Val Leu
 275 280 285
 Lys Leu Tyr Leu Pro Ser Ser Trp Cys Asp Phe Asn Val His Pro Gln
 290 295 300
 Lys Ile Glu Ala Arg Ile Leu Lys Glu Glu Leu Val Gly Asp Cys Ile
 305 310 315 320
 Lys Glu Ala Ile Val Glu Thr Leu Ala Cys Pro Pro Gly Ile Leu Cys
 325 330 335
 Arg Thr His Gln Glu Ile Glu Glu Ser Asp Ser Val Pro Leu Pro Met
 340 345 350
 Phe Arg Met Leu Glu Thr Ser Asp Val Gln Glu Glu Glu Ser Val Glu
 355 360 365
 Phe Asp Gln Asn Leu Phe Ala Tyr Ser Ser Glu Asp Val Ser Leu Glu
 370 375 380
 Lys Gln Glu Tyr Thr Ser Arg Gly Pro Lys Ser Gln Met Asp Trp Ile
 385 390 395 400
 Tyr Ser Ser Asp Val Arg Phe Leu Thr Ser Leu Gly Arg Val Val Leu
 405 410 415
 Ala Glu Asp Leu Glu Gly Val His Ile Ile Phe Thr Ala Ala Arg
 420 425 430
 Lys His Leu Phe Phe Leu Ser Leu Met Gln Glu Asn Ser Arg Met Tyr
 435 440 445
 Gln Ser Gln Ala Leu Leu Ile Pro Leu Arg Leu Gln Val Thr Pro Glu
 450 455 460
 Glu Ala Phe Phe Phe Ser His His Gly Arg Thr Leu Cys Asp Leu Gly
 465 470 475 480
 Ile Glu Ile Ser Gln Val Gly Pro Cys Val Phe Ser Ile Glu Ser Thr
 485 490 495
 Pro Thr Val Ile Gly Glu Glu Glu Leu Lys Glu Trp Leu Leu Leu Leu
 500 505 510
 Ala Ala Arg Gly Ser Thr Asp Ile Asn Ser Glu Ala Leu Thr Ala Leu
 515 520 525
 Met Lys Glu Thr Leu Thr Gln Ala Thr Phe Ser Lys His Gln His Val
 530 535 540
 Phe Asp Val Ser Trp Leu Lys Leu Leu Tyr Ser Val Gly Lys Pro Glu
 545 550 555 560
 Lys Gly Phe Asp Gly Ala Arg Ile Arg Arg Leu Ile Leu Asp Ser Asp
 565 570 575
 Phe Met Glu Gly
 580

<210>871

<211>355

<212>PRT

<213>Chlamydia pneumoniae

<400>871

Met Ser His Asp Arg Ile Leu Arg Ala Gln Arg Ala Leu Ser Glu His
 1 5 10 15
 Asn Leu Asp Ala Ile Leu Val Glu Lys Ser Glu Asp Leu Ala Tyr Phe
 20 25 30
 Leu His Asp Glu Ala Ile Ala Gly Ile Leu Leu Ile Gly Gln Gln Glu
 35 40 45
 Val Met Phe Phe Val Tyr Arg Met Asp Lys Asp Leu Tyr Ser His Ile

50 55 60
Gln Arg Val Pro Leu Thr Phe Leu Thr Gln Asp Val Val Ala Asp Leu
65 70 75 80
Ser Leu Tyr Val Gln Lys Gln Arg Tyr Gln Lys Ile Gly Phe Asp Ser
85 90 95
Ala Ser Thr Val Tyr His Lys Phe Ala Gln Arg Gln Val Leu Pro Cys
100 105 110
Leu Trp Glu Pro Leu Glu Cys Phe Thr Glu Lys Ile Arg Ser Ile Lys
115 120 125
Ser Glu Glu Glu Ile Arg Arg Met Gln Glu Ala Ala Leu Gly Ser
130 135 140
Ala Gly Tyr Asp Tyr Val Leu Thr Leu Leu Arg Glu Gly Ile Thr Glu
145 150 155 160
Lys Glu Val Val Arg Gln Leu Arg Ala Phe Trp Ala Glu Ala Gly Ala
165 170 175
Glu Gly Pro Ser Phe Pro Pro Ile Ile Ala Phe Gly Glu His Ser Ala
180 185 190
Phe Pro His Ser Ile Pro Thr Asp Arg Pro Leu Lys Lys Gly Asp Ile
195 200 205
Val Leu Ile Asp Ile Gly Val Leu Leu Asn Gly Tyr Cys Ser Asp Met
210 215 220
Thr Arg Met Thr Ala Leu Gly Thr Pro His Pro Lys Leu Leu Glu Ser
225 230 235 240
Tyr Pro Val Val Val Glu Ala Gln Lys Arg Ala Met Ala Leu Cys Lys
245 250 255
Glu Gly Val Leu Trp Gly Asp Ile Asp Ala Glu Ala Val Arg Val Leu
260 265 270
Arg Glu His His Leu Asp Thr Tyr Phe Ile His Gly Ile Gly His Gly
275 280 285
Val Gly Arg His Ile His Glu Tyr Pro Cys Ser Pro Arg Gly Ser Gln
290 295 300
Val Lys Leu Glu Ser Gly Met Thr Ile Thr Val Glu Pro Gly Val Tyr
305 310 315 320
Phe Pro Gly Ile Gly Gly Ile Arg Ile Glu Asp Thr Leu Cys Ile Asp
325 330 335
Lys Asn Lys Asn Phe Ser Leu Thr Ala Arg Pro Val Ile Ser Glu Leu
340 345 350
Val Cys Leu
355

<210>872

<211>465

<212>PRT

<213>Chlamydia pneumoniae

<400>872

Phe Phe Leu Phe Phe Lys Leu Ser Tyr Asn Phe Ile Phe Asn Leu Pro
1 5 10 15
Leu Thr Met Tyr Gln Leu Leu Ser Ile Gly Tyr Ser Phe Val Ser Phe
20 25 30
Ile Ala Leu Leu Trp Met Leu Cys Tyr Ser Pro Asn Tyr Val Thr Asp
35 40 45
Leu Tyr Arg Ile Ser Leu Ser Ala Glu Glu Ser Leu Gly Gly Ile Arg
50 55 60
Ala Phe Pro Gln Ala Glu Ser Leu Leu Gly Gly Ala Cys Ala Leu Asn
65 70 75 80
Phe Pro Asp Leu Glu Glu Arg Leu Pro Asp Leu Arg Lys Glu Leu Leu
85 90 95
Phe Leu Gly Ser Asn Asp Arg Pro Asp Ala Cys Gly Gly Lys Phe Ser
100 105 110
Leu Gln Leu Ala Ser Ser Lys Glu Cys Tyr Ile Ala Ala Leu Lys Glu
115 120 125
Arg Val Tyr Leu Asn Val Thr Asn Ser Ser Arg Gly Pro Val Tyr Ser
130 135 140
Phe Ser Pro Lys Gly Val Pro Thr Glu Leu Trp Ile Glu Cys Phe Ser
145 150 155 160

Val Ser Val Asp Gly Arg Val Glu Val Lys Val Arg Leu Gln Gly Leu
 165 170 175
 His Lys Glu Leu Ile Ser Lys Pro Arg Asp Cys Glu Thr Leu Phe Leu
 180 185 190
 Asn Pro Pro Ala Asn Lys Leu Asp Cys Trp Glu Ile Ala Gly Phe Arg
 195 200 205
 Val Asp Ala Ser Phe Pro Val Lys Gln Lys Ile Arg Arg Ile Gly Val
 210 215 220
 Asp Lys Phe Leu Leu Met His Gly Gly Ala Glu Tyr Ala Asp Lys Ala
 225 230 235 240
 Thr Lys Glu Arg Val Asp Phe Val Ser Ser Asp Glu Glu Asn Tyr Ser
 245 250 255
 Arg Tyr Leu Ala Val Gly Asp Val Leu Leu Trp Asp Gly Asn Cys Trp
 260 265 270
 Gln Thr Cys Gly Glu Phe Gln Gly Ala Ser Ser Arg Ala Pro Leu Phe
 275 280 285
 Glu Val Lys Arg Ile Asp Asp Lys Val Met Ile Ala Asp Leu Trp Asn
 290 295 300
 Val Gly Gly Thr Gln Arg Gln Thr Ile Ser Leu Val Lys Gly Val Pro
 305 310 315 320
 Ser Pro Ile Glu Ile Asn Glu Val Ile Arg Glu Ile Glu Phe Thr Gly
 325 330 335
 Met Arg Ser Trp Ser Lys Pro Ile Val Leu Val Gly Gly Gln Arg Leu
 340 345 350
 Ile Leu Ser Pro Asp Asp Trp Ile Leu Arg Thr Ala Lys Gly Trp Glu
 355 360 365
 Lys Leu Ser Arg Ala Asp Gln Ile Gln Asp Tyr Val Thr Gly Lys Val
 370 375 380
 Thr Gly Pro Leu Leu Val Phe Glu Lys Leu Glu Lys Asp Leu Arg Gly
 385 390 395 400
 Phe Val Leu Arg Gly His Met Phe Asn Ala Gln Arg Thr Leu Val Glu
 405 410 415
 Thr Ile Ser Leu Pro Leu Lys Gln Gly Phe Glu Pro Ala Val Ala Ser
 420 425 430
 Gln Glu Val Ser Ser Asn Thr Arg Ser Ala Gln His Ile Gln Gly Arg
 435 440 445
 Pro Ile Val Gly Asp His Arg Trp Phe Phe Ser Val Ile Leu Tyr Cys
 450 455 460
 Ile
 465

<210>873

<211>123

<212>PRT

<213>Chlamydia pneumoniae

<400>873

Phe Ser Ser Ser Glu Glu Thr Lys Ser Thr Arg Ser Phe Val Ala Leu
 1 5 10 15
 Ser Ala Tyr Ser Ala Pro Pro Cys Ile Lys Arg Asn Leu Ser Thr Pro
 20 25 30
 Ile Arg Arg Ile Phe Cys Phe Thr Gly Lys Leu Ala Ser Thr Leu Asn
 35 40 45
 Pro Ala Ile Ser Gln Gln Ser Ser Leu Leu Ala Gly Gly Phe Lys Asn
 50 55 60
 Lys Val Ser Gln Ser Arg Gly Phe Glu Ile Asn Ser Leu Cys Lys Pro
 65 70 75 80
 Trp Arg Arg Thr Leu Thr Ser Thr Leu Pro Ser Thr Leu Thr Glu Lys
 85 90 95
 His Ser Ile His Asn Ser Val Gly Thr Pro Leu Gly Leu Asn Glu Tyr
 100 105 110
 Thr Gly Pro Arg Glu Glu Leu Val Thr Phe Lys
 115 120

<210>874

<211>754

<212>PRT

<213>Chlamydia pneumoniae

<400>874

Met	Val	Phe	Phe	Arg	Asn	Ser	Leu	Leu	His	Leu	Val	Ala	Leu	Ser	Gly
1				5					10					15	
Met	Leu	Cys	Cys	Ser	Ser	Gly	Val	Ala	Leu	Thr	Ile	Ala	Glu	Lys	Met
			20					25					30		
Ala	Ser	Leu	Glu	His	Ser	Gly	Arg	Gly	Ala	Asp	Asp	Tyr	Glu	Gly	Met
		35				40					45				
Ala	Ser	Phe	Asn	Ala	Asn	Met	Arg	Glu	Tyr	Ser	Leu	Gln	Leu	Ser	Lys
	50					55					60				
Leu	Tyr	Glu	Glu	Ala	Arg	Lys	Leu	Arg	Ala	Ser	Gly	Thr	Glu	Asp	Glu
65					70					75				80	
Ala	Leu	Trp	Lys	Asp	Leu	Ile	Arg	Arg	Ile	Gly	Glu	Val	Arg	Gly	Tyr
			85						90					95	
Leu	Arg	Glu	Ile	Glu	Glu	Leu	Trp	Ala	Ala	Glu	Ile	Arg	Glu	Lys	Gly
		100						105					110		
Gly	Asn	Leu	Glu	Asp	Tyr	Ala	Leu	Trp	Asn	His	Pro	Glu	Thr	Thr	Ile
	115						120					125			
Tyr	Asn	Leu	Val	Thr	Asp	Tyr	Gly	Thr	Glu	Asp	Ser	Ile	Tyr	Leu	Ile
	130					135					140				
Pro	Gln	Glu	Ile	Gly	Ala	Ile	Lys	Ile	Ala	Thr	Leu	Ser	Lys	Phe	Val
145					150					155				160	
Val	Pro	Lys	Glu	Ser	Phe	Glu	Asp	Cys	Leu	Thr	Gln	Ile	Leu	Ser	Arg
			165						170					175	
Leu	Gly	Ile	Gly	Val	Arg	Gln	Val	Asn	Ser	Trp	Ile	Lys	Glu	Leu	Tyr
		180					185						190		
Met	Met	Arg	Lys	Glu	Gly	Cys	Ser	Val	Ala	Gly	Val	Phe	Ser	Ser	Arg
	195					200						205			
Lys	Asp	Leu	Glu	Ala	Leu	Pro	Glu	Thr	Ala	Tyr	Ile	Gly	Phe	Val	Leu
	210					215					220				
Asn	Ser	Asn	Val	Asp	Ala	His	Thr	Asn	Gln	His	Val	Leu	Lys	Lys	Phe
225					230					235				240	
Ile	Asn	Pro	Glu	Thr	Thr	His	Val	Asp	Val	Ile	Ala	Gly	Arg	Val	Trp
			245						250					255	
Ile	Phe	Gly	Ser	Ala	Gly	Glu	Val	Gly	Glu	Leu	Leu	Lys	Ile	Tyr	Asn
		260				265							270		
Phe	Val	Gln	Ser	Glu	Ser	Ile	Arg	Gln	Glu	Tyr	Arg	Val	Ile	Pro	Leu
	275					280						285			
Thr	Lys	Ile	Asp	Pro	Gly	Glu	Met	Ile	Ser	Ile	Leu	Asn	Ala	Ala	Phe
	290					295					300				
Arg	Glu	Asp	Leu	Thr	Lys	Asp	Val	Ser	Glu	Glu	Ser	Leu	Gly	Leu	Arg
305					310					315				320	
Val	Val	Pro	Leu	Gln	Tyr	Gln	Gly	Arg	Ser	Leu	Phe	Leu	Ser	Gly	Thr
			325						330					335	
Ala	Ala	Leu	Val	Gln	Gln	Ala	Leu	Thr	Leu	Ile	Arg	Glu	Leu	Glu	Glu
		340						345					350		
Gly	Ile	Glu	Asn	Pro	Thr	Asp	Lys	Thr	Val	Phe	Trp	Tyr	Asn	Val	Lys
	355					360						365			
His	Ser	Asp	Pro	Gln	Glu	Leu	Ala	Ala	Leu	Leu	Ser	Gln	Val	His	Asp
	370					375					380				
Val	Phe	Ser	Gly	Glu	Asn	Lys	Ala	Ser	Val	Gly	Ala	Ala	Asp	Gly	Cys
385					390					395				400	
Gly	Ser	Gln	Leu	Asn	Ala	Ser	Ile	Gln	Ile	Asp	Thr	Thr	Val	Ser	Ser
			405						410					415	
Ser	Ala	Lys	Asp	Gly	Ser	Val	Lys	Tyr	Gly	Asn	Phe	Ile	Ala	Asp	Ser
		420						425					430		
Lys	Thr	Gly	Thr	Leu	Ile	Met	Val	Val	Glu	Lys	Glu	Val	Leu	Pro	Arg
	435					440						445			
Ile	Gln	Met	Leu	Leu	Lys	Lys	Leu	Asp	Val	Pro	Lys	Lys	Met	Val	Arg
	450					455					460				
Ile	Glu	Val	Leu	Leu	Phe	Glu	Arg	Lys	Leu	Ala	His	Glu	Gln	Lys	Ser
465					470					475				480	
Gly	Leu	Asn	Leu	Leu	Arg	Leu	Gly	Glu	Glu	Val	Cys	Lys	Lys	Gly	Cys
			485						490					495	

WO 99/27105

Ser Pro Ser Val Ser Trp Ala Gly Gly Thr Gly Ile Leu Glu Phe Leu
 500 505 510
 Phe Lys Gly Ser Thr Gly Ser Ser Ile Val Pro Gly Tyr Asp Leu Ala
 515 520 525
 Tyr Gln Phe Leu Met Ala Gln Glu Asp Val Arg Ile Asn Ala Ser Pro
 530 535 540
 Ser Val Val Thr Met Asn Gln Thr Pro Ala Arg Ile Ala Val Val Asp
 545 550 555 560
 Glu Met Ser Ile Ala Val Ser Ser Asp Lys Asp Lys Ala Gln Tyr Asn
 565 570 575
 Arg Ala Gln Tyr Gly Ile Met Ile Lys Met Leu Pro Val Ile Asn Val
 580 585 590
 Gly Glu Glu Asp Gly Lys Ser Tyr Ile Thr Leu Glu Thr Asp Ile Thr
 595 600 605
 Phe Asp Thr Thr Gly Lys Asn His Asp Asp Arg Pro Asp Val Thr Arg
 610 615 620
 Arg Asn Ile Thr Asn Lys Val Arg Ile Ala Asp Gly Glu Thr Val Ile
 625 630 635 640
 Ile Gly Gly Leu Arg Cys Lys Gln Met Ser Asp Ser His Asp Gly Ile
 645 650 655
 Pro Phe Leu Gly Asp Ile Pro Gly Ile Gly Lys Leu Phe Gly Met Ser
 660 665 670
 Ser Thr Ser Asp Ser Leu Thr Glu Met Phe Val Phe Ile Thr Pro Lys
 675 680 685
 Ile Leu Glu Asn Pro Val Glu Gln Gln Glu Arg Lys Glu Glu Ala Leu
 690 695 700
 Leu Ser Ser Arg Pro Gly Glu Arg Glu Glu Tyr Tyr Gln Ala Leu Ala
 705 710 715 720
 Ala Ser Glu Ala Ala Ala Arg Ala Ala His Lys Lys Leu Glu Met Phe
 725 730 735
 Pro Ala Ser Gly Val Ser Leu Ser Gln Val Glu Arg Gln Glu Tyr Asp
 740 745 750
 Gly Cys

<310>875

<311>453

<212>PRT

<213>Chlamydia pneumoniae

<400>875

Arg Gly Lys Asn Thr Met Ala Ala Ser Ile Leu Ser Gln Glu Leu Leu
 1 5 10 15
 Asp Ile Leu Pro Tyr Thr Phe Leu Lys Lys His Cys Leu Leu Pro Ile
 20 25 30
 Glu Glu Ser Ser Glu Ala Ile Thr Ile Ala His Ala Thr Ala Thr Ser
 35 40 45
 Val Ile Ala Gln Asp Glu Val Lys Leu Leu Ile Lys Lys Pro Val Arg
 50 55 60
 Phe Val Leu Lys Glu Glu Ser Glu Ile Leu Gln Arg Leu Gln Gln Leu
 65 70 75 80
 Tyr Ser Asn Arg Glu Gly Asn Val Ser Asp Met Leu Leu Thr Met Lys
 85 90 95
 Glu Glu Asp Gly Thr Thr Ile Ser Glu Glu Glu Asp Leu Leu Glu Thr
 100 105 110
 Thr Asp Thr Ile Pro Val Val Arg Leu Leu Asn Trp Ile Leu Lys Glu
 115 120 125
 Ala Ile Glu Glu Arg Ala Ser Asp Ile His Phe Glu Pro Cys Glu Asp
 130 135 140
 Ser Met Arg Ile Arg Tyr Arg Ile Asp Gly Val Leu His Asp Arg His
 145 150 155 160
 Ser Pro Pro Ser His Leu Arg Ser Ala Leu Thr Thr Arg Leu Lys Val
 165 170 175
 Leu Ala Lys Met Asp Ile Ala Glu His Arg Leu Pro Gln Asp Gly Arg
 180 185 190
 Ile Lys Ile His Ile Gly Gly Gln Glu Val Asp Met Arg Val Ser Thr

195	200	205
Val Pro Val Ile Tyr Gly Glu Arg Val Val Leu Arg Ile Leu Asp Lys		
210	215	220
Arg Asn Val Ile Leu Asp Ile Ala Gly Leu His Met Pro Lys Gly Thr		
225	230	235
Glu Ile Leu Phe Lys Asp Thr Ile Thr Ala Pro Glu Gly Ile Leu Leu		
245	250	255
Val Thr Gly Pro Thr Gly Ser Gly Lys Thr Thr Thr Leu Tyr Ser Val		
260	265	270
Leu Gln Glu Leu Lys Gly Pro Leu Thr Asn Ile Met Thr Ile Glu Asp		
275	280	285
Pro Pro Glu Tyr Lys Leu Pro Gly Ile Ala Gln Ile Ala Val Lys Pro		
290	295	300
Lys Ile Gly Leu Thr Phe Ala Arg Gly Leu Arg His Leu Leu Arg Gln		
305	310	315
Asp Pro Asp Ile Leu Met Val Gly Glu Ile Arg Asp Gln Glu Thr Ala		
325	330	335
Glu Ile Ala Ile Gln Ala Ala Leu Thr Gly His Leu Val Val Ser Thr		
340	345	350
Leu His Thr Asn Asp Ala Ile Ser Ala Ile Pro Arg Leu Leu Asp Met		
355	360	365
Gly Ile Glu Ser Tyr Leu Leu Ser Ala Thr Leu Val Gly Val Val Ala		
370	375	380
Gln Arg Leu Val Arg Thr Ile Cys Pro Tyr Cys Lys Val Ala Tyr Thr		
385	390	395
Pro Glu Asn Gln Glu Lys Ser Phe Leu Ala Ser Leu Gly Lys Asp Thr		
405	410	415
Glu Met Pro Leu Tyr Arg Gly Gln Gly Cys Val His Cys Phe Val Pro		
420	425	430
Asp Ile Lys Glu Asp Arg Glu Phe Thr Asn Phe Tyr Ala Arg Ile His		
435	440	445
Tyr Phe Val Gln Lys		
450		

<210>876

<211>394

<212>PRT

<213>Chlamydia pneumoniae

<400>876

Gly Gly Arg Met Pro Arg Tyr Arg Tyr Thr Tyr Leu Asp Pro Lys Glu		
1	5	10
Arg Arg Lys Arg Gly Tyr Leu Glu Ala Leu His Ile Gln Glu Ala Arg		
20	25	30
Glu Lys Leu Ala Gln Glu Asn Ile Gln Val Leu Asp Ile Arg Glu Val		
35	40	45
Ala Leu Arg Arg Met Ser Ile Lys Ser Thr Glu Leu Ile Val Phe Thr		
50	55	60
Lys Gln Leu Leu Leu Leu Leu Arg Ser Gly Leu Pro Leu Tyr Glu Ser		
65	70	75
Leu Val Ser Leu Arg Asp Gln Tyr His Glu Gln Lys Met Gly Leu Leu		
85	90	95
Leu Thr Ser Phe Met Glu Thr Leu Arg Ser Gly Gly Ser Leu Ser Gln		
100	105	110
Ala Met Ala Ala His Pro Asn Ile Phe Asp His Phe Tyr Cys Ser Gly		
115	120	125
Val Ala Ala Gly Glu Ser Val Gly Asn Leu Glu Gly Cys Leu Gln Asn		
130	135	140
Ile Ile Val Val Leu Glu Glu Arg Ala Gln Ile Thr Lys Lys Met Val		
145	150	155
Gly Ala Leu Ser Tyr Pro Cys Val Leu Leu Val Phe Ser Phe Ala Val		
165	170	175
Met Leu Phe Phe Leu Leu Gly Val Ile Pro Ser Leu Lys Glu Thr Phe		
180	185	190
Glu Asn Met Glu Val Lys Gly Leu Thr Lys Ile Val Phe Gly Val Ser		
195	200	205

WO 99/27105

Asp Cys Leu Ser Ala Tyr Arg Tyr Leu Phe Leu Gly Phe Ala Ser Ala
 210 215 220
 Leu Ile Thr Val Gly Ile Leu Met Arg His Arg Ile Pro Trp Lys Lys
 225 230 235 240
 Ile Leu Glu Lys Leu Leu Phe Ala Leu Pro Gly Thr Lys Lys Phe Val
 245 250 255
 Val Lys Val Ala Val Asn Arg Phe Cys Ser Val Ala Ser Ala Ile Leu
 260 265 270
 Lys Gly Gly Gly Thr Leu Ile Glu Gly Leu Asp Leu Gly Cys Asp Ala
 275 280 285
 Ile Pro Tyr Asp Arg Leu Lys Thr Asp Met Arg Asp Ile Val Gln Ala
 290 295 300
 Val Ile Gly Gly Gly Ser Leu Ser Gln Glu Leu Ala Gln Arg Ser Trp
 305 310 315 320
 Val Pro Lys Leu Ala Ile Gly Met Ile Ala Leu Gly Glu Glu Ser Gly
 325 330 335
 Asp Leu Ala Asp Val Leu Gly Tyr Val Ala His Ile Tyr Asn Glu Asp
 340 345 350
 Thr Gln Lys Thr Leu Ala Ser Ile Thr Ser Trp Cys Gln Pro Val Ile
 355 360 365
 Leu Ile Phe Leu Gly Gly Leu Ile Gly Val Ile Met Leu Ala Ile Leu
 370 375 380
 Ile Pro Leu Thr Ser Asn Ile Gln Thr Leu
 385 390

<210>877

<211>175

<212>PRT

<213>Chlamydia pneumoniae

<400>877

Gly Tyr Thr Lys Asn Val Gly Phe Asp Asn Val Val Val Ser Thr Arg
 1 5 10 15
 Asp Ser Asp Phe Ser Trp Trp Pro Asp Arg Cys Asp His Val Gly Asn
 20 25 30
 Ile Asp Pro Thr His Lys Gln Tyr Pro Asn Ile Ile Lys Cys Val Leu
 35 40 45
 Arg Gly Val Gly Met Lys Arg Gln Lys Arg Lys Gln Ser Ile Thr Leu
 50 55 60
 Ile Glu Met Met Val Val Ile Thr Leu Ile Gly Ile Ile Gly Gly Ala
 65 70 75 80
 Leu Ala Phe Asn Met Arg Gly Ser Ile His Lys Gly Lys Val Phe Gln
 85 90 95
 Ser Glu Gln Asn Cys Ala Lys Val Tyr Asp Ile Leu Met Met Glu Tyr
 100 105 110
 Ala Thr Gly Gly Ser Ser Leu Lys Glu Ile Ile Ala His Lys Glu Thr
 115 120 125
 Val Val Glu Glu Ala Ser Trp Cys Lys Glu Gly Arg Lys Leu Leu Lys
 130 135 140
 Asp Ala Trp Gly Glu Asp Leu Ile Val Gln Leu Asn Asp Lys Gly Asp
 145 150 155 160
 Asp Leu Val Ile Phe Ser Lys Arg Val Gln Ser Ser Asn Lys Lys
 165 170 175

<210>878

<211>149

<212>PRT

<213>Chlamydia pneumoniae

<400>878

Leu Leu Ser Asn Ile Met Gly Ser Arg Arg Lys Leu Lys Arg Ser Phe
 1 5 10 15
 Leu Leu Ile Glu Val Leu Met Ala Leu Ser Leu Val Cys Ala Val Leu
 20 25 30
 Leu Pro Cys Ile Arg Phe Tyr Tyr Ala Ile His Arg Ser Phe Glu Glu
 35 40 45
 Asp Ile Phe Asn Leu Gln Leu Pro Ala Leu Ile Asp His Cys Phe Leu
 50 55 60

Ser Val Glu Glu Lys Met Arg Gln Gln Met Ala Glu Gly Thr Val Leu
 65 70 75 80
 Thr Ser Gly Lys Gly Gln Thr Val Ser Leu Ala Tyr Thr Ser Gln Gly
 85 90 95
 Ile Gly Tyr Arg Ile Pro Tyr Gly Tyr Asn Val Asp Ile Arg Gln Glu
 100 105 110
 Val Arg Gly Asp Asn Leu Lys Met Lys Val Cys Leu Ala Asp Val Val
 115 120 125
 Val Glu Leu Phe Pro Asp Gln Lys Gln Ala Val Ser Val Gln Arg Cys
 130 135 140
 Leu Cys Val Thr Leu
 145

<210>879

<211>206

<212>PRT

<213>Chlamydia pneumoniae

<400>879

Asp Glu Ser Leu Pro Cys Arg Cys Cys Cys Gly Thr Phe Pro Arg Ser
 1 5 10 15
 Glu Thr Ser Ser Ile Arg Thr Glu Met Pro Met Cys Asn Ser Ile Ala
 20 25 30
 Met Lys Lys Gln Lys Arg Gly Phe Val Leu Met Glu Leu Leu Met Ser
 35 40 45
 Phe Thr Leu Ile Ala Leu Leu Leu Gly Thr Leu Gly Phe Trp Tyr Arg
 50 55 60
 Lys Ile Tyr Thr Val Gln Lys Gln Lys Glu Arg Ile Tyr Asn Phe Tyr
 65 70 75 80
 Ile Glu Glu Ser Arg Ala Tyr Lys Gln Leu Arg Thr Leu Phe Ser Met
 85 90 95
 Ser Leu Ser Ser Ser Tyr Glu Glu Pro Gly Ser Leu Phe Ser Leu Ile
 100 105 110
 Phe Asp Arg Gly Val Tyr Arg Asp Pro Lys Leu Ala Gly Ala Val Arg
 115 120 125
 Ala Ser Leu His His Asp Thr Lys Asp Gln Arg Leu Glu Leu Arg Ile
 130 135 140
 Cys Asn Ile Lys Asp Gln Ser Tyr Phe Glu Thr Gln Arg Leu Leu Ser
 145 150 155 160
 His Val Thr His Val Val Leu Ser Phe Gln Arg Asn Pro Asp Pro Glu
 165 170 175
 Lys Leu Pro Glu Thr Ile Ala Leu Thr Ile Thr Arg Glu Pro Lys Ala
 180 185 190
 Tyr Pro Pro Arg Thr Leu Thr Tyr Gln Phe Ala Val Gly Lys
 195 200 205

<210>880

<211>344

<212>PRT

<213>Chlamydia pneumoniae

<400>880

His Thr Asn Leu Arg Leu Gly Asn Lys Pro Met Gln Pro Phe Ile Phe
 1 5 10 15
 Thr Leu Leu Cys Leu Thr Ser Leu Val Ser Leu Val Ala Phe Asp Ala
 20 25 30
 Ala Asn Ala Arg Lys Arg Cys Ala Cys Ala Gln Thr Ile Glu Arg Gly
 35 40 45
 Glu Asn Phe Phe Ser Ile Lys Arg Ser Ala Cys Ala Glu Ile Glu Tyr
 50 55 60
 Gln Glu Lys Ser Arg His Ala Ser Ala Ile Glu Arg Ile Ser Lys Asp
 65 70 75 80
 Lys Gly Lys Val Thr Pro Lys Gln Ile Ala Lys Val Ala Thr Lys Lys
 85 90 95
 Lys Gln Arg Tyr Arg Leu Leu Gln Val Pro Phe Ser Arg Pro Pro Asn
 100 105 110
 Asn Ser Arg Tyr Asn Leu Tyr Ala Leu Leu Ser Glu Pro Pro Glu Cys
 115 120 125

WO 99/27105

Tyr Ser Asp Thr Ala Ser Trp Tyr Ala Ile Phe Ile Arg Leu Leu Arg
 130 135 140
 Arg Ala Tyr Val Asp Thr Gly Asn Val Pro Pro Gly Ser Glu Tyr Ala
 145 150 155 160
 Ile Ala Asn Ala Leu Ile Ser Asn Lys Gln Glu Ile Leu Glu Arg Gly
 165 170 175
 Ala Gln Leu Gly Pro Asp Val Ile Glu Thr Leu Thr Leu Pro Glu Glu
 180 185 190
 Gln Ala Glu Ile Phe Tyr Lys Met Leu Lys Gly Ser Ser Asn Ser Gln
 195 200 205
 Ser Leu Leu Asn Phe Leu His Tyr Glu Glu Lys Ser Leu Gly His Cys
 210 215 220
 Lys Leu Asn Leu Ile Phe Met Asp Pro Leu Leu Leu Glu Ala Val Leu
 225 230 235 240
 Asp His Pro Asp Ala Tyr Arg Glu Thr Ser Leu Leu Arg Asp Gly Ile
 245 250 255
 Trp Glu Ala Val Lys Arg Gln Glu His Ala Ile Gln Glu His Gly Gln
 260 265 270
 Ala Ala Ala Leu Glu Leu Phe Lys Thr Arg Thr Asp Phe Arg Leu Glu
 275 280 285
 Leu Arg Asp Lys Met Gln Leu Leu Leu Ser Arg Tyr Asp Leu Leu Pro
 290 295 300
 Leu Leu Asn Lys Lys Met Phe Asp Tyr Thr Leu Gly Ser Ala Gly Asp
 305 310 315 320
 Tyr Leu Phe Leu Val Asp Pro Asp Thr Lys Ala Ile Ser Arg Cys Arg
 325 330 335
 Cys Pro Ser Lys Ser Ile Lys Leu
 340

<210>881

<211>95

<212>PRT

<213>Chlamydia pneumoniae

<400>881

Phe Phe Leu Ile Ile Val Leu Ile Ser Thr Ile Lys Asn Ile Ser Ile
 1 5 10 15
 Gly Arg Thr Met Ala Asp Glu Thr Pro Lys Glu Asn Ser Ser Lys Glu
 20 25 30
 Ser Ser Ser Gln Phe Asp Ser Leu Lys Arg Lys Val Lys Asp Leu His
 35 40 45
 Ser Asn Pro Lys Val Gly Lys Trp Lys Lys Phe Leu Ser His Arg Ala
 50 55 60
 Cys Glu Asn Ser Val Val Ala Trp Cys Trp Leu Val Ser Ser Leu Ile
 65 70 75 80
 Leu Phe His Gly Leu Glu Asp Cys Leu Leu Leu Val Val Trp Ser
 85 90 95

<210>882

<211>125

<212>PRT

<213>Chlamydia pneumoniae

<400>882

Ser Arg Glu Met Glu Glu Val Ser Phe Ser Ser Ser Leu Arg Asn Ile
 1 5 10 15
 Gly Gly Cys Leu Val Leu Val Gly Ile Ile Ala Asp Phe Ile Ser Trp
 20 25 30
 Ala Gly Gly Leu Phe Ile Ala Cys Gly Val Val Leu Gly Phe His Val
 35 40 45
 Glu Ile Arg Lys Met Leu Ser Asn Leu Gln Ser Tyr Ser Ile Ala Asn
 50 55 60
 Gly Pro Ile Lys Asn Ala Ile Leu Cys Gly Leu Ile Leu Phe Phe Val
 65 70 75 80
 Leu Asn Ile Pro Ser Phe Ala Val Ser Phe Ile Val Leu Cys Val Ile
 85 90 95
 Leu Ser Phe Ile Thr Thr Ala Pro Ser Cys Ser Thr Cys Ser Lys Asp
 100 105 110

His Cys Asp Lys His Gln Asp Thr Ser Asn Lys Pro Ser
115 120 125

<210>883

<211>305

<212>PRT

<213>Chlamydia pneumoniae

<400>883

Leu Gln Val Arg Phe Ser Lys Thr Ser Ile Asn Gly Asn Lys Glu Leu
1 5 10 15
Met Gly Ile Ser Leu Pro Glu Leu Phe Ser Asn Leu Gly Ser Ala Tyr
20 25 30
Leu Asp Tyr Ile Phe Gln His Pro Pro Ala Tyr Val Trp Ser Val Phe
35 40 45
Leu Leu Leu Leu Ala Arg Leu Leu Pro Ile Phe Ala Val Ala Pro Phe
50 55 60
Leu Gly Ala Lys Leu Phe Pro Ser Pro Ile Lys Ile Gly Ile Ser Leu
65 70 75 80
Ser Trp Leu Ala Ile Ile Phe Pro Lys Val Leu Ala Asp Thr Gln Ile
85 90 95
Thr Asn Tyr Met Asp Asn Asn Leu Phe Tyr Val Leu Leu Val Lys Glu
100 105 110
Met Ile Ile Gly Ile Val Ile Gly Phe Val Leu Ala Phe Pro Phe Tyr
115 120 125
Ala Ala Gln Ser Ala Gly Ser Phe Ile Thr Asn Gln Gln Gly Ile Gln
130 135 140
Gly Leu Glu Gly Ala Thr Ser Leu Ile Ser Ile Glu Gln Thr Ser Pro
145 150 155 160
His Gly Ile Leu Tyr His Tyr Phe Val Thr Ile Ile Phe Trp Leu Val
165 170 175
Gly Gly His Arg Ile Val Ile Ser Leu Leu Leu Gln Thr Leu Glu Val
180 185 190
Ile Pro Ile His Ser Phe Phe Pro Ala Glu Met Met Ser Leu Ser Ala
195 200 205
Pro Ile Trp Ile Thr Met Ile Lys Met Cys Gln Leu Cys Leu Val Met
210 215 220
Thr Ile Gln Leu Ser Ala Pro Ala Ala Leu Ala Met Leu Met Ser Asp
225 230 235 240
Leu Phe Leu Gly Ile Ile Asn Arg Met Ala Pro Gln Val Gln Val Ile
245 250 255
Tyr Leu Leu Ser Ala Leu Lys Ala Phe Met Gly Leu Leu Phe Leu Thr
260 265 270
Leu Ala Trp Trp Phe Ile Ile Lys Gln Ile Asp Tyr Phe Thr Leu Ala
275 280 285
Trp Phe Lys Glu Val Pro Ile Met Leu Leu Gly Ser Asn Pro Gln Val
290 295 300

Leu

305

<210>884

<211>95

<212>PRT

<213>Chlamydia pneumoniae

<400>884

Val Leu Ala Phe Phe Ala Thr Ser Phe Lys Ser Val Leu Phe Glu Tyr
1 5 10 15
Ser Tyr Gln Ser Leu Leu Leu Ile Leu Ile Val Ser Ala Pro Pro Ile
20 25 30
Ile Leu Ala Ser Ile Val Gly Ile Met Val Ala Ile Phe Gln Ala Ala
35 40 45
Thr Gln Ile Gln Glu Gln Thr Phe Ala Phe Ala Val Lys Leu Val Val
50 55 60
Ile Phe Gly Thr Leu Met Ile Ser Gly Gly Trp Leu Ser Asn Met Ile
65 70 75 80
Leu Arg Phe Ala Gly Glu Ile Phe Gln Asn Phe Tyr Lys Trp Lys
85 90 95

<210>885

<211>117

<212>PRT

<213>Chlamydia pneumoniae

<400>885

Arg Thr Phe Ala Leu Phe Leu Asn Ser Gln His Ser Lys Ser Thr Asn
1 5 10 15
Ser Lys Leu Leu Gln Asp Leu Thr Glu Asn Leu Pro Ser Glu Ile Arg
20 25 30
Ala His Leu Thr Ala Ser Asp Phe Val Ile Ile Ile Pro Ala Phe Ile
35 40 45
Met Gly Gln Ile Lys Asn Ala Phe Glu Ile Gly Val Leu Ile Tyr Leu
50 55 60
Pro Phe Phe Val Ile Asp Leu Val Thr Ala Asn Val Leu Val Ala Met
65 70 75 80
Gln Met Met Met Leu Ser Pro Leu Ser Ile Ser Leu Pro Leu Lys Leu
85 90 95
Leu Leu Ile Val Met Val Asp Gly Trp Thr Leu Leu Leu Gln Gly Leu
100 105 110
Met Ile Ser Phe Lys
115

<210>886

<211>257

<212>PRT

<213>Chlamydia pneumoniae

<400>886

Thr Ser His Leu Arg Leu His His Pro Arg Ile Leu Leu Leu Tyr Leu
1 5 10 15
Met Ile Arg Ile Arg Lys Asn Lys Gly Ile His Tyr Tyr Ala Ile His
20 25 30
Phe Ser Ile Phe Pro Leu Phe Phe Tyr Ala Glu Arg Leu Met Leu Phe
35 40 45
Ser Asp Ala Ser Leu Tyr Glu Asn Ser Cys Pro Ser Arg Cys Gln Pro
50 55 60
Thr Pro Pro Pro Ser Asn Ser Asn Pro Leu Asn Val Val Gln Gln Pro
65 70 75 80
Val Ala Ala Ser Ser Val Pro Ser Tyr Met Pro Pro Leu Asn Ala Asp
85 90 95
Asp Val Leu Pro Arg Asp His Leu Ser Asp Gly Ser Phe Ser Asp Thr
100 105 110
Tyr Pro Asp Ile Thr Thr Gln Ala Ile Ile Leu Ile Phe Leu Ala Leu
115 120 125
Ser Pro Phe Leu Val Met Leu Leu Thr Ser Tyr Leu Lys Ile Ile Ile
130 135 140
Thr Leu Val Leu Leu Arg Asn Ala Leu Gly Val Gln Gln Thr Pro Pro
145 150 155 160
Ser Gln val Leu Asn Gly Ile Ala Leu Ile Leu Ser Ile Tyr Val Met
165 170 175
Phe Pro Thr Gly Val Ala Met Tyr Lys Asp Ala Arg Lys Glu Ile Glu
180 185 190
Ala Asn Thr Ile Pro Gln Ser Leu Phe Thr Ala Glu Gly Ala Glu Thr
195 200 205
Val Phe Val Ala Leu Asn Lys Ser Lys Glu Pro Leu Arg Ser Phe Leu
210 215 220
Ile Arg Asn Thr Pro Lys Ala Gln Ile Gln Ser Phe Tyr Lys Ile Ser
225 230 235 240
Gln Lys Thr Phe Leu Arg Lys Phe Glu Arg Thr Ser Leu Pro Pro Thr
245 250 255
Leu

<210>887

<211>108

<212>PRT

<213>Chlamydia pneumoniae

<400>887
 Lys Ser Ser His Lys Ile Asn Ile Ser Leu Leu Ser Val Asn Pro Lys
 1 5 10 15
 Asp Leu Pro Leu Val Glu Lys Ser Arg Pro Glu Leu Lys Asn Ile Val
 20 25 30
 Glu Tyr Ala Asp Ser Leu Ile Leu Thr Ala Lys Pro Asp Val Thr Pro
 35 40 45
 Gly Gly Cys Ile Ile Glu Thr Glu Ala Gly Ile Ile Asn Ala Gln Leu
 50 55 60
 Asp Val Gln Leu Asp Ala Leu Glu Lys Ala Phe Ser Thr Ile Leu Lys
 65 70 75 80
 Ala Lys Asn Pro Val Asp Glu Pro Ser Glu Thr Ser Ser Ser Thr Asp
 85 90 95
 Ser Ser Ser Leu Ser Asn Asp Gln Asp Lys Lys Glu
 100 105

<210>888

<211>140

<212>PRT

<213>Chlamydia pneumoniae

<400>888

Phe Leu Lys Met Met Met Ser Pro Gln Ile Arg Arg Phe Tyr Leu Leu
 1 5 10 15
 Lys Leu Ser Ser Ala Phe Leu Asp Ala Lys Glu Leu Leu Glu Lys Thr
 20 25 30
 Lys Ala Asp Ser Glu Ala Tyr Val Ala Glu Thr Glu Gln Lys Cys Ala
 35 40 45
 Gln Ile Arg Gln Glu Ala Lys Asp Gln Gly Phe Lys Glu Gly Ser Glu
 50 55 60
 Ser Trp Ser Lys Gln Ile Ala Phe Leu Glu Glu Glu Thr Lys Asn Leu
 65 70 75 80
 Arg Ile Arg Val Arg Glu Ala Leu Val Pro Leu Ala Ile Ala Ser Val
 85 90 95
 Arg Lys Ile Ile Gly Lys Glu Leu Glu Leu His Pro Glu Thr Ile Val
 100 105 110
 Ser Ile Ile Ser Gln Ala Leu Lys Glu Leu Thr Gln Asn Lys His Ile
 115 120 125
 Ile Thr Leu Cys Gln Ser Gln Arg Phe Thr Ser Cys
 130 135 140

<210>889

<211>280

<212>PRT

<213>Chlamydia pneumoniae

<400>889

Gly Cys Leu Val Thr Ala Asn Thr Phe Gly Thr Leu Asp Ile Leu Met
 1 5 10 15
 Lys His Ser Lys Glu Asp Asp Leu Ser Arg Phe Leu Pro Lys Asn Leu
 20 25 30
 Leu Val Glu Ser Pro His Pro Glu Glu Ile Pro Leu Lys Ser Leu Ser
 35 40 45
 Phe Thr Met Ser Trp Leu Pro Thr Ile His Pro Ser Trp Ile Thr Ile
 50 55 60
 Ala Met Lys Glu Phe Pro Pro Glu Ile Gln Gly Gln Leu Leu Ala Trp
 65 70 75 80
 Leu Pro Glu Pro Leu Val Gln Glu Ile Leu Leu Leu Pro Gly Ile
 85 90 95
 Ser Ile Ala Pro His Arg Cys Ala Pro Phe Gly Ala Phe Tyr Leu Leu
 100 105 110
 Asp Met Leu Ser Lys Lys Ile Arg Pro Cys Gly Ile Thr Glu Glu Ile
 115 120 125
 Phe Leu Pro Ala Ser Ser Ala Asn Ala Ile Leu Tyr Tyr Thr Gly Pro
 130 135 140
 Val Lys Ile Ala Leu Ile Asn Cys Leu Gly Leu Tyr Ser Ile Ala Lys
 145 150 155 160
 Glu Leu Lys His Ile Leu Asp Lys Val Val Ile Glu Arg Val Lys Asn

165 170 175
 Ala Leu Ser Pro Thr Glu Lys Leu Phe Leu Thr Tyr Cys Gln Ser His
 180 185 190
 Pro Met Lys His Leu Glu Thr Thr Asn Phe Leu Ser Ser Trp Thr Thr
 195 200 205
 Asp Ala Glu Leu Arg Gln Phe Val His Lys Gln Gly Leu Glu Phe Leu
 210 215 220
 Gly Lys Ala Leu Thr Lys Glu Asn Ala Ser Phe Leu Trp Tyr Phe Leu
 225 230 235 240
 Arg Arg Leu Asp Val Gly Arg Ala Tyr Ile Val Glu Gln Thr Leu Lys
 245 250 255
 Thr Trp Tyr Asp His Pro Tyr Val Asp Tyr Phe Lys Ser Arg Leu Glu
 260 265 270
 Gln Cys Met Lys Val Leu Val Lys
 275 280

<210>890

<211>155

<212>PRT

<213>Chlamydia pneumoniae

<400>890

Ala Pro Tyr Cys Lys Cys Cys Ser Arg Thr Cys Ala Arg Glu Arg Leu
 1 5 10 15
 Cys Ser Glu Arg Ser Arg Xaa Tyr Ser Asp Ile Thr Ile Asn Gly Pro
 20 25 30
 Trp Gly Leu Thr Glu Glu Ile Asp Tyr Val Ser Val Trp Gly Ile Ile
 35 40 45
 Leu Ala Lys Ser Ser Leu Thr Lys Phe Arg Leu Ile Phe Tyr Val Leu
 50 55 60
 Ile Leu Ile Leu Phe Val Ile Ser Cys Gly Leu Leu Trp Val Ile Trp
 65 70 75 80
 Lys Thr His Thr Leu Ile Met Thr Met Gly Gly Thr Lys Gly Phe Phe
 85 90 95
 Asn Pro Thr Pro Tyr Thr Lys Asn Ala Leu Glu Ala Lys Lys Ala Glu
 100 105 110
 Gly Ala Ala Ala Asp Lys Glu Lys Lys Glu Asp Ala Asp Ser Gln Gly
 115 120 125
 Glu Ser Lys Asn Ala Glu Thr Ser Asp Lys Asp Ser Ser Asp Lys Asp
 130 135 140
 Ala Pro Glu Gly Ser Asn Glu Ile Glu Gly Ala
 145 150 155

<210>891

<211>214

<212>PRT

<213>Chlamydia pneumoniae

<400>891

Met Val Arg Arg Ser Ile Ser Phe Cys Leu Phe Phe Leu Met Thr Leu
 1 5 10 15
 Leu Cys Cys Thr Ser Cys Asn Ser Arg Ser Leu Ile Val His Gly Leu
 20 25 30
 Pro Gly Arg Glu Ala Asn Glu Ile Val Val Leu Leu Val Ser Lys Gly
 35 40 45
 Val Ala Ala Gln Lys Leu Pro Gln Ala Ala Ala Ala Thr Ala Gly Ala
 50 55 60
 Ala Thr Glu Gln Met Trp Asp Ile Ala Val Pro Ser Ala Gln Ile Thr
 65 70 75 80
 Glu Ala Leu Ala Ile Leu Asn Gln Ala Gly Leu Pro Arg Met Lys Gly
 85 90 95
 Thr Ser Leu Leu Asp Leu Phe Ala Lys Gln Gly Leu Val Pro Ser Glu
 100 105 110
 Leu Gln Glu Lys Ile Arg Tyr Gln Glu Gly Leu Ser Glu Gln Met Ala
 115 120 125
 Ser Thr Ile Arg Lys Met Asp Gly Val Val Asp Ala Ser Val Gln Ile
 130 135 140
 Ser Phe Thr Thr Glu Asn Glu Asp Asn Leu Pro Leu Thr Ala Ser Val

145 150 155 160
Tyr Ile Lys His Arg Gly Val Leu Asp Asn Pro Asn Ser Ile Met Val
165 170 175
Ser Lys Ile Lys Arg Leu Ile Ala Ser Ala Val Pro Gly Leu Val Pro
180 185 190
Glu Asn Val Ser Val Val Ser Asp Arg Ala Xaa Ile Val Ile Leu Gln
195 200 205
Leu Met Val Leu Gly Asp
210

<210>892

<211>224

<212>PRT

<213>Chlamydia pneumoniae

<400>892

Val Leu Phe Leu Ala Tyr Lys Met Ala Gly Leu Gln Ile Ile Ala Thr
1 5 10 15
Arg Ile Leu Asp Ser Phe Leu Leu Pro Cys Phe Glu Val Glu Ala Gln
20 25 30
Thr Phe Pro Gln Val Phe Ser Lys Val Val Val Tyr Lys Tyr Lys Ser
35 40 45
Ser Arg Ile Leu Leu Ile Ala Leu Leu Tyr Asn Ile Thr Leu Val Leu
50 55 60
Gly Leu Ile Phe Ile His Lys Lys Tyr Leu Gly Gln Lys Gly Arg Val
65 70 75 80
Ile Leu Lys Ile Tyr Gln Asn Glu Glu Glu Phe Phe Arg Ala Thr Glu
85 90 95
Arg Phe Pro Ser Ile Gly Ala Gly Tyr Leu Arg Val Arg Asn Lys Asn
100 105 110
Ser Val Leu Phe Pro Phe Glu Asp Leu Met Leu Val Cys Pro Ser Val
115 120 125
Pro Lys Asp Phe Pro Leu Ser Ala Phe Lys Val Thr Thr Lys Leu Ile
130 135 140
Tyr Trp Ser Val Leu Glu Ser Ile Pro Val Val Gly Ala Phe Phe Phe
145 150 155 160
Ser Ile Gly Arg Leu Phe Ala Met Trp Cys Ile Glu Asp Phe Pro Gly
165 170 175
Ser Ile Phe Ser Arg Ile Tyr His Thr Thr Val Gly Val Leu Gly Ile
180 185 190
Leu Gly Leu Gly Ile Ile Met Phe Ile Leu Arg Ile Ile Phe Thr Leu
195 200 205
Leu Thr Leu Pro Phe Trp Leu Ile Ser Cys Leu Lys Ser Ser Ala Ala
210 215 220

<210>893

<211>319

<212>PRT

<213>Chlamydia pneumoniae

<400>893

Val Met Lys Cys Arg Pro Thr Leu Asn Thr Asp Gln Pro Arg Val Arg
1 5 10 15
Lys Lys Leu Pro Glu Arg Phe Pro Lys Trp Leu Gln Arg Pro Leu Pro
20 25 30
Gln Gly Ser Ala Phe His Ala Thr Asp Ala Thr Ile Lys Arg Ser Gly
35 40 45
Met Pro Thr Val Cys Glu Glu Ala Leu Cys Pro Asn Arg Ala Glu Cys
50 55 60
Trp Ser Arg Lys Thr Ala Thr Tyr Leu Ala Leu Gly Asp Val Cys Thr
65 70 75 80
Arg Ser Cys Gly Phe Cys Asn Ile Gly His Ser Lys Thr Pro Pro Ala
85 90 95
Leu Asp Pro Thr Glu Pro Glu Arg Ile Ala Leu Ser Ala Lys Glu Leu
100 105 110
Gly Leu Lys His Val Val Ile Thr Met Val Ala Arg Asp Asp Leu Glu
115 120 125
Asp Gly Gly Ala Gln Gly Leu Val Asp Ile Ile Gln Lys Leu Arg Glu

130 135 140
 Glu Leu Pro Gln Ala Thr Thr Glu Val Leu Ala Ser Asp Phe Gln Gly
 145 150 155 160
 Asn Val Ser Ala Leu His Thr Leu Leu Asp Ser Gly Ile Thr Ile Tyr
 165 170 175
 Asn His Asn Val Glu Thr Val Ala Arg Leu Ser Pro Leu Val Arg His
 180 185 190
 Lys Ala Thr Tyr Ala Arg Ser Met Phe Met Leu Glu Gln Ala Ala Asn
 195 200 205
 Tyr Leu Pro Asp Leu Lys Ile Lys Ser Gly Ile Met Val Gly Leu Gly
 210 215 220
 Glu Met Glu Gly Glu Val Lys Gln Thr Leu Gln Asp Leu Ala Ser Ile
 225 230 235 240
 Gly Val Arg Ile Val Thr Ile Gly Gln Tyr Leu Arg Pro Ser Arg Lys
 245 250 255
 His Leu Gln Val Lys Ser Tyr Val Thr Pro Glu Thr Phe Asp Tyr Tyr
 260 265 270
 Arg Arg Val Gly Glu Ala Met Gly Leu Phe Val Tyr Ala Gly Pro Phe
 275 280 285
 Val Arg Ser Ser Phe Asn Ala Asp Met Ile Leu Ala Ser Val Gln Asp
 290 295 300
 Lys Ala Ser Val Asn Lys His Ser Thr Ile His Leu Ile Glu Ser
 305 310 315
 <210>894
 <211>397
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>894
 Ala Cys Gly Glu Phe Gly Ile His Val Asp Gly Tyr Thr Ile Asp Tyr
 1 5 10 15
 Pro Ala Met Ala Lys Arg Lys Asn Thr Val Val Gln Gly Ile Arg Gln
 20 25 30
 Gly Leu Glu Gly Leu Ile Arg Ser Asn Lys Ile Thr Val Leu Lys Gly
 35 40 45
 Thr Gly Ser Leu Val Ser Ser Thr Glu Val Lys Val Ile Gly Gln Asp
 50 55 60
 Thr Thr Ile Ile Lys Ala Asn His Ile Ile Leu Ala Thr Gly Ser Glu
 65 70 75 80
 Pro Arg Pro Phe Pro Gly Val Pro Phe Ser Ser Arg Ile Leu Ser Ser
 85 90 95
 Thr Gly Ile Leu Glu Leu Glu Val Leu Pro Lys Lys Leu Ala Ile Ile
 100 105 110
 Gly Gly Gly Val Ile Gly Cys Glu Phe Ala Ser Leu Phe His Thr Leu
 115 120 125
 Gly Val Glu Ile Thr Val Ile Glu Ala Leu Asp His Ile Leu Ala Val
 130 135 140
 Asn Asn Lys Glu Val Ser Gln Thr Val Thr Asn Lys Phe Thr Lys Gln
 145 150 155 160
 Gly Ile Arg Ile Leu Thr Lys Ala Ser Ile Ser Ala Ile Glu Glu Ser
 165 170 175
 Gln Asn Gln Val Arg Ile Thr Val Asn Asp Gln Val Glu Glu Phe Asp
 180 185 190
 Tyr Val Leu Val Ala Ile Gly Arg Gln Phe Asn Thr Ala Ser Ile Gly
 195 200 205
 Leu Asp Asn Ala Gly Val Ile Arg Asp Asp Arg Gly Val Ile Pro Val
 210 215 220
 Asp Glu Thr Met Arg Thr Asn Val Pro Asn Ile Tyr Ala Ile Gly Asp
 225 230 235 240
 Ile Thr Gly Lys Trp Leu Leu Ala His Val Ala Ser His Gln Gly Val
 245 250 255
 Ile Ala Ala Lys Asn Ile Ser Gly His His Glu Val Met Asp Tyr Ser
 260 265 270
 Ala Ile Pro Ser Val Ile Phe Thr His Pro Glu Ile Ala Met Val Gly
 275 280 285

Leu	Ser	Leu	Gln	Glu	Ala	Glu	Gln	Gln	Asn	Leu	Pro	Ala	Lys	Leu	Thr
290						295					300				
Lys	Phe	Pro	Phe	Lys	Ala	Ile	Gly	Lys	Ala	Val	Ala	Leu	Gly	Ala	Ser
305					310					315					320
Asp	Gly	Phe	Ala	Ala	Ile	Val	Ser	His	Glu	Ile	Thr	Gln	Gln	Ile	Leu
				325					330					335	
Gly	Ala	Tyr	Val	Ile	Gly	Pro	His	Ala	Ser	Ser	Leu	Ile	Gly	Glu	Met
			340					345					350		
Thr	Leu	Ala	Ile	Arg	Asn	Glu	Leu	Thr	Leu	Pro	Cys	Ile	Tyr	Glu	Thr
		355				360						365			
Val	His	Ala	His	Pro	Thr	Leu	Ser	Glu	Val	Trp	Ala	Glu	Gly	Ala	Leu
	370					375					380				
Leu	Ala	Thr	Asn	His	Pro	Leu	His	Phe	Pro	Pro	Lys	Ser			
385					390						395				

<210>895

<211>97

<212>PRT

<213>Chlamydia pneumoniae

<400>895

Met	Thr	Gln	Glu	Phe	Asp	Cys	Val	Val	Ile	Gly	Ala	Gly	Pro	Ser	Gly
1				5					10					15	
Tyr	Val	Ala	Ala	Ile	Thr	Ala	Ala	Gln	Ser	Lys	Leu	Arg	Thr	Ala	Leu
		20						25					30		
Ile	Gln	Glu	Asp	Gln	Ala	Gly	Gly	Thr	Cys	Leu	Asn	Arg	Gly	Cys	Ile
		35				40						45			
Pro	Ser	Lys	Ala	Leu	Ile	Ala	Gly	Ala	Asn	Val	Val	Ser	His	Ile	Lys
		50				55					60				
His	Ala	Glu	Ser	Ser	Ala	Ser	Met	Leu	Met	Val	Ile	Gln	Ser	Ile	Thr
		65			70					75				80	
Leu	Arg	Trp	Gln	Lys	Glu	Lys	Ile	Gln	Ser	Ser	Arg	Gly	Ser	Val	Lys
			85					90						95	

Asp

<210>896

<211>157

<212>PRT

<213>Chlamydia pneumoniae

<400>896

Lys	Ile	Pro	Met	Pro	Phe	Ala	Lys	Glu	Thr	Glu	Met	Gln	Arg	Thr	Cys
1				5					10					15	
Trp	Lys	Cys	Glu	Gly	Ser	Val	Ser	Met	His	Val	Pro	Gln	Cys	Pro	Tyr
		20						25					30		
Cys	Ser	Ala	Phe	Leu	Gln	Asp	Pro	Pro	Val	Ala	Ser	Gly	Gly	Phe	Ser
		35				40						45			
Ser	Cys	His	Ile	Ser	Phe	Pro	Glu	Gly	Ala	Ser	Lys	Glu	Glu	Ala	Glu
		50				55					60				
Asp	Leu	Phe	Ala	Val	Ser	Glu	Asp	Trp	Glu	Ala	Val	Leu	Gly	Asp	
		65			70				75					80	
Gln	Asn	Pro	Thr	Gln	Glu	Thr	Asn	Lys	Gln	Val	Ile	Pro	Glu	Trp	Thr
			85					90						95	
Trp	Leu	Gln	Ser	Trp	Pro	Leu	Ala	Ala	Leu	Phe	Leu	Gly	Ile	Gly	Leu
		100						105					110		
Leu	Ala	Phe	Ala	Phe	Leu	Ile	Leu	Leu	Phe	Ser	Thr	Asp	Ser	Gly	Leu
		115					120					125			
Val	Leu	Thr	Trp	Pro	Lys	Asn	Arg	Ala	Tyr	Phe	Tyr	Gly	Ile	Ile	Gly
		130				135					140				
Ala	Ala	Val	Ala	Tyr	Arg	Gly	Tyr	Arg	Lys	Leu	Pro	Leu			
145					150						155				

<210>897

<211>170

<212>PRT

<213>Chlamydia pneumoniae

<400>897

Phe Gly Ser Leu Leu Ser Ile Leu Arg Lys Leu Gly Ser Ser Met Leu

1 5 10 15
 Arg Phe Gln Gly Lys Ser Leu Asn Arg Lys Glu Glu Ile Glu Thr Phe
 20 25 30
 Thr Thr Asp Pro Asn Cys Gln Val Phe Val Gly Ser Leu Leu Ala Ala
 35 40 45
 Gly Thr Gly Ile Asn Leu Thr Ala Gly Asn Val Val Ile Met Tyr Asp
 50 55 60
 Arg Trp Trp Asn Pro Ala Lys Glu Asn Gln Ala Leu Asp Arg Val His
 65 70 75 80
 Arg Ile Gly Gln Lys Asn Thr Val Phe Ile Tyr Lys Leu Ile Thr Glu
 85 90 95
 Asp Thr Leu Glu Arg Ile His Tyr Leu Ile Glu Lys Lys Ile Arg
 100 105 110
 Leu Leu Asp Lys Val Ile Ala Ser Gln Asp Ser Asn Ile Leu His Met
 115 120 125
 Leu Asn Arg Glu Asp Leu Leu Thr Ile Leu Ser Tyr Lys Asp Glu His
 130 135 140
 Gly Thr Ser Asp Ser Glu Glu Ser Pro Val Asp Ala Pro Val Glu Asp
 145 150 155 160
 Asp Thr Gly Val Leu Pro Pro Glu Asp Ser
 165 170

<210>898

<211>301

<212>PRT

<213>Chlamydia pneumoniae

<400>898

Leu Tyr Val Gln Gln Ser Val Leu Pro His Trp Glu His Ile Leu Ser
 1 5 10 15
 Asn His Leu Pro Gly Val Ser Ile Phe Ser Phe His Gly Pro Asn Lys
 20 25 30
 Pro Ser Glu Leu Pro Pro Ala Asp Ile Leu Leu Thr Ser Tyr Gly Thr
 35 40 45
 Leu Arg Gln Asn Tyr Asp Lys Phe Tyr Lys Ile Ala Phe Thr Ile Val
 50 55 60
 Val Phe Asp Glu Ile His Met Ala Lys Asn Lys Ser Ser Gln Ile His
 65 70 75 80
 Lys Ile Leu Cys Arg Ile Asp Ala Gln Met Lys Leu Gly Leu Thr Gly
 85 90 95
 Thr Pro Ile Glu Asn Asn Leu Leu Glu Phe Lys Gly Leu Leu Asp Ile
 100 105 110
 Ile Leu Pro Asn Tyr Leu Pro Ser Asp Ala Leu Phe Lys Lys Leu Phe
 115 120 125
 Thr Lys Arg Cys Ser Ser Glu Glu Leu Glu Glu Ile Ile Pro Ser Gln
 130 135 140
 Asp Leu Leu Leu Lys Leu Thr Arg Pro Phe Ile Leu Arg Arg Thr Lys
 145 150 155 160
 Lys Leu Val Leu Pro Glu Leu Pro Asp Lys Val Glu Ser Ile Ile Ala
 165 170 175
 Cys Ser Leu Ser Pro Asp Gln Glu Lys Leu Tyr Met Ala Thr Leu Gln
 180 185 190
 Arg Glu Lys Ser His Ile Gln Lys Leu Glu Thr Pro Glu Glu Pro Ala
 195 200 205
 Thr Asn Phe Leu His Ile Phe Ala Leu Leu Asn His Leu Lys Gln Ile
 210 215 220
 Cys Asp His Pro Ala Val Phe Phe Lys Asp Pro Asp Gln Tyr Lys Asn
 225 230 235 240
 Tyr Glu Ser Gly Lys Trp Asn Ala Phe Val Lys Leu Leu Lys Glu Ser
 245 250 255
 Leu Asn Ala Gly Tyr Lys Val Val Val Phe Ser Gln Tyr Ile His Met
 260 265 270
 Ile Arg Ile Ile Thr Leu Tyr Leu Glu Glu Ile Gly Ile Lys Tyr Ala
 275 280 285
 Ser Ile Ser Arg Lys Ile Ser Glu Ser Glu Gly Arg Asn
 290 295 300

<210>899
 <211>610
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>899

Kaa	Pro	Leu	Ser	Ile	Ala	Leu	Leu	Lys	Lys	Phe	Phe	Phe	Leu	Asn	Glu
1				5					10					15	
Glu	Gly	Ala	Glu	Leu	Thr	Ile	Gly	Glu	Asn	Ser	Gln	Gly	Phe	Pro	Ser
		20					25					30			
His	Phe	Ser	Leu	Gln	Trp	Gln	Gly	Leu	Val	Phe	Lys	Ala	Glu	Ile	Leu
		35				40						45			
Asp	Phe	Pro	Thr	Leu	Glu	Asp	Ile	Phe	Pro	Lys	Leu	Glu	Leu	Ala	His
	50				55						60				
Thr	Ser	Leu	Glu	Asn	Val	Ser	His	Asp	Ile	Ser	Ile	Thr	Asn	Val	Thr
	65				70					75				80	
Val	Cys	Ala	Glu	Glu	Ala	Lys	Val	Asn	Phe	Thr	Leu	Ser	Pro	Val	Ile
			85						90					95	
His	Lys	Lys	Asp	Arg	Glu	Asn	His	Pro	Lys	Thr	Arg	Ile	Gly	Ser	Val
			100					105					110		
Glu	Tyr	Val	Ala	Lys	Thr	His	Glu	Met	Ile	Thr	Gly	Pro	Lys	Ala	Ile
		115					120					125			
Ala	Leu	Pro	Ile	Tyr	Ala	Ile	Pro	Leu	Leu	Ala	Asp	Lys	Phe	Lys	Asp
	130					135					140				
Gln	Leu	Leu	Ser	Leu	Leu	Cys	Tyr	Asp	Ser	Leu	Glu	Tyr	Arg	Leu	Arg
	145				150					155				160	
Tyr	Asp	Ile	Arg	Leu	Leu	Arg	Asp	Ala	Ser	Phe	Ser	Phe	Ser	Ala	Tyr
			165						170					175	
Leu	Val	Thr	Pro	Gly	Asp	Leu	Asp	Asn	Gly	Ser	Leu	Ile	Tyr	Pro	Asn
		180					185						190		
Tyr	Cys	Tyr	Ser	Pro	Thr	Lys	Gly	Leu	Met	Gln	Val	Val	Gly	Met	Leu
		195					200					205			
Ser	Pro	Lys	Gln	Ala	Phe	Ile	Val	Lys	Ser	Glu	Gln	Val	Glu	Asp	Phe
	210					215					220				
Leu	Asn	Glu	Arg	Gly	His	Leu	Ile	Gln	Glu	Pro	Gly	Phe	Gln	Thr	Phe
	225				230					235				240	
Ile	Asn	Glu	Arg	Pro	Glu	Gly	His	Leu	Thr	Tyr	Asn	Val	Thr	Glu	Gln
			245						250					255	
Gly	Val	Leu	Leu	Phe	His	Tyr	Asp	Val	Gly	Asp	Pro	Ser	Ser	Thr	Glu
		260					265						270		
Ile	Arg	Phe	Gly	Thr	Trp	Thr	Tyr	Tyr	Thr	Asn	Gln	Gly	Phe	Phe	Leu
	275						280					285			
Glu	Lys	Lys	Asn	Asp	Leu	Pro	Ile	Gln	Asp	Gly	Leu	Ile	Val	Glu	Pro
	290					295					300				
Gln	Asp	Ile	Pro	Ala	Phe	Ile	Val	Lys	Asn	Asp	Ala	Ala	Leu	Arg	Arg
	305				310					315				320	
Leu	Pro	Asn	Phe	Phe	Ser	Ser	Pro	Pro	Asn	Leu	Lys	Asp	Leu	Leu	Ile
			325						330					335	
Glu	Val	His	Arg	Gln	Ser	Arg	Gly	Lys	Gly	Leu	Asp	Leu	Lys	Pro	Ile
		340					345						350		
Leu	Val	Gly	Leu	Gly	Glu	Ser	Arg	Cys	Trp	Leu	Phe	Gly	Val	Phe	Leu
		355					360					365			
Tyr	Arg	Glu	Asp	Ile	Gly	Phe	Ser	Leu	Ile	Pro	Thr	Pro	Leu	Gln	Gly
	370					375					380				
Leu	Cys	Phe	Leu	Pro	Arg	Val	Ile	Pro	Pro	Glu	Asn	Val	Pro	Gln	Phe
	385				390					395				400	
Leu	Thr	Gln	Tyr	Ala	Gln	His	Glu	Arg	Ile	Leu	Phe	Pro	Asn	Pro	Gln
			405					410						415	
Thr	Arg	Pro	Pro	Glu	Ser	Tyr	Glu	Leu	Val	Ile	Gln	Ser	Ile	His	Arg
		420					425						430		
Pro	His	Pro	Ala	Ser	Pro	Leu	His	Leu	Gln	Leu	Glu	Leu	Lys	Thr	Asn
		435					440					445			
Leu	Gly	Ser	Val	Pro	Ile	Gly	Ile	Ala	Leu	Gln	Gly	Leu	Lys	Ser	Lys
	450					455					460				
His	Thr	Phe	Leu	Phe	Thr	Gln	Ala	Gly	Phe	Leu	Asp	Leu	Lys	Gln	Asn

WO 99/27105

465 470 475 480
 Leu Phe Gln Phe Leu Lys Gln Phe Leu Ser Thr Gln Lys Cys Val Ile
 485 490 495
 Ala Glu Asn Thr Val Ile Ala Asn Ile Thr Asp Val Phe Lys Leu Asp
 500 505 510
 Ala Leu Ala Pro Leu Ser Val Thr Asp Asp Thr Ile Ala Asn Pro Glu
 515 520 525
 Asp Leu Gln Phe Phe Ser Gln Leu Lys Ala Ala Cys Leu Pro Pro Ile
 530 535 540
 Pro Gln Asn Leu Phe Ser Ser Asp His Gln Leu Arg Pro Tyr Gln Asn
 545 550 555 560
 Ser Gly Leu Leu Trp Met Trp Phe Leu Tyr Asn His Arg Leu Ser Gly
 565 570 575
 Leu Leu Cys Asp Glu Met Gly Leu Gly Lys Thr His Gln Ala Thr Ala
 580 585 590
 Leu Thr Arg Tyr Cys Ile Ser Val Phe Thr Ala Leu Ser Ala Pro Glu
 595 600 605

Ile Pro

610

<210>900

<211>181

<212>PRT

<213>Chlamydia pneumoniae

<400>900

His Asn Ile Met Val Leu Glu Ala Leu Ala Ile Phe Arg Gln Asp Ala
 1 5 10 15
 Met Gln His Leu Leu Lys His Arg Lys Glu Ile Val Val Asp Phe Cys
 20 25 30
 Glu Asp Ser Tyr Thr Ile Arg Ile Pro Asp Glu Glu Ala Pro Glu Gly
 35 40 45
 Tyr Trp Leu Ser Thr Leu Lys Leu Gln Asp Ile Asp Arg Leu Thr Phe
 50 55 60
 Ala Ser Cys Ser Cys Pro Asp Gly Glu Cys Cys Leu His Leu Met Thr
 65 70 75 80
 Ala Tyr Phe Ala Val Tyr Asp Ala Leu Gly Leu His Pro Leu His Asp
 85 90 95
 Lys Phe Arg His Ser Phe Trp Tyr Ala Val Phe Ser His Phe Phe Leu
 100 105 110
 Asp Ser Ile Pro Leu Gln Ala Gln Gly Glu Met Val Tyr Thr Leu Glu
 115 120 125
 Ser Pro His Ile Thr Leu Thr Ile Glu Cys Leu Ser Glu Glu Val Phe
 130 135 140
 Gln Asp Trp Leu Arg Thr Ile His Ala Ser Glu Glu Pro Thr Val Phe
 145 150 155 160
 Thr Asn Lys Thr Phe Leu Xaa Ser Ala Leu Tyr Arg Thr Ala Lys Lys
 165 170 175
 Ile Leu Phe Leu Lys
 180

<210>901

<211>412

<212>PRT

<213>Chlamydia pneumoniae

<400>901

Met Lys Lys Asn Ala Ser His Lys Thr Asn Asp Lys Lys Ser Leu Ser
 1 5 10 15
 Ile Trp Ser Ile Gly Gly Ser Ile Phe Ala Met Phe Phe Gly Ala Gly
 20 25 30
 Asn Ile Val Phe Pro Leu Ala Leu Gly Tyr His Tyr Asn Ala His Pro
 35 40 45
 Trp Ser Ala Tyr Phe Gly Met Met Leu Thr Ala Val Cys Val Pro Leu
 50 55 60
 Leu Gly Leu Val Ser Met Leu Phe Tyr Ser Gly Asp Tyr Gln Lys Phe
 65 70 75 80
 Phe Phe Ser Ile Gly Arg Ile Pro Gly Met Ile Phe Ile Thr Ala Ile

WO 99/27105

Gln Arg Trp Lys Ile Ser Glu Lys Lys Ser Pro Ser Ala Ala Glu Lys
 145 150 155 160
 Asp Leu Ala Arg Phe Phe Gly His Glu Asn Thr Pro Lys Leu His Leu
 165 170 175
 Gln Leu Ile Tyr Tyr Ala Arg Gln Tyr Cys Pro Ala Leu His His Lys
 180 185 190
 Ile Asp Asn Cys Pro Ile Cys Ser Tyr Leu Ala Lys Glu Ala Asn Ser
 195 200 205
 Thr Arg Thr
 210
 <210>903
 <211>442
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>903
 Met Leu Lys His Asp Thr Ile Ala Ala Ile Ala Thr Pro Pro Gly Glu
 1 5 10 15
 Gly Ser Ile Ala Val Val Arg Leu Ser Gly Pro Gln Ala Ile Val Ile
 20 25 30
 Ala Asp Arg Ile Phe Ser Gly Ser Val Ala Ser Phe Ala Ser His Thr
 35 40 45
 Ile His Leu Gly Gln Val Ile Phe Glu Glu Thr Leu Ile Asp Gln Ala
 50 55 60
 Leu Leu Leu Leu Met Arg Ser Pro Arg Ser Phe Thr Gly Glu Asp Val
 65 70 75 80
 Val Glu Phe Gln Cys His Gly Gly Phe Phe Ala Cys Ser Gln Ile Leu
 85 90 95
 Asp Ala Leu Ile Ala Leu Gly Ala Arg Pro Ala Leu Pro Gly Glu Phe
 100 105 110
 Ser Gln Arg Ala Phe Leu Asn Gly Lys Ile Asp Leu Val Gln Ala Glu
 115 120 125
 Ala Ile Gln Asn Leu Ile Val Ala Glu Asn Ile Asp Ala Phe Arg Ile
 130 135 140
 Ala Gln Thr His Phe Gln Gly Asn Phe Ser Lys Lys Ile Gln Glu Ile
 145 150 155 160
 His Thr Leu Ile Ile Glu Ala Leu Ala Phe Leu Glu Val Leu Ala Asp
 165 170 175
 Phe Pro Glu Glu Glu Gln Pro Asp Leu Leu Val Pro Gln Glu Lys Ile
 180 185 190
 Gln Asn Ala Leu His Ile Val Glu Asp Phe Ile Ser Ser Phe Asp Glu
 195 200 205
 Gly Gln Arg Leu Ala Gln Gly Thr Ser Leu Ile Leu Ala Gly Lys Pro
 210 215 220
 Asn Val Gly Lys Ser Ser Leu Leu Asn Ala Leu Leu Gln Lys Asn Arg
 225 230 235 240
 Ala Ile Val Thr His Ile Pro Gly Thr Thr Arg Asp Ile Leu Glu Glu
 245 250 255
 Gln Trp Leu Leu Gln Gly Lys Arg Ile Arg Leu Leu Asp Thr Ala Gly
 260 265 270
 Gln Arg Thr Thr Asp Asn Asp Ile Glu Lys Glu Gly Ile Glu Arg Ala
 275 280 285
 Leu Ser Ala Met Glu Glu Ala Asp Gly Ile Leu Trp Val Ile Asp Ala
 290 295 300
 Thr Gln Pro Leu Glu Asp Leu Pro Lys Ile Leu Phe Thr Lys Pro Ser
 305 310 315 320
 Phe Leu Leu Trp Asn Lys Ala Asp Leu Thr Pro Pro Pro Phe Leu Asp
 325 330 335
 Thr Ser Leu Pro Gln Phe Ala Ile Ser Ala Lys Thr Gly Glu Gly Leu
 340 345 350
 Thr Gln Val Lys Gln Ala Leu Ile Gln Trp Met Gln Lys Gln Glu Ala
 355 360 365
 Gly Lys Thr Ser Lys Val Phe Leu Val Ser Ser Arg His His Met Ile
 370 375 380
 Leu Gln Glu Val Ala Arg Cys Leu Lys Glu Ala Gln Lys Asn Leu Tyr

385 390 395 400
 Leu Gln Pro Pro Glu Ile Ile Ala Leu Glu Leu Arg Glu Ala Leu His
 405 410 415
 Ser Ile Gly Met Leu Ser Gly Lys Glu Val Thr Glu Ser Ile Leu Gly
 420 425 430
 Glu Ile Phe Ser Lys Phe Cys Ile Gly Lys
 435 440

<210>904

<211>303

<212>PRT

<213>Chlamydia pneumoniae

<400>904

Gly Leu Val Gln Lys Pro Gln Tyr Ile Asp Arg Ile Thr Lys Lys Lys
 1 5 10 15
 Val Ile Glu Pro Ile Phe Tyr Glu Lys Thr Met Leu Phe Leu Tyr Asn
 20 25 30
 Ser Lys Leu Gly Lys Lys Leu Ser Val Phe Leu Ser Thr His Pro Ile
 35 40 45
 Phe Ser Arg Ile Tyr Gly Trp Leu Gln Arg Cys Ser Trp Thr Arg Arg
 50 55 60
 Gln Ile Arg Pro Phe Met Asn Arg Tyr Lys Ile Ser Glu Lys Glu Leu
 65 70 75 80
 Thr Lys Pro Val Ala Asp Phe Thr Ser Phe Asn Asp Phe Phe Thr Arg
 85 90 95
 Lys Leu Lys Pro Glu Ala Arg Pro Ile Val Gly Gly Lys Glu Val Phe
 100 105 110
 Ile Thr Pro Val Asp Gly Arg Tyr Leu Val Tyr Pro Asn Val Ser Glu
 115 120 125
 Phe Asp Lys Phe Ile Val Lys Ser Lys Ala Phe Ser Leu Pro Lys Leu
 130 135 140
 Leu Gly Asp His Glu Leu Thr Lys Leu Tyr Ala His Gly Ser Ile Val
 145 150 155 160
 Phe Ala Arg Leu Ala Pro Phe Asp Tyr His Arg Phe His Phe Pro Cys
 165 170 175
 Asp Cys Leu Pro Gln Lys Thr Arg Cys Val Asn Gly Ala Leu Phe Ser
 180 185 190
 Val His Pro Leu Ala Val Lys Asp Asn Phe Ile Leu Phe Cys Glu Asn
 195 200 205
 Lys Arg Thr Val Thr Val Leu Glu Thr Glu Gln Phe Gly Asn Val Leu
 210 215 220
 Tyr Leu Glu Val Gly Ala Met Asn Val Gly Ser Ile Val Gln Thr Phe
 225 230 235 240
 Ser Pro Asn Gln Thr Tyr Ala Lys Gly Asp Glu Lys Gly Phe Phe Ala
 245 250 255
 Phe Gly Gly Ser Thr Val Ile Leu Leu Phe Leu Pro Asn Ala Ile Arg
 260 265 270
 Phe Asp Asn Asp Leu Leu Lys Asn Ser Arg Met Gly Phe Glu Thr Arg
 275 280 285
 Cys Leu Met Gly Gln Ser Leu Gly Arg Ser Gln Arg Glu Glu Ile
 290 295 300

<210>905

<211>458

<212>PRT

<213>Chlamydia pneumoniae

<400>905

Ile Ser Glu Arg Arg Asn Leu Lys Thr Leu Lys Thr Phe Phe Gly Ile
 1 5 10 15
 Ala Lys Arg Asp Lys Ser Gln Lys Trp Arg Ile Met Trp Leu Val Ile
 20 25 30
 Leu Trp Ala Leu Ala Ala Ser Leu Ala Ile Ala Leu Val Ala Lys Gly
 35 40 45
 Tyr Tyr Arg Phe Val Tyr Phe Arg Arg Tyr Ala Val Gln Val Ile Arg
 50 55 60
 Glu Val Arg Leu Ser Met Glu Leu Lys Glu Trp Ala Leu Ala Glu Gln

WO 99/27105

65 70 75 80
 Gln Leu Leu Pro Ile Leu Lys Lys Arg Ser Tyr Arg Arg Gln Cys Leu
 25 90 95
 Phe Glu Tyr Met Arg Ile Leu Arg Lys Met Gln Arg Phe Glu Glu Ser
 100 105 110
 Glu Lys Leu Leu Ala Glu Ala Lys Lys Leu Gly Leu Arg Gly Pro Tyr
 115 120 125
 Phe Phe Leu Glu Ile Ala Tyr Lys Ala Tyr Arg Phe Gly Ala Phe Lys
 130 135 140
 Glu Cys Ala Gln Ala Phe Ala Ser Val Pro Gln Asp Leu Phe Glu Glu
 145 150 155 160
 Glu Asp Ala Ala Lys Tyr Ala Ser Ala Leu Val Arg Leu Gly Asp Leu
 165 170 175
 Asp Ala Ala Cys Ser Leu Ile Glu Pro Trp Ile Ser Pro Leu Ser His
 180 185 190
 Gln Glu Thr Phe Val Thr Met Gly His Ile Tyr Phe Thr Ser Lys Arg
 195 200 205
 Tyr Lys Asp Ala Ile Asp Phe Tyr Asn Arg Ala Asn Ala Leu Gly Val
 210 215 220
 Cys Pro Val Glu Val Thr Tyr Asn Leu Ala Gln Ala Tyr Arg Ile Thr
 225 230 235 240
 Ser Ser Tyr Ala Lys Ala Gly Lys Leu Phe Arg Lys Leu Leu Ser Asn
 245 250 255
 Pro Val Tyr Lys Glu Glu Ala Leu Phe Asn Ile Gly Leu Cys Glu Gln
 260 265 270
 Lys Leu Gly Arg Pro Gly Lys Ala Leu Leu Ile Tyr Gln Ser Ser Asp
 275 280 285
 Leu Trp Ser Arg Gly Asp Ala Leu Leu Met Lys Tyr Ala Ala Met Ala
 290 295 300
 Ala Met Asp Gln Arg Asp Tyr Val Leu Ala Glu Pro Cys Trp Glu Leu
 305 310 315 320
 Ala Leu Arg Cys Ser Thr Phe Ala Lys Asp Tyr Lys Cys Gly Leu Gly
 325 330 335
 Tyr Gly Phe Ser Leu Cys Arg Leu Arg Lys Tyr Gly Asp Ala Glu Arg
 340 345 350
 Val Tyr Cys Asn Leu Ile Gln Asn Phe Pro Glu Cys Leu Thr Ala Cys
 355 360 365
 Lys Ala Leu Ala Trp Leu Cys Gly Val Gly Tyr Ala Thr Leu Leu Gly
 370 375 380
 Ser Glu Glu Gly Leu Met Tyr Ala Lys Lys Ala Val Glu Leu Asp His
 385 390 395 400
 Ser Cys Glu Thr Leu Glu Leu Leu Ser Ala Cys Glu Ala Arg Cys Gly
 405 410 415
 Asn Phe Asp Ala Ala Tyr Glu Ile Gln Ser Phe Leu Ser Ser Arg Asp
 420 425 430
 Thr Ser Leu Gln Glu Lys Gln Arg Arg Ser Gln Ile Leu Arg Ile Leu
 435 440 445
 Arg Lys Lys Leu Pro Leu Asn Asp His His Ile Val Glu Val Asp Ala
 450 455 460
 Leu Leu Ala Ala
 465
 <210>906
 <211>970
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>906
 Met Leu Gly Phe Leu Lys Arg Phe Phe Gly Ser Ser Gln Glu Arg Ile
 1 5 10 15
 Leu Lys Lys Phe Gln Lys Leu Val Asp Lys Val Asn Ile Tyr Asp Glu
 20 25 30
 Met Leu Thr Pro Leu Ser Asp Asp Glu Leu Arg Asn Lys Thr Ala Glu
 35 40 45
 Leu Lys Gln Arg Tyr Gln Asn Gly Glu Ser Leu Asp Ser Met Leu Pro
 50 55 60

Glu Ala Tyr Gly Val Val Lys Asn Val Cys Arg Arg Leu Ala Gly Thr
 65 70 75 80
 Pro Val Glu Val Ser Gly Tyr His Gln Arg Trp Asp Met Val Pro Tyr
 85 90 95
 Asp Val Gln Ile Leu Gly Ala Ile Ala Met His Lys Gly Phe Ile Thr
 100 105 110
 Glu Met Gln Thr Gly Glu Gly Lys Thr Leu Thr Ala Val Met Pro Leu
 115 120 125
 Tyr Leu Asn Ala Leu Thr Gly Lys Pro Val His Leu Val Thr Val Asn
 130 135 140
 Asp Tyr Leu Ala Gln Arg Asp Cys Glu Trp Val Gly Ser Val Leu Arg
 145 150 155 160
 Trp Leu Gly Leu Thr Thr Gly Val Leu Val Ser Gly Thr Leu Leu Glu
 165 170 175
 Lys Arg Lys Lys Ile Tyr Gln Cys Asp Val Val Tyr Gly Thr Ala Ser
 180 185 190
 Glu Phe Gly Phe Asp Tyr Leu Arg Asp Asn Ser Ile Ala Thr Arg Leu
 195 200 205
 Glu Glu Gln Val Gly Arg Gly Tyr Tyr Phe Ala Ile Ile Asp Glu Val
 210 215 220
 Asp Ser Ile Leu Ile Asp Glu Ala Arg Thr Pro Leu Ile Ile Ser Gly
 225 230 235 240
 Pro Gly Glu Lys His Asn Pro Val Tyr Phe Glu Leu Lys Glu Lys Val
 245 250 255
 Ala Ser Leu Val Tyr Leu Gln Lys Glu Leu Cys Ser Arg Ile Ala Leu
 260 265 270
 Glu Ala Arg Arg Gly Leu Asp Ser Phe Leu Asp Val Asp Ile Leu Pro
 275 280 285
 Lys Asp Lys Lys Val Leu Glu Gly Ile Ser Glu Phe Cys Arg Ser Leu
 290 295 300
 Trp Leu Val Ser Lys Gly Met Pro Leu Asn Arg Val Leu Arg Arg Val
 305 310 315 320
 Arg Glu His Pro Asp Leu Arg Ala Met Ile Asp Lys Trp Asp Val Tyr
 325 330 335
 Tyr His Ala Glu Gln Asn Lys Glu Glu Ser Leu Glu Arg Leu Ser Glu
 340 345 350
 Leu Tyr Ile Ile Val Asp Glu His Asn Asn Asp Phe Glu Leu Thr Asp
 355 360 365
 Lys Gly Met Gln Gln Trp Val Glu Tyr Ala Gly Gly Ser Thr Glu Glu
 370 375 380
 Phe Val Met Met Asp Met Gly His Glu Tyr Ala Leu Ile Glu Asn Asp
 385 390 395 400
 Glu Thr Leu Ser Pro Ala Asp Lys Ile Asn Lys Lys Ile Ala Ile Ser
 405 410 415
 Glu Glu Asp Thr Leu Arg Lys Ala Arg Ala His Gly Leu Arg Gln Leu
 420 425 430
 Leu Arg Ala Gln Leu Leu Met Glu Arg Asp Val Asp Tyr Ile Val Arg
 435 440 445
 Asp Asp Gln Ile Val Ile Ile Asp Glu His Thr Gly Arg Pro Gln Pro
 450 455 460
 Gly Arg Arg Phe Ser Glu Gly Leu His Gln Ala Ile Glu Ala Lys Glu
 465 470 475 480
 His Val Thr Ile Arg Lys Glu Ser Gln Thr Leu Ala Thr Val Thr Leu
 485 490 495
 Gln Asn Phe Phe Arg Leu Tyr Glu Lys Leu Ala Gly Met Thr Gly Thr
 500 505 510
 Ala Ile Thr Glu Ser Arg Glu Phe Lys Glu Ile Tyr Asn Leu Tyr Val
 515 520 525
 Leu Gln Val Pro Thr Phe Lys Pro Cys Leu Arg Ile Asp His Asn Asp
 530 535 540
 Glu Phe Tyr Met Thr Glu Arg Glu Lys Tyr His Ala Ile Val Asn Glu
 545 550 555 560
 Ile Ala Thr Ile His Gly Lys Gly Asn Pro Ile Leu Val Gly Thr Glu
 565 570 575

Ser Val Glu Val Ser Glu Lys Leu Ser Arg Ile Leu Arg Gln Asn Arg
 580 585 590
 Ile Glu His Thr Val Leu Asn Ala Lys Asn His Ala Gln Glu Ala Glu
 595 600 605
 Ile Ile Ala Gly Ala Gly Lys Leu Gly Ala Val Thr Val Ala Thr Asn
 610 615 620
 Met Ala Gly Arg Gly Thr Asp Ile Lys Leu Asp Asn Glu Ala Val Ile
 625 630 635 640
 Val Gly Gly Leu His Val Ile Gly Thr Thr Arg His Gln Ser Arg Arg
 645 650 655
 Ile Asp Arg Gln Leu Arg Gly Arg Cys Ala Arg Leu Gly Asp Pro Gly
 660 665 670
 Ala Ala Lys Phe Phe Leu Ser Phe Glu Asp Arg Leu Met Arg Leu Phe
 675 680 685
 Ala Ser Pro Lys Leu Asn Thr Leu Ile Arg His Phe Arg Pro Pro Glu
 690 695 700
 Gly Glu Ala Met Ser Asp Pro Met Phe Asn Arg Leu Ile Glu Thr Ala
 705 710 715 720
 Gln Lys Arg Val Glu Gly Arg Asn Tyr Thr Ile Arg Lys His Thr Leu
 725 730 735
 Glu Tyr Asp Asp Val Met Asn Lys Gln Arg Gln Ala Ile Tyr Ala Phe
 740 745 750
 Arg His Asp Val Leu His Ala Glu Ser Val Phe Asp Leu Ala Lys Glu
 755 760 765
 Ile Leu Cys His Val Ser Leu Met Val Ala Ser Leu Val Met Ser Asp
 770 775 780
 Arg Gln Phe Lys Gly Trp Thr Leu Pro Asn Leu Glu Glu Trp Ile Thr
 785 790 795 800
 Ser Ser Phe Pro Ile Ala Leu Asn Ile Glu Glu Leu Arg Gln Leu Lys
 805 810 815
 Asp Thr Asp Ser Ile Ala Glu Lys Ile Ala Ala Glu Leu Ile Gln Glu
 820 825 830
 Phe Gln Val Arg Phe Asp His Met Val Glu Gly Leu Ser Lys Ala Gly
 835 840 845
 Gly Glu Glu Leu Asp Ala Ser Ala Ile Cys Arg Asp Val Val Arg Ser
 850 855 860
 Val Met Val Met His Ile Asp Glu Gln Trp Arg Ile His Leu Val Asp
 865 870 875 880
 Met Asp Leu Leu Arg Ser Glu Val Gly Leu Arg Thr Val Gly Gln Lys
 885 890 895
 Asp Pro Leu Leu Glu Phe Lys His Glu Ser Phe Leu Leu Phe Glu Ser
 900 905 910
 Leu Ile Arg Asp Ile Arg Ile Thr Ile Ala Arg His Leu Phe Arg Leu
 915 920 925
 Glu Leu Thr Val Glu Pro Asn Pro Arg Val Asn Asn Val Ile Pro Thr
 930 935 940
 Val Ala Thr Ser Phe His Asn Asn Val Asn Tyr Gly Pro Leu Glu Leu
 945 950 955 960
 Thr Val Val Thr Asp Ser Glu Asp Gln Asp
 965 970

<310>907

<311>467

<312>PRT

<313>Chlamydia pneumoniae

<400>907

Met Leu Lys Ile Ala Ile Leu Gly Arg Pro Asn Val Gly Lys Ser Ser
 1 5 10 15
 Leu Phe Asn Arg Leu Cys Lys Arg Ser Leu Ala Ile Val Asn Ser Gln
 20 25 30
 Glu Gly Thr Thr Arg Asp Arg Leu Tyr Gly Glu Leu His Ala Phe Gly
 35 40 45
 Val Pro Ala Gln Val Ile Asp Thr Gly Gly Val Asp His Asn Ser Glu
 50 55 60
 Asp Tyr Phe Gln Lys His Ile Tyr Asn Gln Ala Leu Thr Gly Ala Lys

65 70 75 80
Glu Ala Asp Val Leu Leu Leu Val Ile Asp Ile Arg Cys Gly Ile Thr
85 90 95
Glu Glu Asp Ala His Leu Ala Lys Leu Leu Leu Pro Leu Lys Lys Pro
100 105 110
Leu Ile Leu Val Ala Asn Lys Ala Asp Ser Arg Gln Glu Glu Leu Gln
115 120 125
Ile His Glu Thr Tyr Lys Leu Gly Ile Arg Asp Ile Val Val Thr Ser
130 135 140
Thr Ala His Asp Lys His Ile Asp Thr Leu Leu Gln Arg Ile Lys Leu
145 150 155 160
Val Ala Asn Leu Pro Glu Pro Arg Glu Glu Glu Glu Gly Leu Glu
165 170 175
Glu Leu Ser Val Asp Glu His Glu Glu Ser Glu Ala Ala Leu Pro Ser
180 185 190
Asn Thr Phe Pro Asp Phe Ser Glu Val Phe Thr Glu Gly Phe Ser Pro
195 200 205
Glu Glu Pro Cys Thr Ile Pro Glu Ser Pro Gln Gln Ala Pro Lys Thr
210 215 220
Leu Lys Ile Ala Leu Ile Gly Arg Pro Asn Val Gly Lys Ser Ser Ile
225 230 235 240
Ile Asn Gly Leu Leu Asn Glu Glu Arg Cys Ile Ile Asp Asn Thr Pro
245 250 255
Gly Thr Thr Arg Asp Asn Ile Asp Ile Leu Tyr Ser His Lys Asp Arg
260 265 270
Gln Tyr Leu Phe Ile Asp Thr Ala Gly Leu Arg Lys Met Lys Ser Val
275 280 285
Lys Asn Ser Ile Glu Trp Ile Ser Ser Ser Arg Thr Glu Lys Ala Ile
290 295 300
Ser Arg Ala Asp Ile Cys Leu Leu Val Ile Asp Ala Thr Gln Lys Leu
305 310 315 320
Ser Ser Tyr Glu Lys Arg Ile Leu Ser Leu Ile Ser Lys Arg Lys Lys
325 330 335
Pro His Ile Ile Leu Ile Asn Lys Trp Asp Leu Leu Glu Glu Val Arg
340 345 350
Met Glu His Tyr Cys Lys Asp Leu Arg Ala Thr Asp Pro Tyr Leu Gly
355 360 365
Gln Ala Lys Met Leu Cys Ile Ser Ala Thr Thr Lys Arg Asn Leu Lys
370 375 380
Lys Ile Phe Ser Ala Ile Asp Glu Leu His His Val Val Ser Asn Lys
385 390 395 400
Val Pro Thr Pro Ile Val Asn Lys Thr Leu Ala Ser Ala Leu His Arg
405 410 415
Asn His Pro Gln Val Ile Gln Gly Arg Arg Leu Arg Ile Tyr Tyr Ala
420 425 430
Ile Gln Lys Thr Thr Thr Pro Leu Gln Phe Leu Leu Phe Ile Asn Ala
435 440 445
Lys Ser Leu Leu Thr Lys His Tyr Glu Tyr Tyr Leu Lys Asn Thr Leu
450 455 460
Lys Ser Ser Phe Asn Leu Tyr Gly Ile Pro Phe Asp Leu Glu Phe Lys
465 470 475 480
Glu Lys Pro Lys Arg His Asn
485

<210>908

<211>410

<212>PRT

<213>Chlamydia pneumoniae

<400>908

Met Thr Thr Ile Ala Ile Glu Ala Ala Lys Lys Val Leu Ile Lys Leu
1 5 10 15
Arg Asn Ala Gly Tyr Gln Ala Tyr Phe Val Gly Gly Cys Val Arg Asp
20 25 30
Met Leu Met Asn Arg Pro Leu Glu Asp Ile Asp Ile Ala Thr Asn Ala
35 40 45

Ser Pro Thr Ile Val Ser Thr Ile Phe Pro Asp Val Ile Ser Ile Gly
 50 55 60
 Val Ala Phe Gly Ile Ile Val Val Lys Gln Asp Gly Arg Leu Phe Glu
 65 70 75 80
 Val Ala Thr Phe Arg Ser Asp Gly Glu Tyr Lys Asp Gly Arg His Pro
 85 90 95
 Asp Arg Ile Ile Phe Ser Ser Met Arg Glu Asp Ala Leu Arg Arg Asp
 100 105 110
 Phe Thr Val Asn Gly Met Tyr Tyr Asp Pro Phe Glu Asp Lys Val Phe
 115 120 125
 Asp Phe Val Glu Gly Thr Arg Asp Ile Glu Lys Lys Val Ile Arg Ala
 130 135 140
 Ile Gly His Pro Arg Leu Arg Phe Ser Glu Asp Lys Leu Arg Ile Leu
 145 150 155 160
 Arg Ala Ile Arg Phe Ser Ser Ser Leu Gly Phe Thr Leu Asp Pro Thr
 165 170 175
 Thr Glu Arg Ala Ile Ile Lys Glu Ala Pro Ala Leu Val Asn Ser Val
 180 185 190
 Ser Pro Glu Arg Ile Trp Gln Glu Leu Lys Lys Met Leu Lys Arg Gln
 195 200 205
 Pro Tyr Gly Ala Leu Ser Leu Leu Lys Leu Lys Val Leu Ile Phe
 210 215 220
 Ile Phe Pro Glu Leu Arg Asp Ile Pro Tyr Ser Leu Leu Arg Thr Thr
 225 230 235 240
 Ile Glu Phe Ala Arg Lys Phe Asn Pro Thr His Phe Pro Glu Ile Leu
 245 250 255
 Phe Leu Leu Pro Leu Phe Gln Gly Val Ser Glu Glu Ala Ala Thr Val
 260 265 270
 Ala Phe Gly Arg Leu Arg Ile Ser Asn Lys Glu Leu Lys Leu Ile Glu
 275 280 285
 Ser Trp Tyr Glu Ala Leu Pro His Phe Gln Asn Gln Ser Gly Asn Arg
 290 295 300
 Val Phe Trp Ala His Phe Leu Ala Ser Pro Thr Ala Pro Leu Phe Leu
 305 310 315 320
 Glu Leu Phe Ser Ala Leu Gln Lys Asp Pro Ser Arg Gln Gln His Phe
 325 330 335
 Ile Ser Arg Val Gln Glu Leu Glu Ser Arg Leu Glu Gln Phe Ile Leu
 340 345 350
 Arg Ile Lys Thr Ser Ser Pro Val Val Ser Ala Pro Asp Leu Ile Ala
 355 360 365
 Lys Gly Ile Ser Pro Gly Arg Leu Leu Gly Asp Leu Leu Arg Glu Ala
 370 375 380
 Glu Ile Leu Ser Ile Glu Asn Glu Cys Leu Asp Lys Glu Lys Ile Leu
 385 390 395 400
 Leu Leu Leu Gln Glu Lys Gly Phe Trp Lys
 405 410

<210>509

<211>185

<212>PRT

<213>Chlamydia pneumoniae

<400>209

Arg Val Tyr Pro Ser Gln Tyr Gly Lys Tyr Leu Ile Tyr Arg Arg Arg
 1 5 10 15
 Thr Phe Val Asn Leu Asp Lys Ile Ile Ala Lys Arg Leu Gly Lys Thr
 20 25 30
 Thr Ile Gly Phe Ser Asp Asp Gln Ala Asp Leu Ser Gln Lys Thr Arg
 35 40 45
 Asp His Leu Leu Ala Lys Val Glu Thr Glu Asp Leu Ile Ala Phe Gly
 50 55 60
 Met Ile Pro Glu Phe Val Gly Arg Phe Asn Cys Ile Val Asn Cys Glu
 65 70 75 80
 Glu Leu Ser Leu Asp Glu Leu Val Ala Ile Leu Thr Glu Pro Thr Asn
 85 90 95
 Ala Ile Val Lys Gln Tyr Met Glu Leu Phe Ala Glu Glu Asn Val Lys

100	105	110
Leu Val Phe Lys Lys Glu Ala Leu Tyr Ala Ile Ala Lys Lys Ala Lys		
115	120	125
Gln Ala Lys Thr Gly Ala Arg Ala Leu Gly Met Ile Leu Glu Asn Leu		
130	135	140
Leu Arg Asp Leu Met Phe Glu Ile Pro Ser Asp Pro Thr Val Glu Ala		
145	150	155
Ile His Ile Gln Glu Asp Thr Ile Ala Glu Asn Lys Ala Pro Ile Ile		
165	170	175
Ile Arg Arg Thr Pro Glu Ala Ile Ala		
180	185	

<210>910

<211>256

<212>PRT

<213>Chlamydia pneumoniae

<400>910

Met Asn Lys Lys Asn Leu Thr Ile Cys Ser Phe Cys Gly Arg Ser Glu		
1	5	10
Lys Asp Val Glu Lys Leu Ile Ala Gly Pro Ser Val Tyr Ile Cys Asp		
20	25	30
Tyr Cys Ile Lys Leu Cys Ser Gly Ile Leu Asp Lys Lys Pro Ser Ser		
35	40	45
Thr Ile Ser Ser Ala Pro Val Ser Glu Thr Pro Ser Gln Pro Ser Asp		
50	55	60
Leu Arg Val Leu Thr Pro Lys Glu Ile Lys Lys His Ile Asp Glu Tyr		
65	70	75
Val Ile Gly Gln Glu Arg Ala Lys Lys Thr Ile Ala Val Ala Val Tyr		
85	90	95
Asn His Tyr Lys Arg Ile Arg Ala Leu Leu His Asn Lys Gln Val Ser		
100	105	110
Tyr Gly Lys Ser Asn Val Leu Leu Leu Gly Pro Thr Gly Ser Gly Lys		
115	120	125
Thr Leu Ile Ala Lys Thr Leu Ala Lys Ile Leu Asp Val Pro Phe Thr		
130	135	140
Ile Ala Asp Ala Thr Thr Leu Thr Glu Ala Gly Tyr Val Gly Glu Asp		
145	150	155
Val Glu Asn Ile Val Leu Arg Leu Leu Gln Ala Ala Asp Tyr Asp Val		
165	170	175
Ala Arg Ala Glu Arg Gly Ile Ile Tyr Ile Asp Glu Ile Asp Lys Ile		
180	185	190
Gly Arg Thr Thr Ala Asn Val Ser Ile Thr Arg Asp Val Ser Gly Glu		
195	200	205
Gly Val Gln Gln Ala Leu Leu Lys Ile Val Glu Gly Thr Thr Ala Asn		
210	215	220
Val Pro Pro Lys Gly Gly Arg Lys His Pro Asn Gln Glu Tyr Ile Arg		
225	230	235
Val Asn Thr Glu Asn Ile Leu Phe Ile Val Gly Gly Leu Ser Ser Thr		
245	250	255

<210>911

<211>116

<212>PRT

<213>Chlamydia pneumoniae

<400>911

Cys Lys Tyr Leu Leu His Arg Ser Ser Cys Ile His Gly Ser Pro Leu		
1	5	10
Ile Ile Arg Arg Thr Lys Gly Lys Arg His Ala Leu Pro His Ser Arg		
20	25	30
Met Met Ile His Gln Pro Ser Gly Gly Ile Ile Gly Thr Ser Ala Asp		
35	40	45
Ile Gln Leu Gln Ala Ala Glu Ile Leu Thr Leu Lys Lys His Leu Ala		
50	55	60
Asn Ile Leu Ser Glu Cys Thr Gly Gln Pro Val Glu Lys Ile Ile Glu		
65	70	75
Asp Ser Glu Arg Asp Phe Phe Met Gly Ala Glu Glu Ala Ile Ser Tyr		

85 90 95
 Gly Leu Ile Asp Lys Val Val Thr Ser Ala Lys Glu Thr Asn Lys Asp
 100 105 110
 Thr Ser Ser Thr
 115

<210>912

<211>119

<212>PRT

<213>Chlamydia pneumoniae

<400>912

Met Thr Leu Val Pro Tyr Val Val Glu Asp Thr Gly Arg Gly Glu Arg
 1 5 10 15
 Ala Met Asp Ile Tyr Ser Arg Leu Leu Lys Asp Arg Ile Val Met Ile
 20 25 30
 Gly Gln Glu Ile Thr Glu Pro Leu Ala Asn Thr Val Ile Ala Gln Leu
 35 40 45
 Leu Phe Leu Met Ser Glu Asp Pro Lys Lys Asp Ile Gln Ile Phe Ile
 50 55 60
 Asn Ser Pro Gly Gly Tyr Ile Thr Ala Gly Leu Ala Ile Tyr Asp Thr
 65 70 75 80
 Ile Arg Phe Leu Gly Cys Asp Val Asn Thr Tyr Cys Ile Gly Gln Ala
 85 90 95
 Ala Ser Met Gly Ala Leu Leu Leu Ser Ala Glu Leu Lys Glu Ser Val
 100 105 110
 Thr Leu Phe Pro Ile Ala Val
 115

<210>913

<211>98

<212>PRT

<213>Chlamydia pneumoniae

<400>913

Lys Lys Lys Ser Glu Leu Ile Lys Glu Ala Glu Glu Asp Ala Thr Lys
 1 5 10 15
 Ala Leu Lys Leu Leu Phe Leu Thr His Lys Ile Phe Ser Asp Glu Lys
 20 25 30
 Leu Thr Ile Ser Arg Glu Glu Leu Gln Tyr Met Met Asp Val Cys Ser
 35 40 45
 Arg Glu Arg Phe Gly Gln Gln Pro Pro Lys Asp Ile Ser Asn Asp Thr
 50 55 60
 Leu Gln Glu Leu Val Met Ser Ala Arg Asp Arg Leu Thr Tyr Ser Lys
 65 70 75 80
 Ala Ile Glu His Val Leu Arg Lys Ala Glu Leu Leu Ala Ser Thr Pro
 85 90 95
 Ser Ala

<210>914

<211>240

<212>PRT

<213>Chlamydia pneumoniae

<400>914

Lys Ala Phe Pro Ala Ile Ser Asp Leu Pro Trp Glu Asn Leu Ser Leu
 1 5 10 15
 Pro Gln Glu Gly Ala Ala Ser Glu Ile Ser Asp Ser Asp Ile Glu Lys
 20 25 30
 Gly Leu Thr Asn Ile Gly Met Phe Phe Ala Thr Lys Thr Pro Val Glu
 35 40 45
 Arg Pro Ser Gln Glu Gly Asp Phe Ile Ser Ile Ser Leu His Val Ser
 50 55 60
 Lys Ser Asn Asp Glu Asn Ala Ser Ser Ala Ala Ile Phe Glu Asn Lys
 65 70 75 80
 Tyr Phe Lys Leu Ser Glu Glu Glu Met Thr Asp Ala Phe Lys Glu Lys
 85 90 95
 Phe Leu Gly Ile Ser Thr Gly His Arg Val Val Glu Thr Ile Thr Ser
 100 105 110

Pro Glu Ile Gln Ser Phe Leu Arg Gly Asp Thr Leu Thr Phe Thr Val
 115 120 125
 Asn Ala Val Ile Glu Val Ser Ile Pro Glu Ile Asp Asp Glu Lys Ala
 130 135 140
 Arg Gln Leu Gln Ala Glu Ser Leu Asp Asp Leu Lys Ala Lys Leu Arg
 145 150 155 160
 Ile Gln Leu Glu Lys Gln Ala Lys Asp Lys Gln Leu Gln Lys Arg Phe
 165 170 175
 Ser Glu Ala Glu Asp Ala Leu Ala Met Leu Val Asp Phe Glu Leu Pro
 180 185 190
 Thr Ser Leu Leu Glu Glu Arg Ile Ser Leu Ile Thr Arg Glu Lys Leu
 195 200 205
 Leu Asn Ala Arg Leu Ile Gln Tyr Cys Ser Asp Glu Glu Leu Glu Lys
 210 215 220
 Arg Asn Gln Asn Leu Ser Arg Lys Gln Lys Lys Met Leu Gln Lys His
 225 230 235 240

<210>915

<211>166

<212>PRT

<213>Chlamydia pneumoniae

<400>915

Val Gln Ala Ser Ser Pro Ala Phe Pro Phe Lys Ser Asn Lys Lys Gly
 1 5 10 15
 Cys Leu Val Pro Arg Ser Leu Ser Asn Glu Gln Phe Ser Val Asp Leu
 20 25 30
 Glu Glu Ser Pro Gly Cys Ile Val Ser Ala Leu Val Lys Val Ser Pro
 35 40 45
 Glu Val Leu Asn Lys Leu Asn Lys Gln Ala Leu Lys Lys Ile Lys Lys
 50 55 60
 Glu Ile Thr Leu Pro Gly Phe Arg Lys Gly Lys Ala Pro Asp Asp Val
 65 70 75 80
 Ile Ala Ser Arg Tyr Pro Thr Asn Val Arg Lys Glu Leu Gly Glu Leu
 85 90 95
 Val Thr Gln Asp Ala Tyr His Ala Leu Ser Thr Val Gly Asp Arg Arg
 100 105 110
 Pro Leu Ser Pro Lys Ala Val Arg Ser Asn Ser Ile Thr Gln Phe Asp
 115 120 125
 Leu Gln Glu Gly Ala Lys Val Glu Phe Ser Tyr Glu Lys Leu Ser Leu
 130 135 140
 Gln Phe Leu Ile Phe Leu Gly Lys Thr Phe Leu Tyr Leu Arg Lys Lys
 145 150 155 160
 Leu Leu Val Arg Phe Gln Ile Val Ile Ser Arg Arg Asp Ser Gln Thr
 165 170 175
 Leu Val Cys Ser Leu Gln Gln Lys Leu Leu
 180 185

<210>916

<211>1075

<212>PRT

<213>Chlamydia pneumoniae

<400>916

Ala Asp Tyr Ile Ile His Ser Tyr Ser Arg Gly Glu Met Leu Asn Phe
 1 5 10 15
 Arg Lys Leu Arg Arg Asp Phe Ser Ala Asn Ile Leu Gln Asp Gly Lys
 20 25 30
 Lys Leu Phe Glu Gln Gly Ala Val Ile Asp Ala Lys Ile Leu Ser Met
 35 40 45
 Asn Gly Glu Thr Val Cys Ile Ser Ala Gln Val Arg Gly Leu Tyr Asp
 50 55 60
 Asn Ile Tyr Glu Cys Glu Ile Glu Val Asp Arg Ser Glu Ser Asp Thr
 65 70 75 80
 Val Asp Ser Asn Cys Asp Cys Ser Tyr Asn Tyr Asp Cys Gln His Ile
 85 90 95
 Val Ala Leu Leu Phe Tyr Leu Glu Gln Tyr Phe Asn Glu Met Val Val
 100 105 110